

FCC Test Report

Product Name	FIELDBOOK
Model No	I1
FCC ID	XGIFB11

Applicant	LOGIC INSTRUMENT S.A.
Address	43 Avenue de l'Europe, BP60012, 95331 DOMONT cedex, France.

Date of Receipt	Oct. 08, 2014
Issued Date	Nov. 28, 2014
Report No.	14A0216R-RFUSP64V00
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 of the equipment and evaluated measurement uncertainty herein.

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Test Report

Issued Date: Nov. 28, 2014

Report No.: 14A0216R-RFUSP64V00



Product Name	FIELDBOOK
Applicant	LOGIC INSTRUMENT S.A.
Address	43 Avenue de l'Europe, BP60012, 95331 DOMONT cedex, France.
Manufacturer	Ubiquonn Technology, Inc.
Model No.	I1
FCC ID.	XGIFBI1
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	LOGIC INSTRUMENT
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2014 ANSI C63.10: 2009 KDB 789033 D01 General UNII Test Procedures v01r04
Test Result	Complied

Documented By :

Genie Chang

(Senior Adm. Specialist / Genie Chang)

Tested By :

Alan Chen

(Engineer / Alan Chen)

Approved By :

Vincent Lin

(Director/ Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	FIELDBOOK
Trade Name	LOGIC INSTRUMENT
FCC ID.	XGIFBI1
Model No.	I1
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz 802.11n-40MHz: 5190-5310, 5510-5670MHz 802.11ac-20MHz: 5720, 802.11ac-40MHz: 5710 802.11ac-80MHz: 5210-5290MHz, 5530-5690MHz
Number of Channels	802.11a/n-20MHz: 19; 802.11n-40MHz: 9 802.11ac-20MHz: 1, 802.11ac-40MHz: 1, 802.11ac-80MHz: 4
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: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: AC 100-240V ~1.5A, 50-60 Hz Output: 19V, 3.42A Cable Out: Non-Shielded, 1.5m, with one ferrite core bonded.
Contain Module	Intel / 7260HMW

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ethertronics	5001791 (Main) 5001799 (Aux)	PIFA Antenna	3.8dBi for 2.4 GHz 5.1dBi For 5.15~5.25GHz 5.1dBi For 5.25~5.35GHz 4.2dBi For 5.47~5.725GHz 2.6dBi 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		

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						

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 138:	5690 MHz

Note:

1. This device is a FIELDBOOK with a built-in 802.11a/b/g/n/ac WLAN transceiver.
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 A)
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-7.2Mbps) Mode 5: Transmit (802.11ac-40BW-15Mbps) Mode 6: Transmit (802.11ac-80BW-65Mbps)
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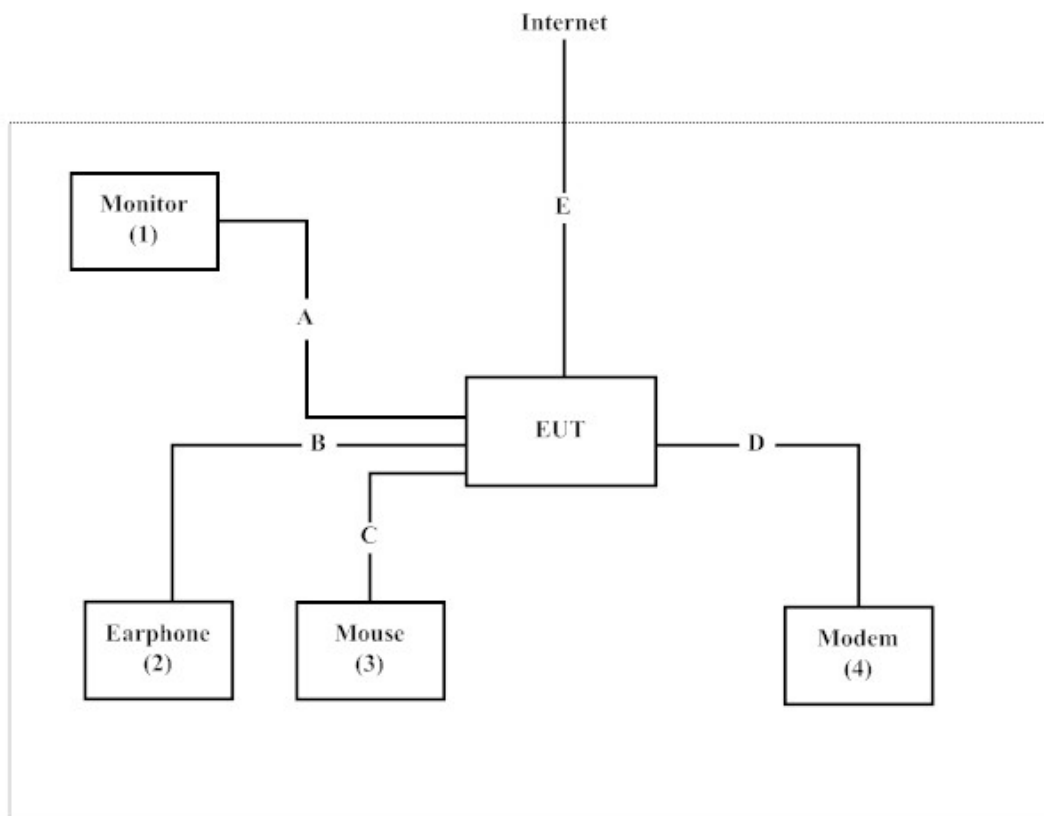
1.3. Tested System Details

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)	Monitor	DELL	ST2320L		Non-Shielded, 1.8m
(2)	Earphone	AIWA	N/A	N/A	N/A
(3)	USB Mouse	Logitech	M-BE58	HCA30103211	N/A
(4)	Modem	ACEEX	DM-1414	0102027553	Non-Shielded, 1.8m

Signal Cable Type	Signal cable Description
A HDMI Cable	Shielded, 1.8m
B Earphone Cable	Shielded, 1.8m
C Mouse Cable	Shielded, 1.8m
D RS-232 Cable	Shielded, 1.8m
E RJ45 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-v1.7.3.859” 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/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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FCC Accreditation Number: TW1014

2. Conducted Emission

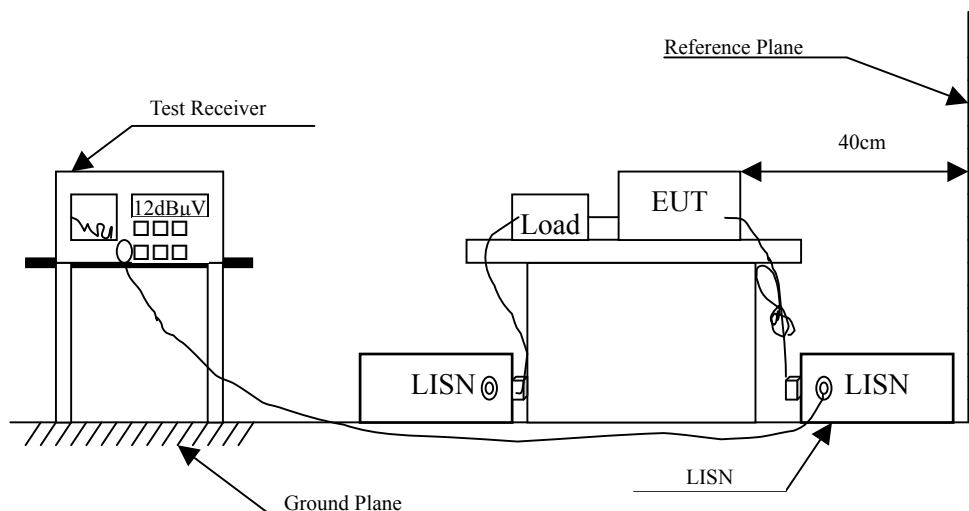
2.1. Test Equipment

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

Note:

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

2.2. Test Setup



2.3. Limits

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

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

2.4. Test Procedure

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

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

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

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : FIELDBOOK
 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 dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 1					
Quasi-Peak					
0.154	9.660	40.610	50.270	-15.616	65.886
0.209	9.651	33.060	42.711	-21.603	64.314
0.302	9.656	21.840	31.496	-30.161	61.657
0.603	9.672	25.770	35.442	-20.558	56.000
0.951	9.691	16.410	26.101	-29.899	56.000
3.212	9.813	24.650	34.463	-21.537	56.000
Average					
0.154	9.660	29.140	38.800	-17.086	55.886
0.209	9.651	23.020	32.671	-21.643	54.314
0.302	9.656	11.180	20.836	-30.821	51.657
0.603	9.672	5.860	15.532	-30.468	46.000
0.951	9.691	1.470	11.161	-34.839	46.000
3.212	9.813	14.430	24.243	-21.757	46.000

Note:

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

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

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV	dB	dBμV
LINE 2					
Quasi-Peak					
0.158	9.658	40.280	49.938	-15.833	65.771
0.212	9.661	32.170	41.831	-22.398	64.229
0.283	9.664	20.390	30.054	-32.146	62.200
0.603	9.672	24.340	34.012	-21.988	56.000
1.642	9.749	15.670	25.419	-30.581	56.000
20.002	10.211	20.770	30.981	-29.019	60.000
Average					
0.158	9.658	29.300	38.958	-16.813	55.771
0.212	9.661	21.770	31.431	-22.798	54.229
0.283	9.664	5.740	15.404	-36.796	52.200
0.603	9.672	5.080	14.752	-31.248	46.000
1.642	9.749	1.930	11.679	-34.321	46.000
20.002	10.211	13.940	24.151	-25.849	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 : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5290MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV	dB	dBμV
LINE 1					
Quasi-Peak					
0.166	9.657	38.740	48.396	-17.147	65.543
0.205	9.651	32.720	42.371	-22.058	64.429
0.252	9.653	26.480	36.133	-26.953	63.086
0.584	9.671	23.570	33.241	-22.759	56.000
3.138	9.811	25.710	35.521	-20.479	56.000
19.892	10.180	20.720	30.900	-29.100	60.000
Average					
0.166	9.657	26.390	36.046	-19.497	55.543
0.205	9.651	21.910	31.561	-22.868	54.429
0.252	9.653	17.980	27.633	-25.453	53.086
0.584	9.671	14.260	23.931	-22.069	46.000
3.138	9.811	15.290	25.101	-20.899	46.000
19.892	10.180	13.310	23.490	-26.510	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 : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5290MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV	dB	dBμV
LINE 2					
Quasi-Peak					
0.154	9.660	40.040	49.700	-16.186	65.886
0.212	9.661	31.830	41.491	-22.738	64.229
0.306	9.657	21.330	30.987	-30.556	61.543
0.623	9.673	23.920	33.593	-22.407	56.000
3.138	9.811	25.390	35.201	-20.799	56.000
20.021	10.211	20.440	30.651	-29.349	60.000
Average					
0.154	9.660	28.400	38.060	-17.826	55.886
0.212	9.661	21.530	31.191	-23.038	54.229
0.306	9.657	11.300	20.957	-30.586	51.543
0.623	9.673	4.960	14.633	-31.367	46.000
3.138	9.811	14.770	24.581	-21.419	46.000
20.021	10.211	13.850	24.061	-25.939	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 : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5530MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV	dB	dBμV
LINE 1					
Quasi-Peak					
0.154	9.660	39.800	49.460	-16.426	65.886
0.209	9.651	32.390	42.041	-22.273	64.314
0.255	9.653	26.480	36.133	-26.867	63.000
0.611	9.673	21.230	30.903	-25.097	56.000
3.224	9.813	24.910	34.723	-21.277	56.000
20.459	10.183	18.190	28.373	-31.627	60.000
Average					
0.154	9.660	28.320	37.980	-17.906	55.886
0.209	9.651	22.240	31.891	-22.423	54.314
0.255	9.653	16.650	26.303	-26.697	53.000
0.611	9.673	2.680	12.353	-33.647	46.000
3.224	9.813	14.880	24.693	-21.307	46.000
20.459	10.183	11.370	21.553	-28.447	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 : FIELDBOOK
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 6: Transmit (802.11ac-80BW-65Mbps) (5530MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBμV	dBμV	dB	dBμV
LINE 2					
Quasi-Peak					
0.154	9.660	39.540	49.200	-16.686	65.886
0.177	9.659	33.060	42.719	-22.510	65.229
0.252	9.663	26.320	35.983	-27.103	63.086
0.607	9.673	20.930	30.603	-25.397	56.000
3.197	9.812	25.040	34.852	-21.148	56.000
19.877	10.210	20.680	30.890	-29.110	60.000
Average					
0.154	9.660	28.150	37.810	-18.076	55.886
0.177	9.659	21.490	31.149	-24.080	55.229
0.252	9.663	17.450	27.113	-25.973	53.086
0.607	9.673	2.380	12.053	-33.947	46.000
3.197	9.812	14.680	24.492	-21.508	46.000
19.877	10.210	13.890	24.100	-25.900	50.000

Note:

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

3. Maximun conducted output power

3.1. Test Equipment

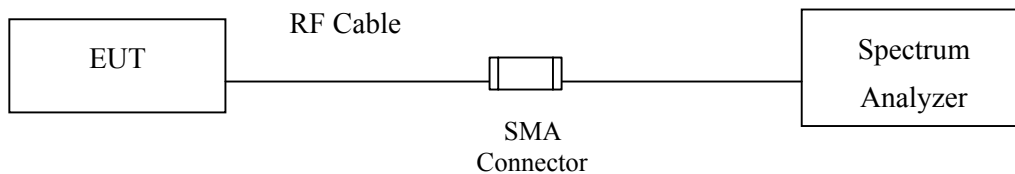
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2014
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2014
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2014

Note:

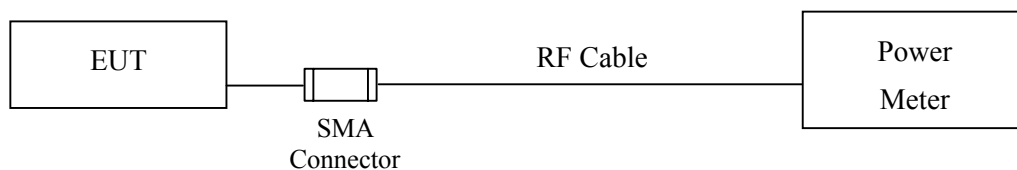
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

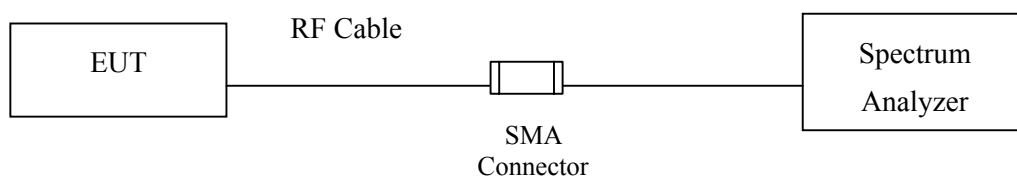
26dBc Occupied Bandwidth



Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



3.3. Limits

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

3.4. Test Procedure

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

802.11an ($BW \leq 40\text{MHz}$) 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 ($BW=80\text{MHz}$) 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

± 1.27 dB

3.6. Test Result of Maximum conducted output power

Product : FIELDBOOK
 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	13.75	--	--	--	--	--	--	--	<17dBm
44	5220	15.68	15.61	15.54	15.47	15.40	15.33	15.26	15.19	<17dBm
48	5240	14.87	--	--	--	--	--	--	--	<17dBm
52	5260	13.01	--	--	--	--	--	--	--	<24dBm
60	5300	15.77	15.71	15.65	15.59	15.53	15.47	15.41	15.35	<24dBm
64	5320	13.17	--	--	--	--	--	--	--	<24dBm
100	5500	13.87	--	--	--	--	--	--	--	<24dBm
116	5580	16.92	16.88	16.84	16.80	16.76	16.72	16.68	16.64	<24dBm
140	5700	13.47	--	--	--	--	--	--	--	<24dBm

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	12.69	--	--	--	--	--	--	--	<17dBm
44	5220	15.57	15.41	15.35	15.29	15.23	15.17	15.11	15.05	<17dBm
48	5240	14.72	--	--	--	--	--	--	--	<17dBm
52	5260	12.98	--	--	--	--	--	--	--	<24dBm
60	5300	15.68	15.61	15.54	15.47	15.40	15.33	15.26	15.19	<24dBm
64	5320	12.93	--	--	--	--	--	--	--	<24dBm
100	5500	13.27	--	--	--	--	--	--	--	<24dBm
116	5580	16.81	16.76	16.61	16.56	16.41	16.36	16.21	16.16	<24dBm
140	5700	12.51	--	--	--	--	--	--	--	<24dBm

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

Maximum conducted output power Measurement:

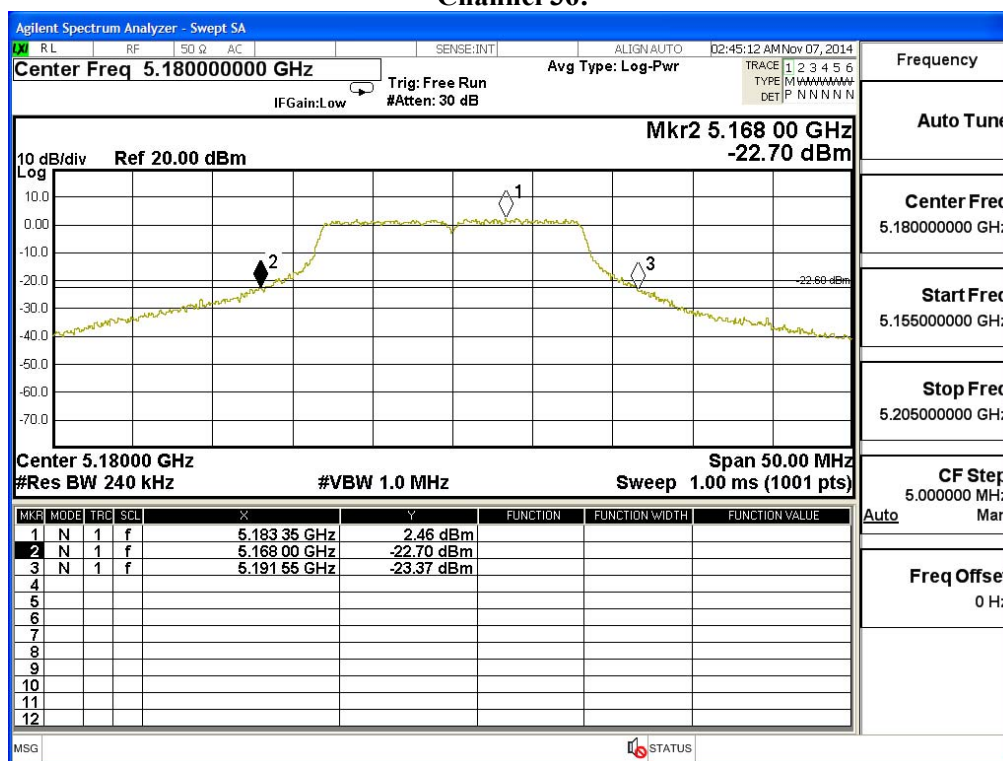
CHAIN B

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	23.550	13.75	17	17.72
44	5220	25.350	15.68	17	18.04
48	5240	25.050	14.87	17	17.99
52	5260	23.950	13.01	24	24.79
60	5300	24.650	15.77	24	24.92
64	5320	23.500	13.17	24	24.71
100	5500	25.100	13.87	24	25.00
116	5580	34.850	16.92	24	26.42
140	5700	24.750	13.47	24	24.94

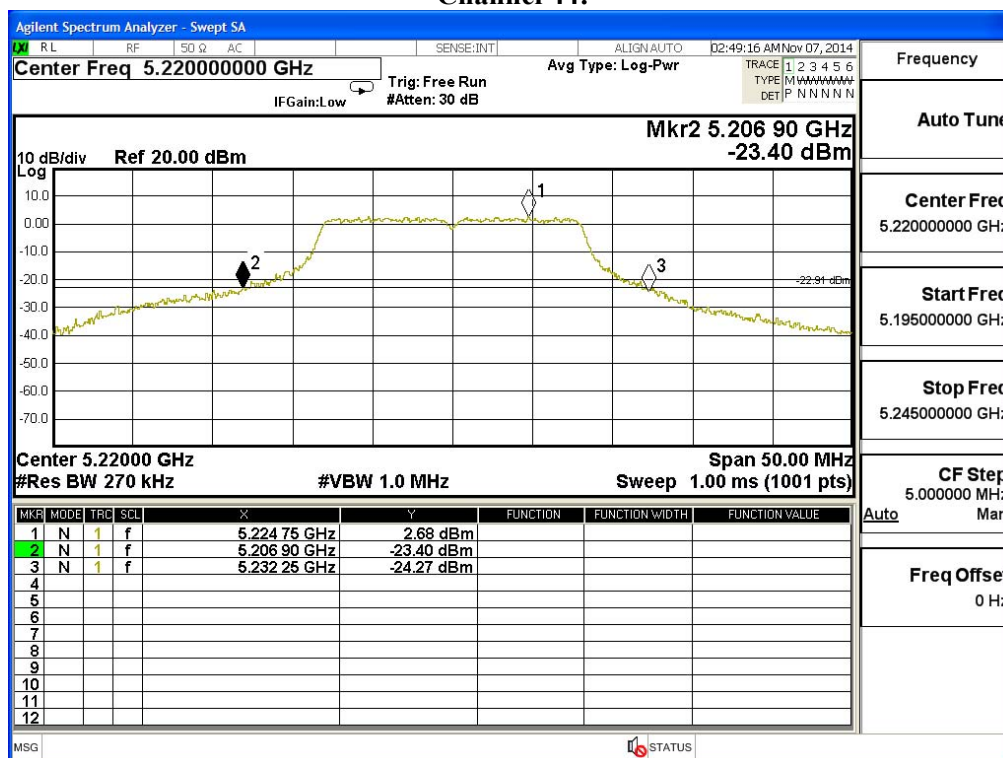
Note:

1. Power Output Value =Reading value on average power meter + cable loss
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

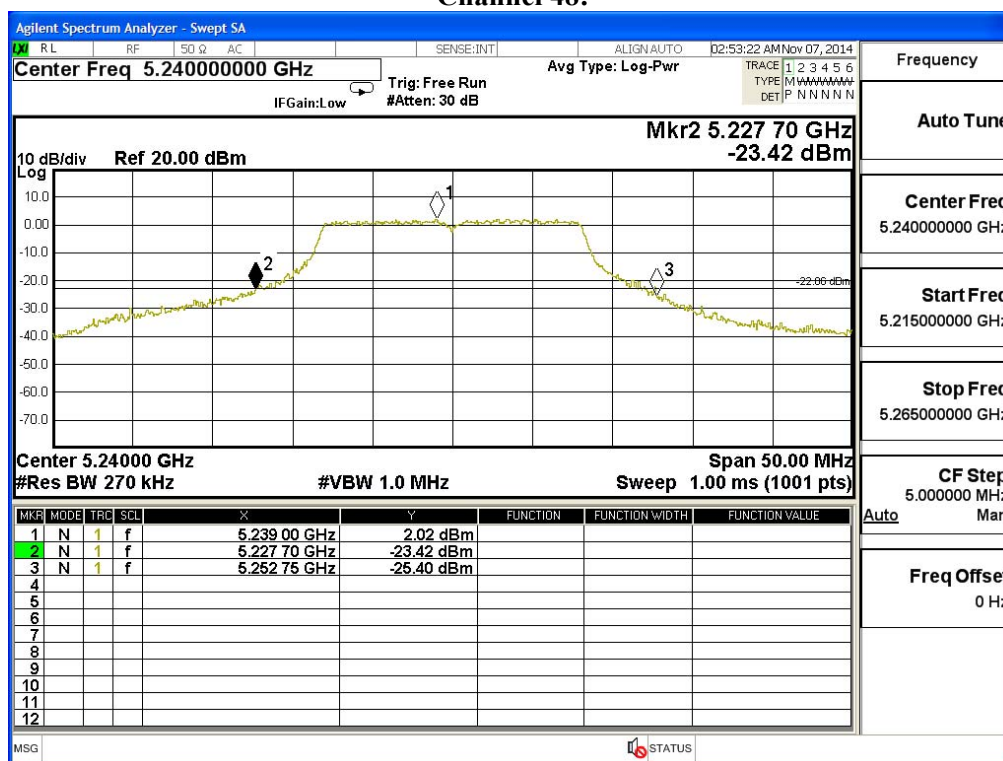
26dBc Occupied Bandwidth: Channel 36:



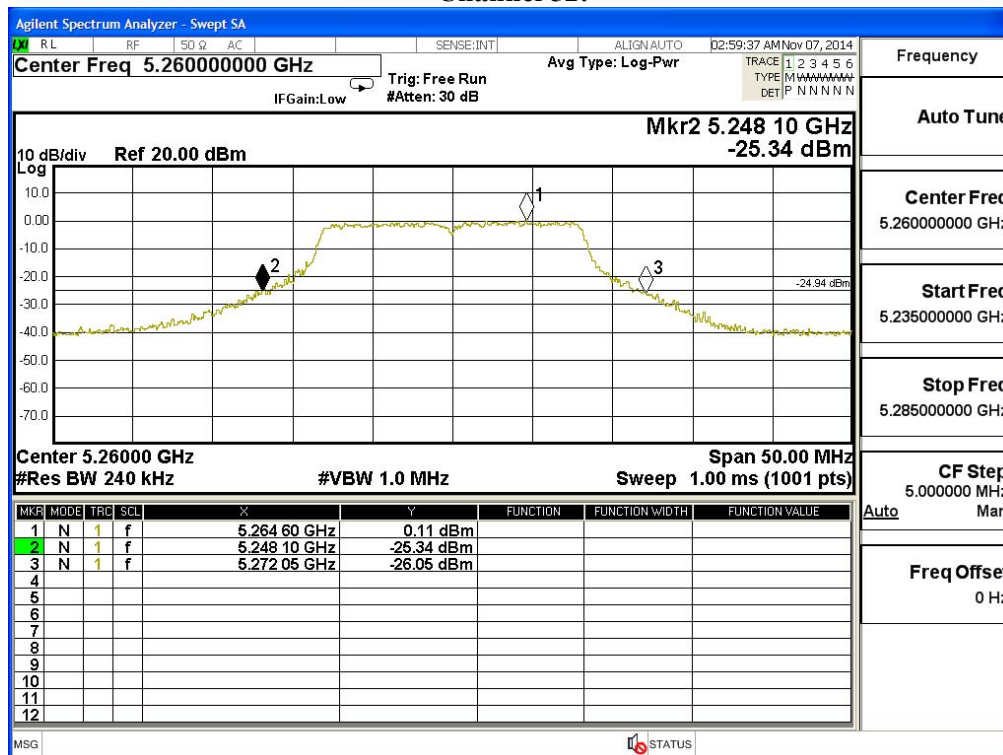
Channel 44:



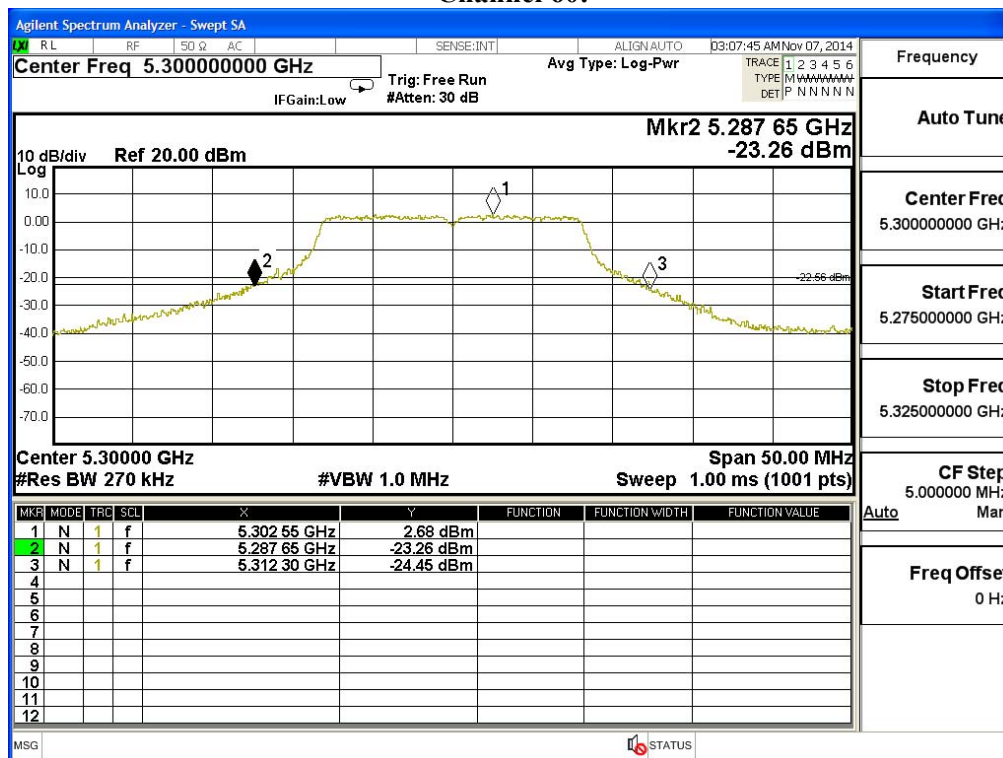
Channel 48:



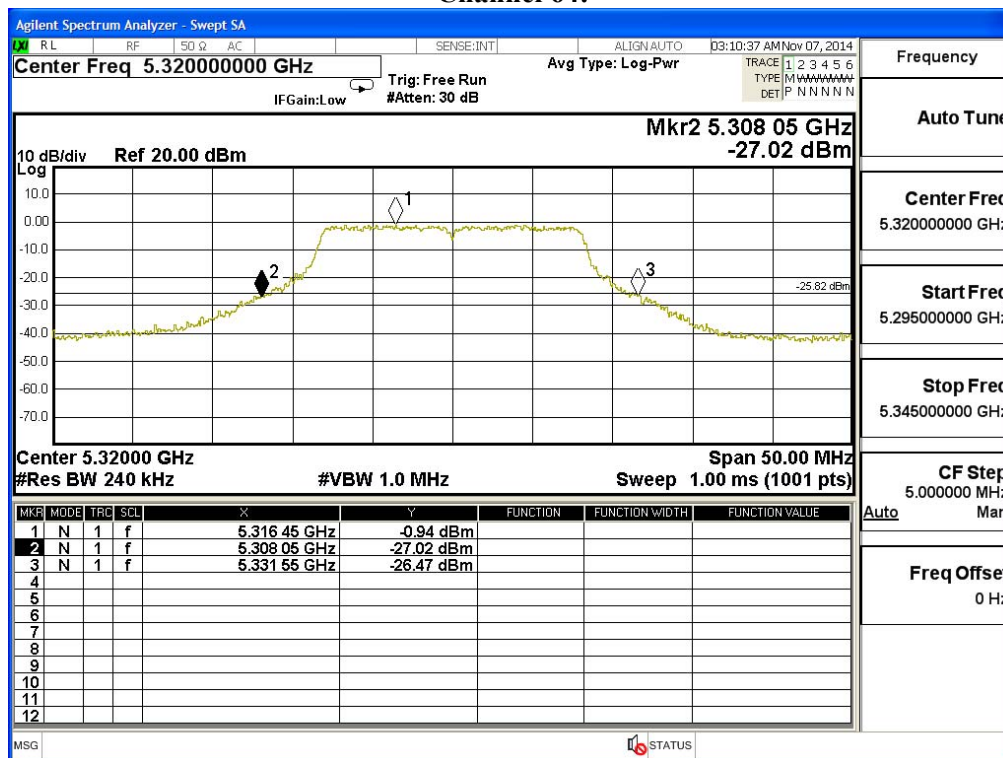
Channel 52:



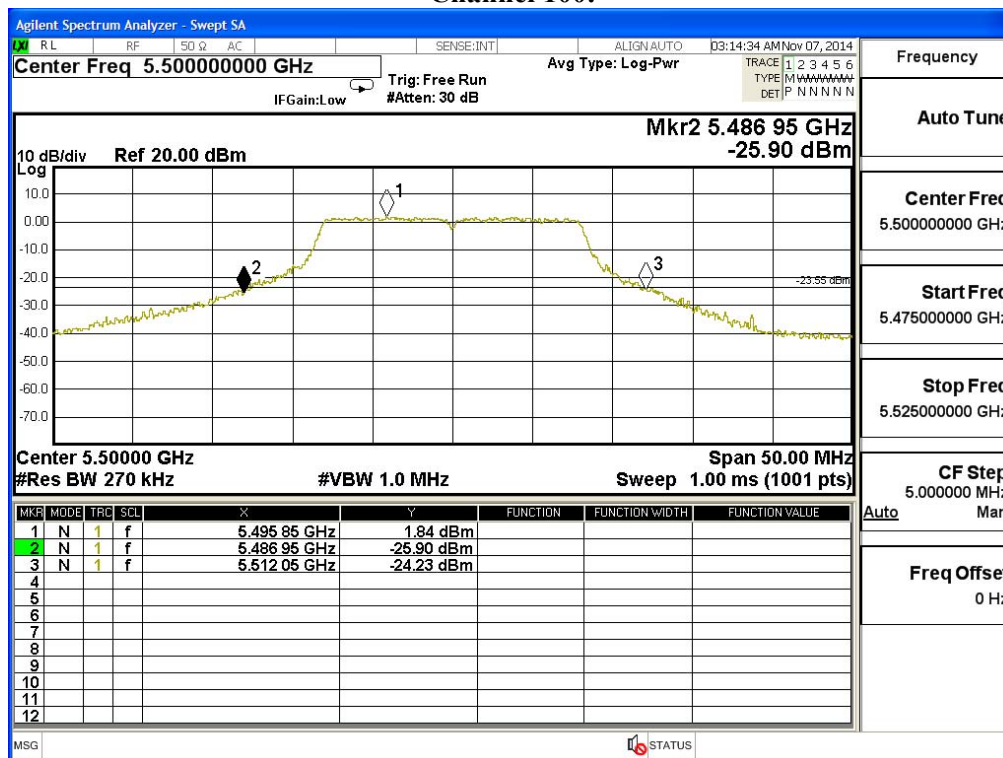
Channel 60:



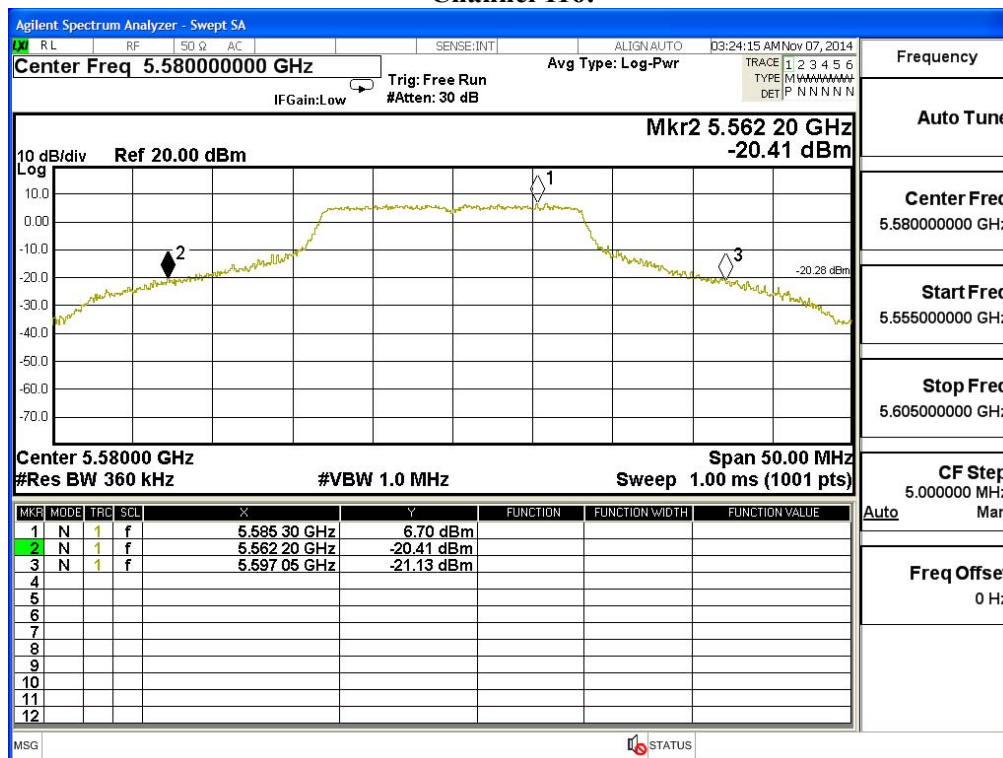
Channel 64:



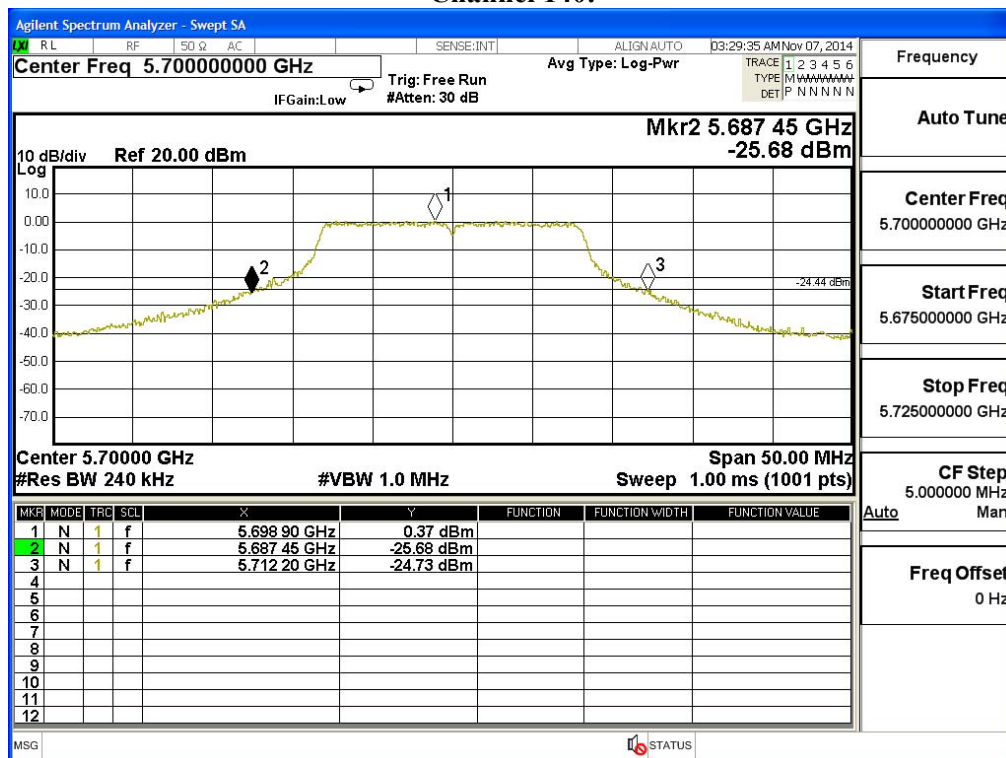
Channel 100:



Channel 116:



Channel 140:



Product : FIELDBOOK
 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
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	10.41	--	--	--	--	--	--	--	<17dBm
44	5220	13.08	12.99	12.9	12.81	12.72	12.63	12.54	12.45	<17dBm
48	5240	12.13	--	--	--	--	--	--	--	<17dBm
52	5260	10.53	--	--	--	--	--	--	--	<24dBm
60	5300	12.86	12.79	12.72	12.65	12.58	12.51	12.44	12.34	<24dBm
64	5320	11.54	--	--	--	--	--	--	--	<24dBm
100	5500	10.52	--	--	--	--	--	--	--	<24dBm
116	5580	13.97	13.92	13.91	13.83	13.75	13.67	13.59	13.51	<24dBm
140	5700	10.64	--	--	--	--	--	--	--	<24dBm

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

CHAIN B

Channel 36

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	
		Measurement Level (dBm)								
36	5180	10.01	--	--	--	--	--	--	--	<17dBm
44	5220	13.01	12.96	12.91	12.86	12.81	12.76	12.71	12.66	<17dBm
48	5240	12.22	--	--	--	--	--	--	--	<17dBm
52	5260	10.54	--	--	--	--	--	--	--	<24dBm
60	5300	12.94	12.87	12.8	12.73	12.66	12.59	12.52	12.45	<24dBm
64	5320	11.37	--	--	--	--	--	--	--	<24dBm
100	5500	10.31	--	--	--	--	--	--	--	<24dBm
116	5580	13.61	13.58	13.55	13.52	13.49	13.46	13.43	13.4	<24dBm
140	5700	9.96	--	--	--	--	--	--	--	<24dBm

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

Maximum conducted output power Measurement:

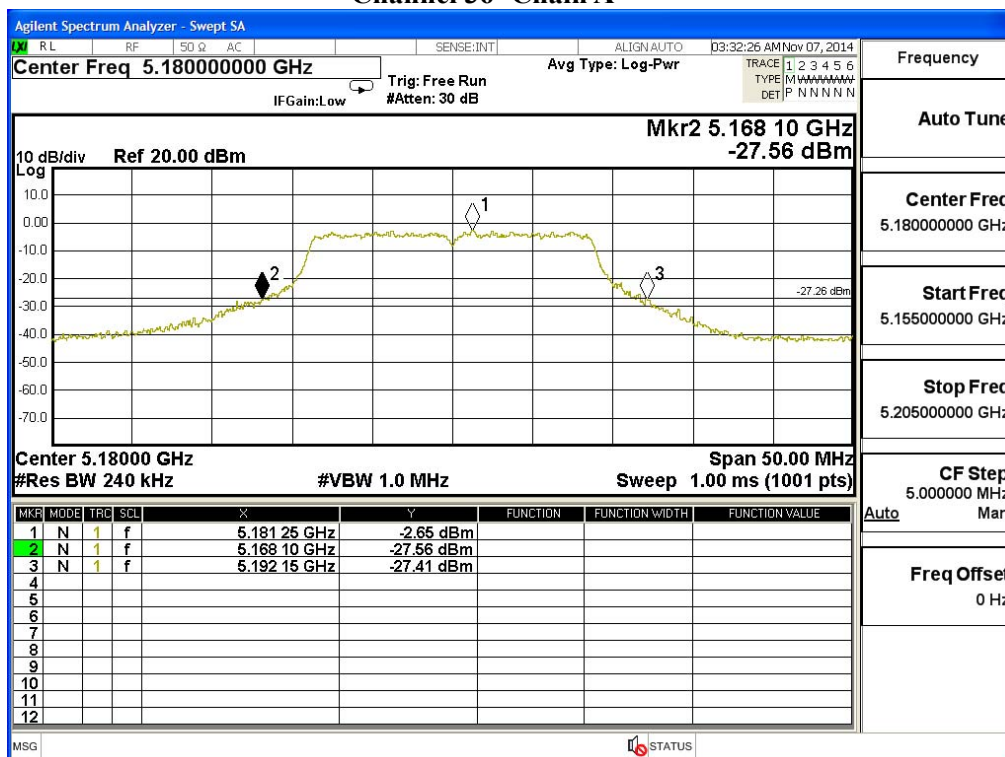
(CHAIN A+ B)

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
36	5180	24.000	10.41	10.01	13.22	17	17.80
44	5220	23.650	13.08	13.01	16.06	17	17.74
48	5240	23.550	12.13	12.22	15.19	17	17.72
52	5260	23.850	10.53	10.54	13.55	24	24.77
60	5300	24.150	12.86	12.94	15.91	24	24.83
64	5320	23.150	11.54	11.37	14.47	24	24.65
100	5500	23.150	10.52	10.31	13.43	24	24.65
116	5580	21.750	13.97	13.61	16.80	24	24.37
140	5700	21.400	10.64	9.96	13.32	24	24.30

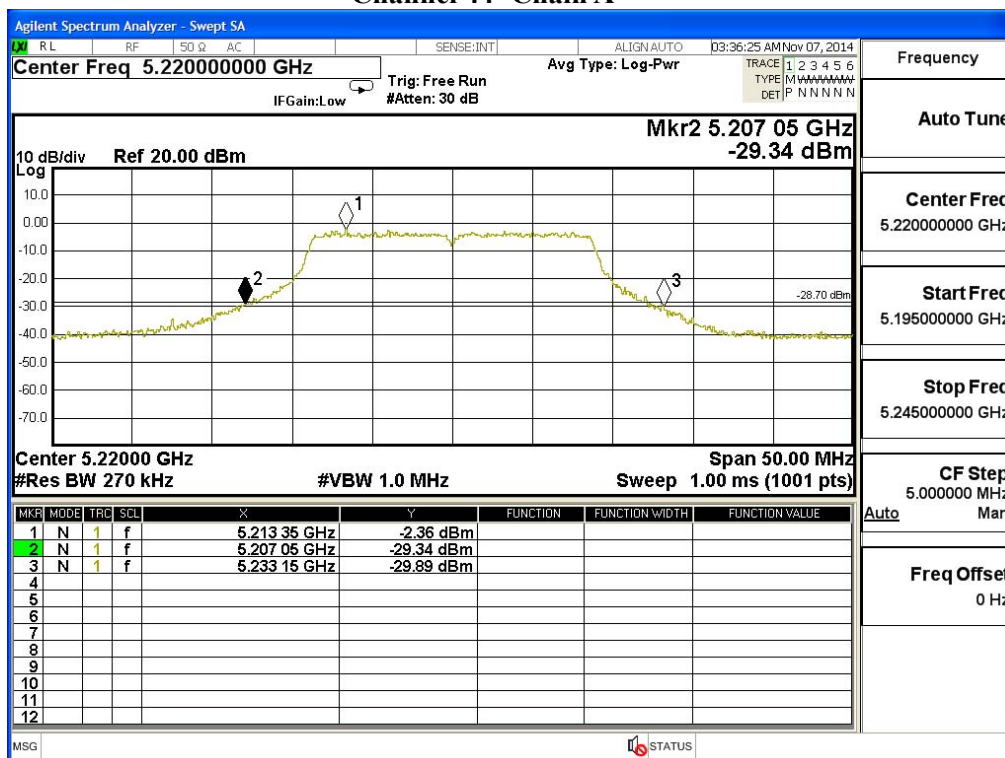
Note:

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. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

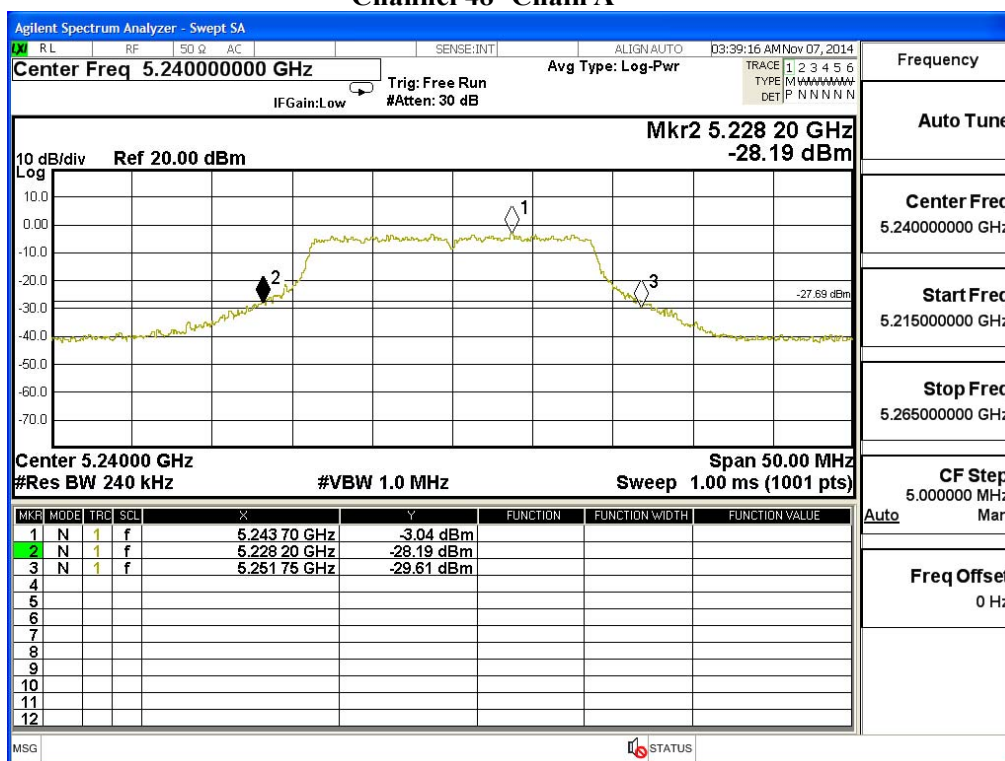
26dBc Occupied Bandwidth: Channel 36 -Chain A



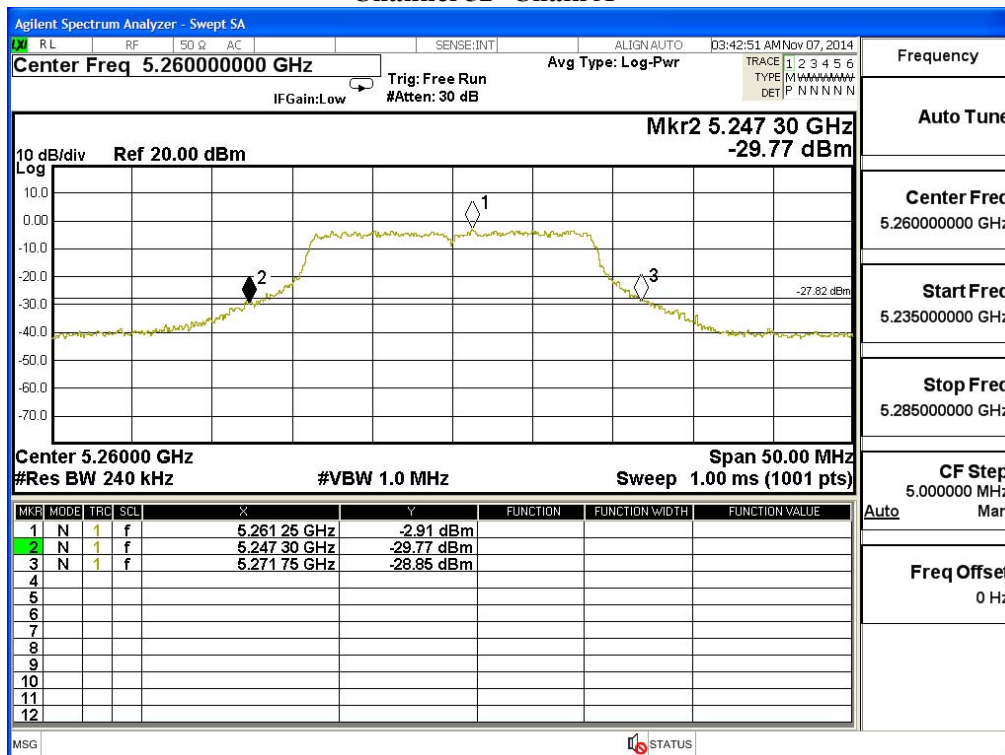
Channel 44 -Chain A



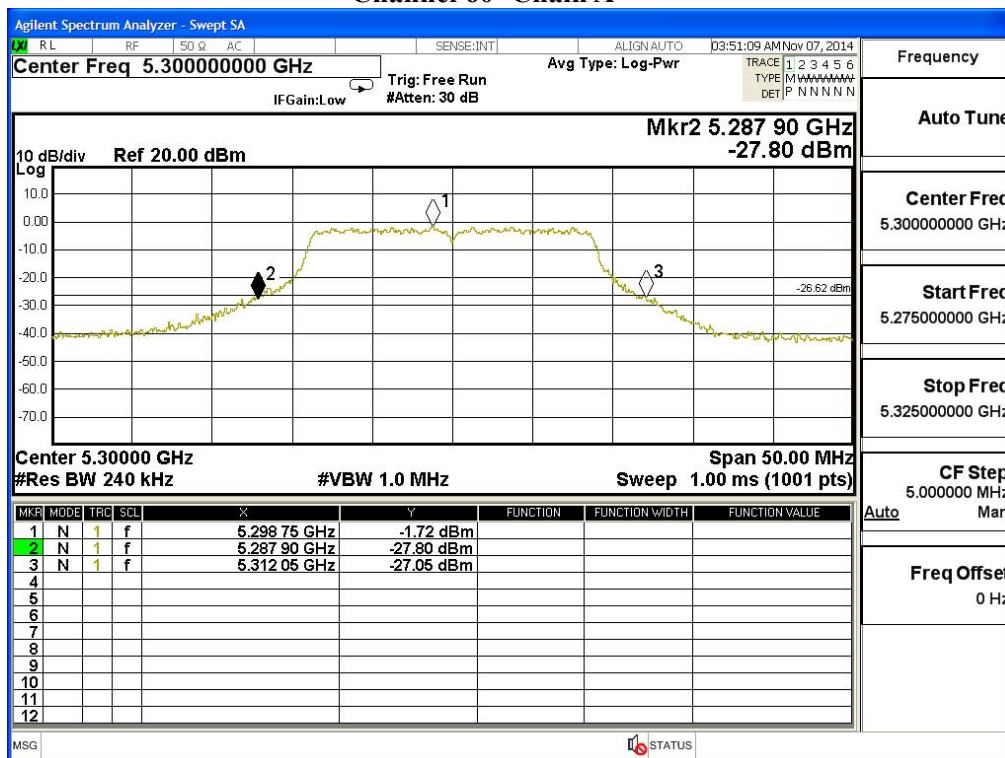
Channel 48 -Chain A



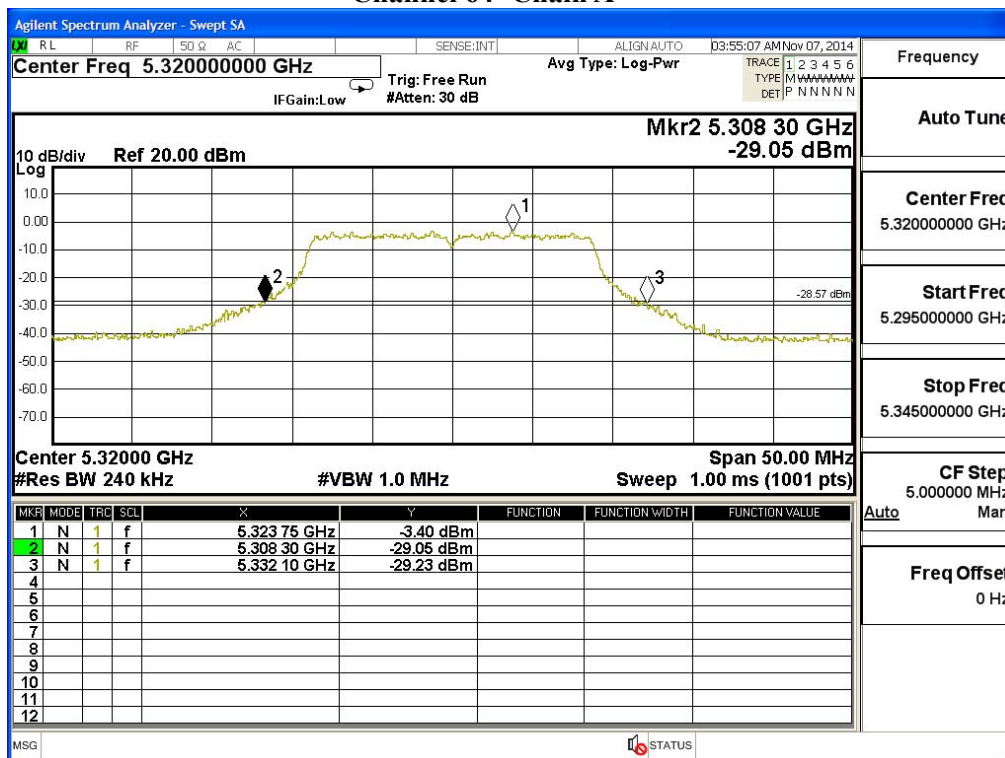
Channel 52 -Chain A



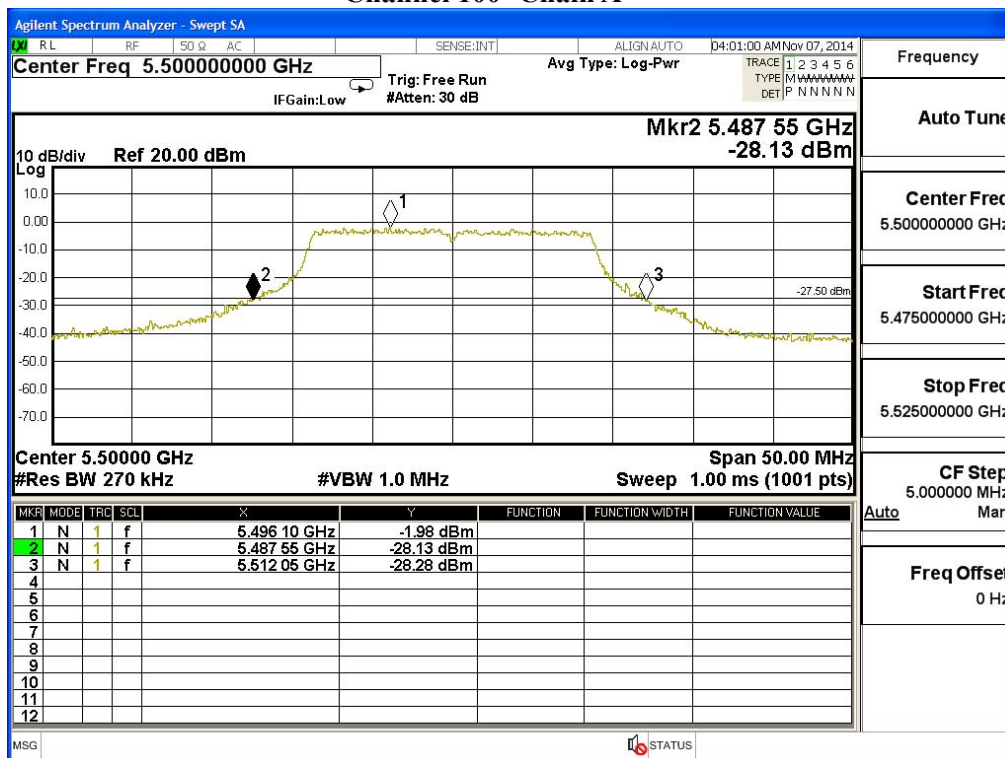
Channel 60 -Chain A



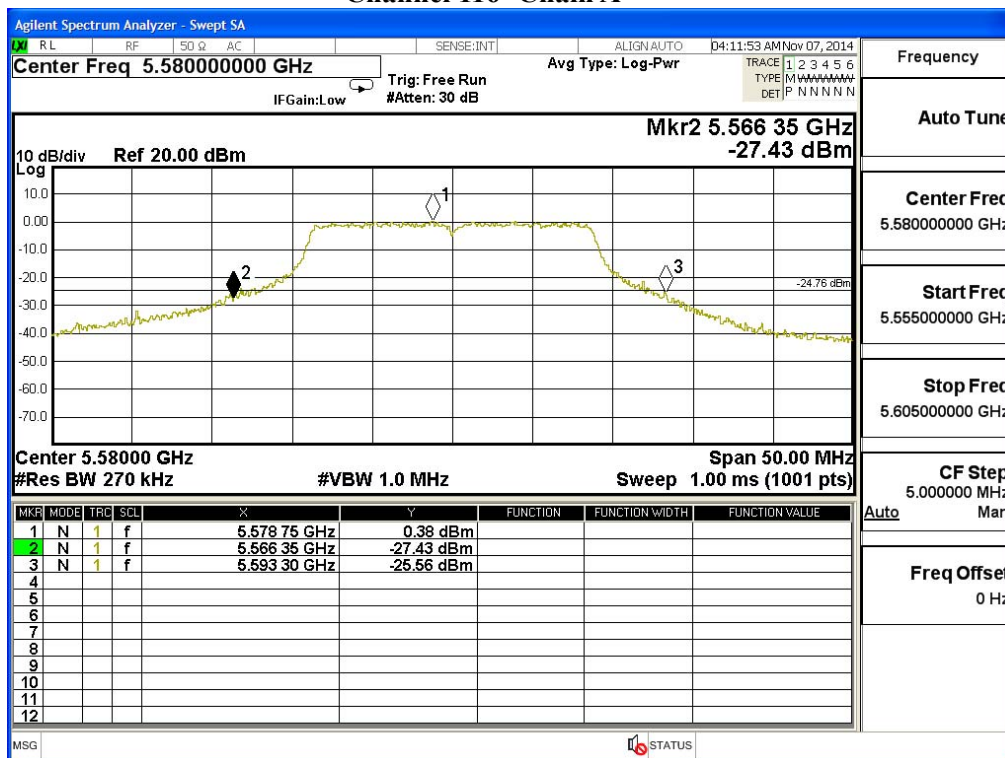
Channel 64 -Chain A



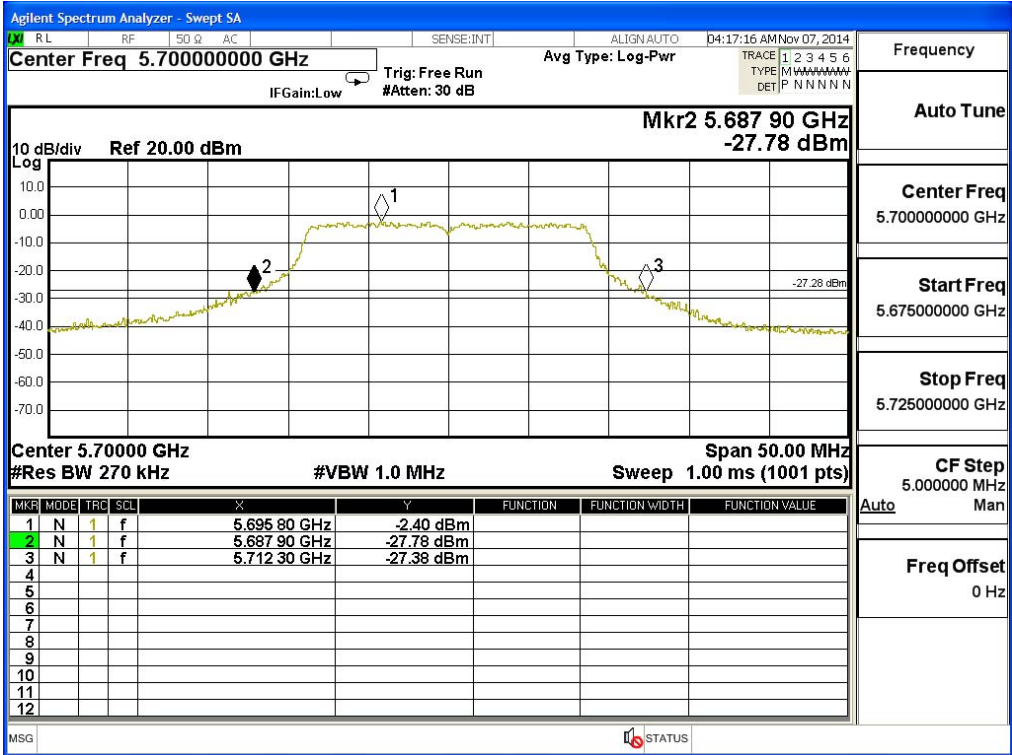
Channel 100 -Chain A



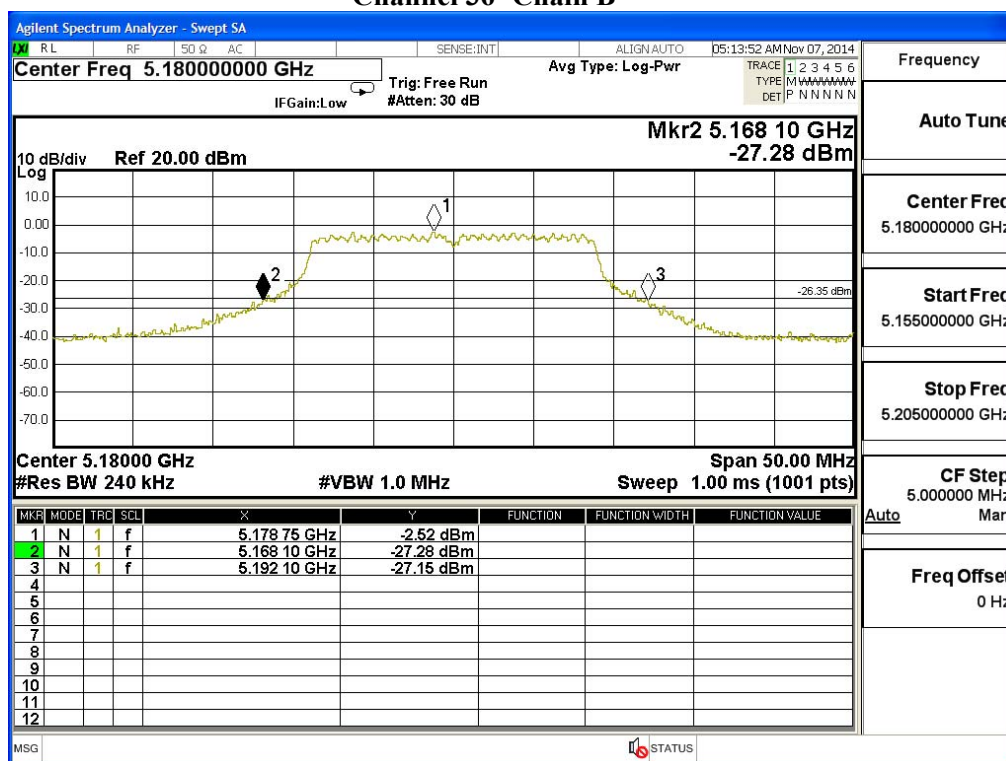
Channel 116 -Chain A



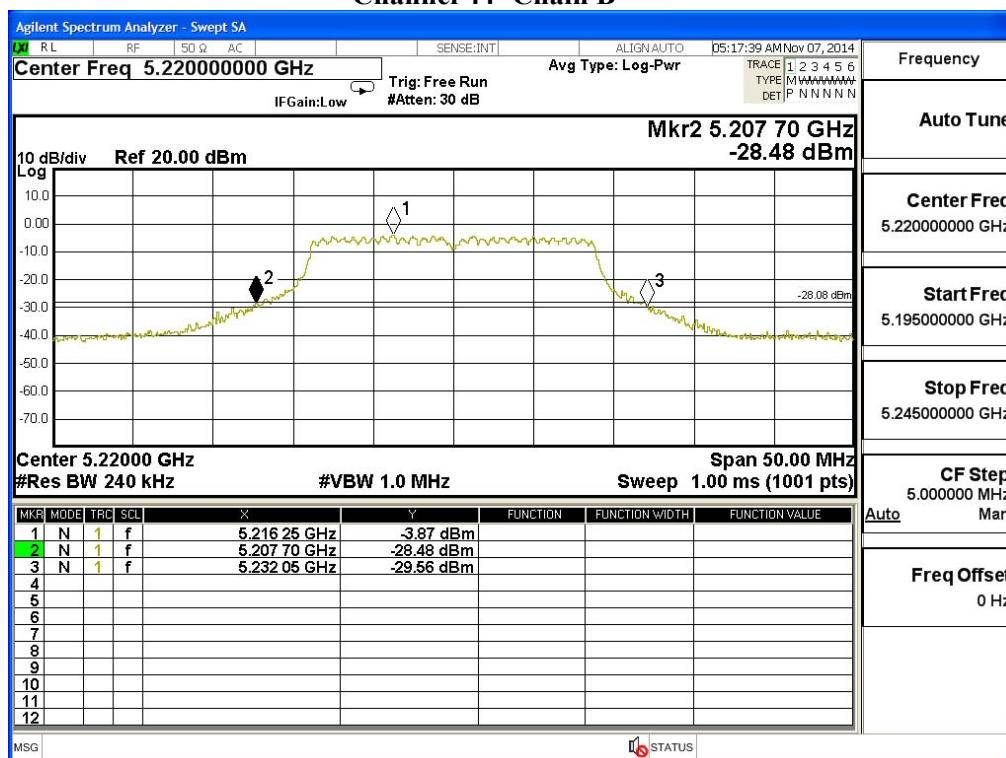
Channel 140 -Chain A



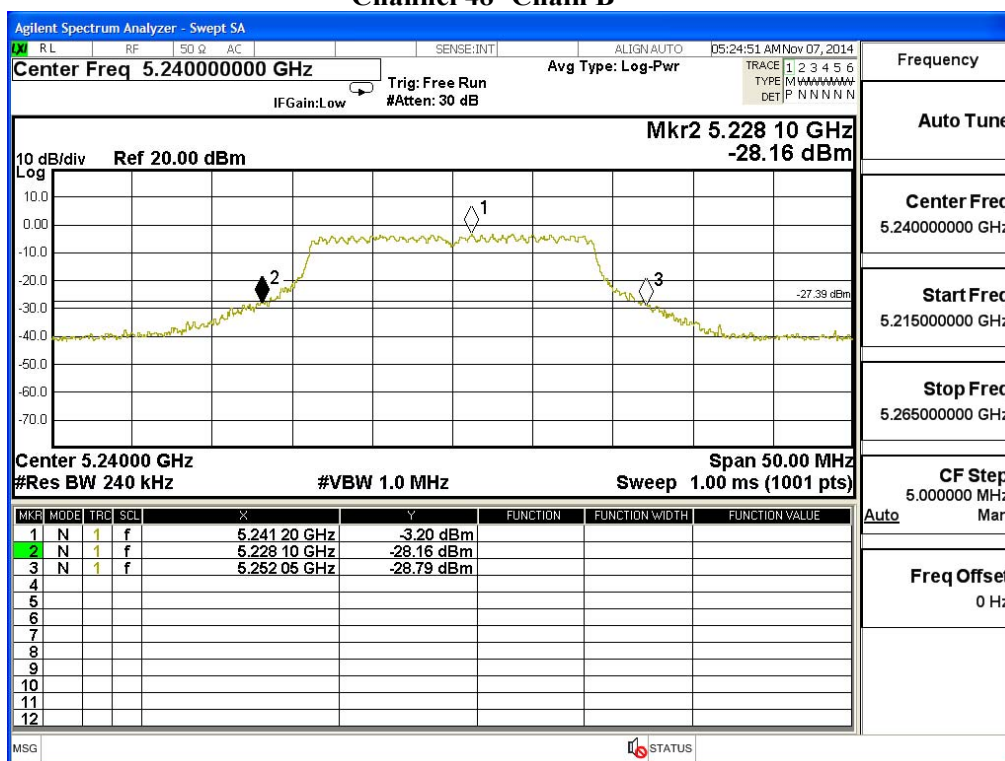
26dBc Occupied Bandwidth: Channel 36 -Chain B



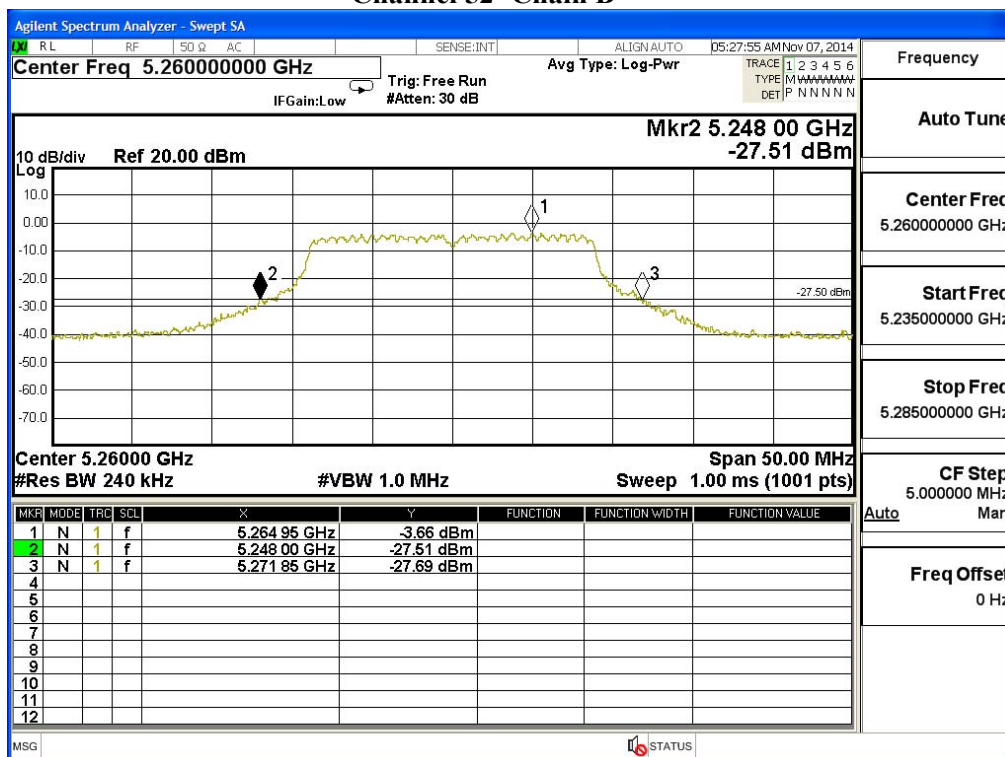
Channel 44 -Chain B



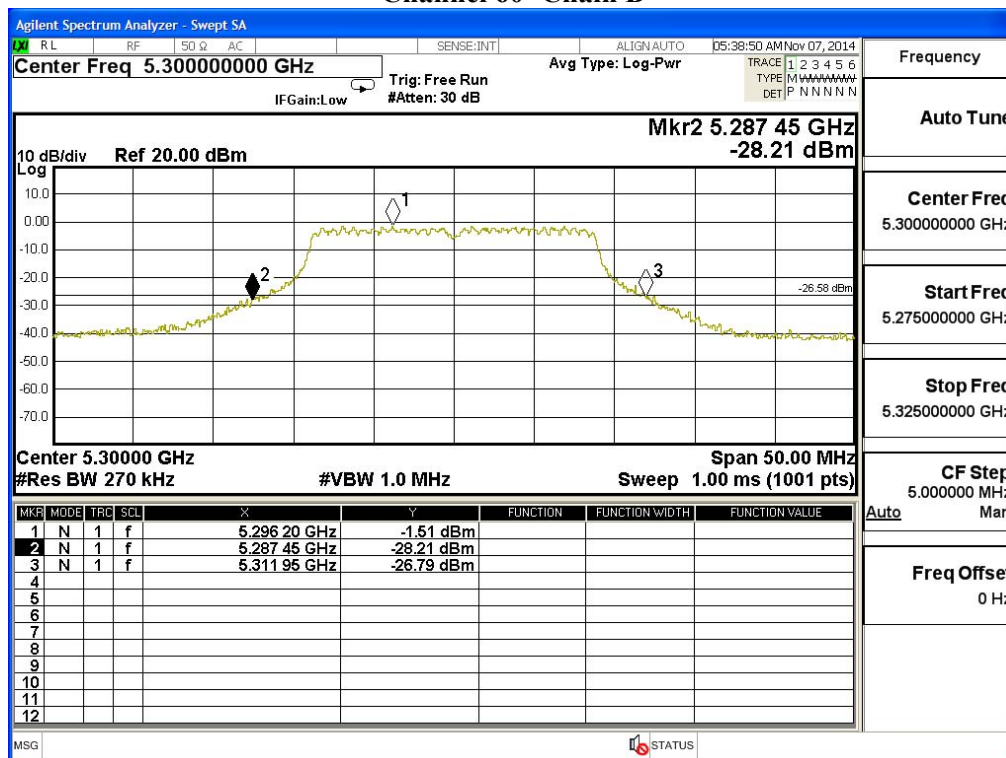
Channel 48 -Chain B



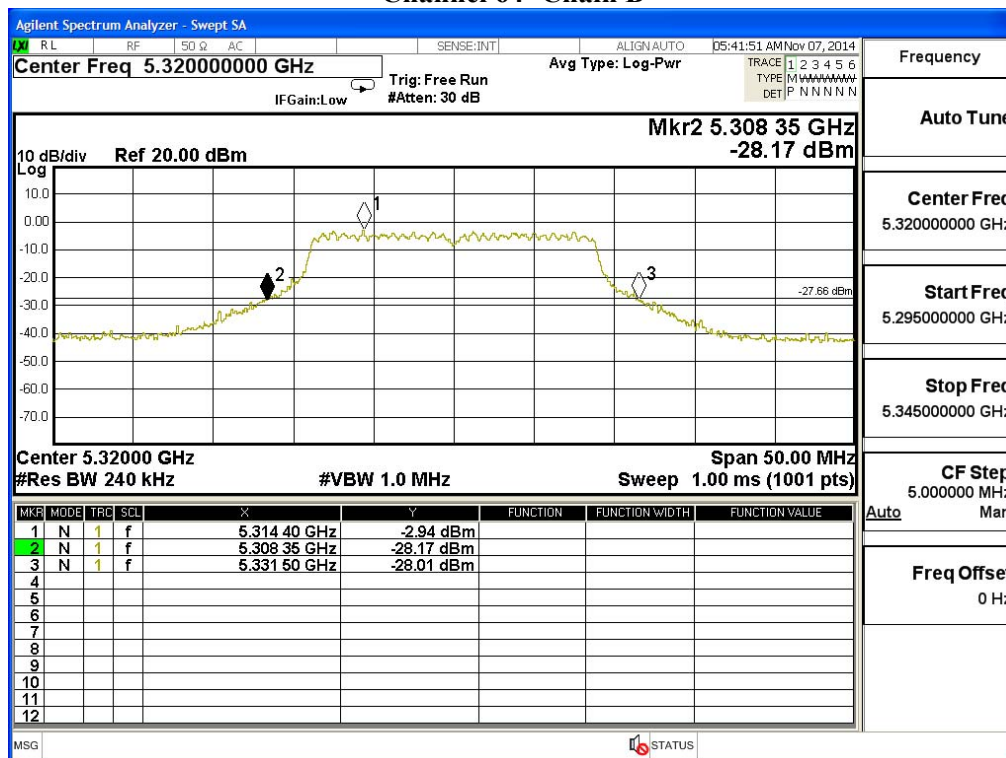
Channel 52 -Chain B



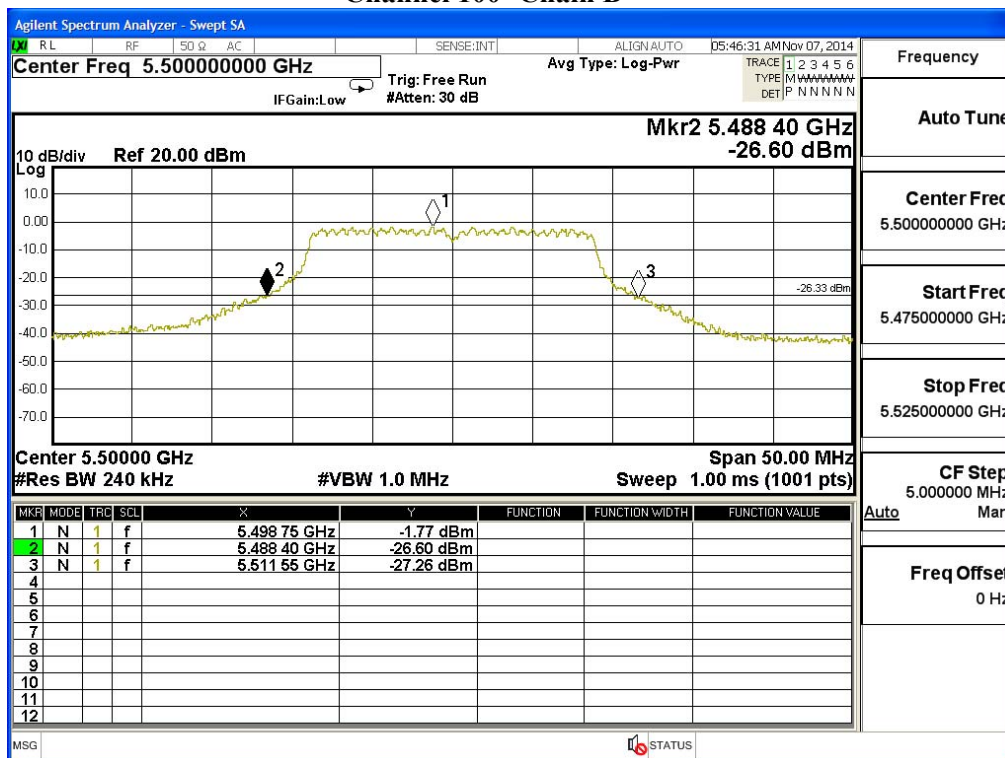
Channel 60 -Chain B



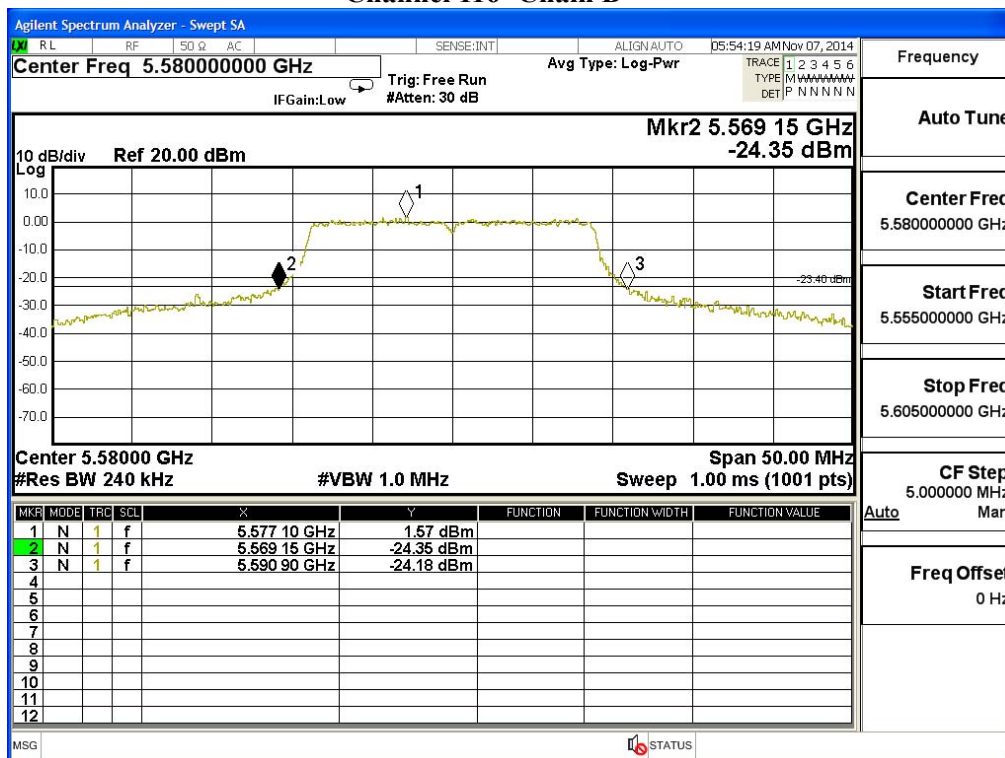
Channel 64 -Chain B



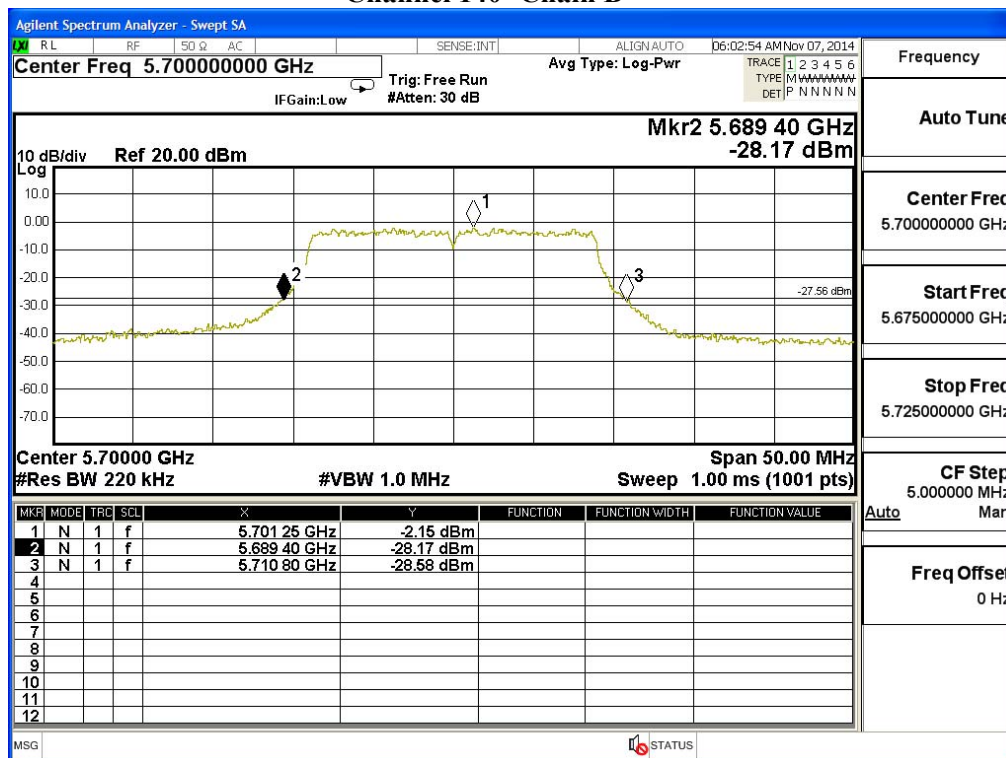
Channel 100 -Chain B



Channel 116 -Chain B



Channel 140 -Chain B



Product : FIELDBOOK
 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
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	7.54	--	--	--	--	--	--	--	<17dBm
46	5230	12.36	12.29	12.22	12.15	12.08	12.01	11.94	11.87	<17dBm
54	5270	7.53	--	--	--	--	--	--	--	<24dBm
62	5310	8.54	8.51	8.48	8.42	8.36	8.3	8.24	8.18	<24dBm
102	5510	7.58	--	--	--	--	--	--	--	<24dBm
110	5550	13.15	13.11	13.07	13.03	12.99	12.95	12.91	12.87	<24dBm
134	5670	12.71	--	--	--	--	--	--	--	<24dBm

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
		30	60	90	120	180	240	270	300	
		Measurement Level (dBm)								
38	5190	7.53	--	--	--	--	--	--	--	<17dBm
46	5230	12.31	12.28	12.25	12.22	12.19	12.16	12.13	12.07	<17dBm
54	5270	7.54	--	--	--	--	--	--	--	<24dBm
62	5310	8.45	8.29	8.23	8.17	8.11	8.05	7.99	7.93	<24dBm
102	5510	7.31	--	--	--	--	--	--	--	<24dBm
110	5550	13.34	13.28	13.22	13.16	13.1	13.04	12.98	12.92	<24dBm
134	5670	12.52	--	--	--	--	--	--	--	<24dBm

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

Maximum conducted output power Measurement:

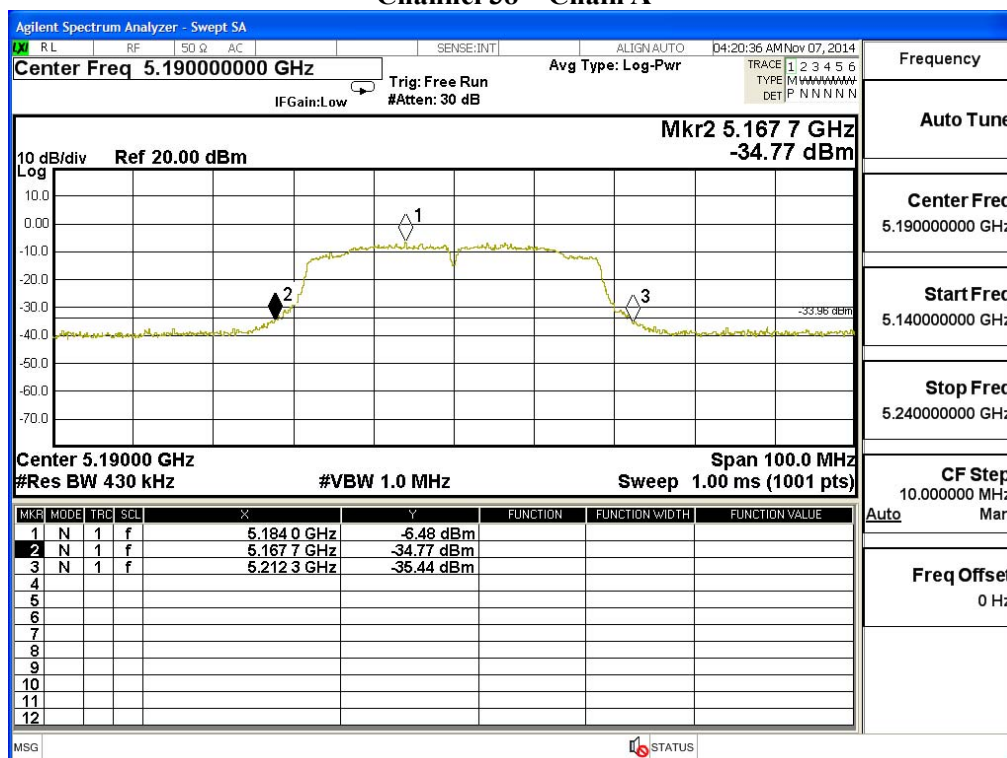
(CHAIN A+ B)

Channel Number	Frequency (MHz)	26dB Bandwidth (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Output Power (dBm)	Output Power Limit	
						(dBm)	dBm+10log(BW)
38	5190	40.300	7.54	7.53	10.55	17	20.05
46	5230	43.300	12.36	12.31	15.35	17	20.36
54	5270	40.700	7.53	7.54	10.55	24	27.10
62	5310	40.000	8.54	8.45	11.51	24	27.02
102	5510	40.200	7.58	7.31	10.46	24	27.04
110	5550	41.000	13.15	13.34	16.26	24	27.13
134	5670	47.200	12.71	12.52	15.63	24	27.74

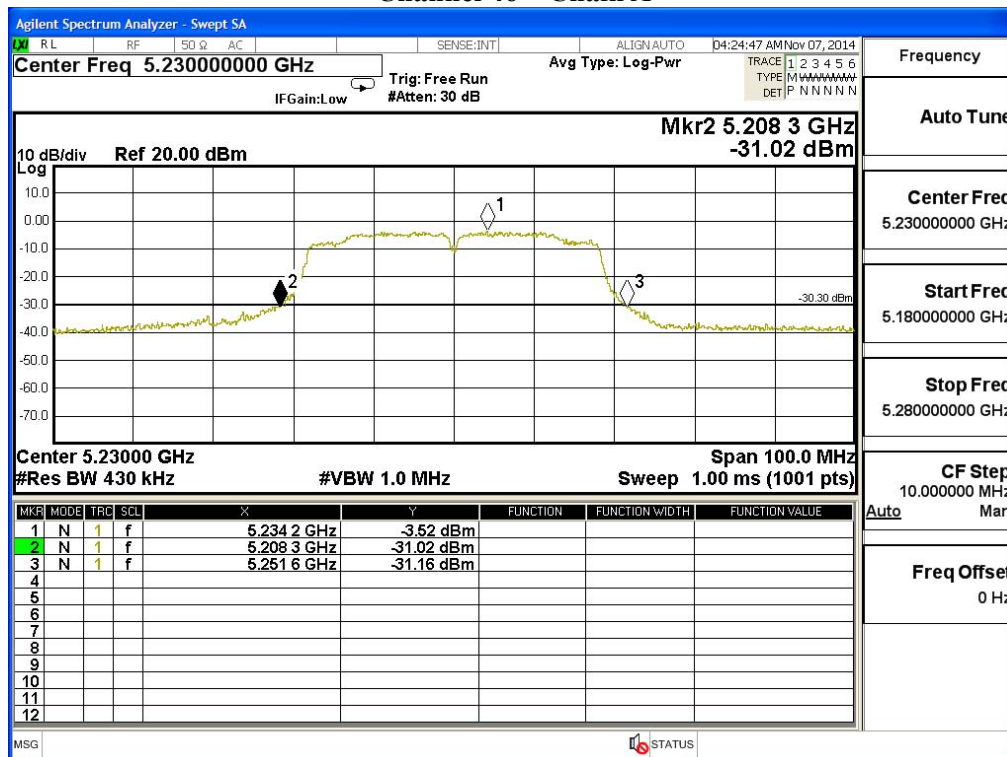
Note:

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. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

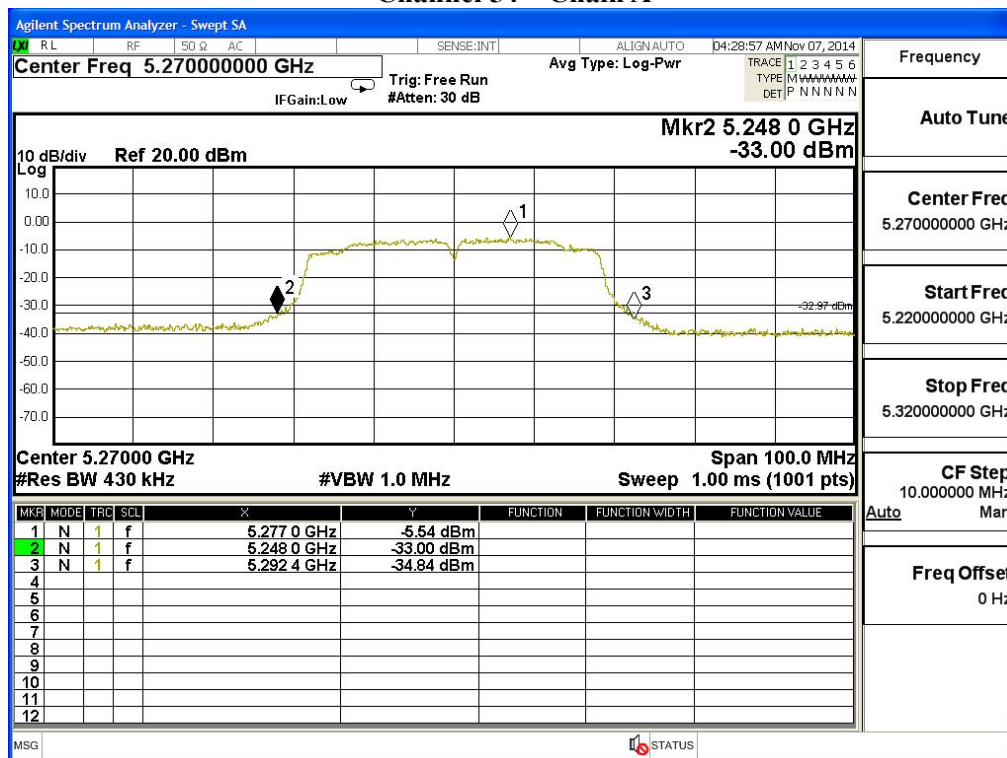
26dBc Occupied Bandwidth: Channel 38 – Chain A



Channel 46 – Chain A



Channel 54 – Chain A



Channel 62 – Chain A

