FCC Test Report

Product Name	VistaHub Wifi only
Model No	VISTAHUB-WIFI
FCC ID	RZ5-VISTAHUB-WIFI

Applicant	Onyx Healthcare Inc.
Address	2F., No.135, LANE 235,PAO CHIAO RD., XINDIAN DIST., NEW TAIPEI CITY 231, TAIWAN (R.O.C.)

Date of Receipt	Aug. 08, 2017
Issued Date	Dec. 07, 2017
Report No.	1790230R-RFUSP51V00
Report Version	V1.0

Testing Laboratory
3023

Test Report

Issued Date: Dec. 07, 2017
Report No.: 1790230R-RFUSP51V00

Product Name	VistaHub Wifi only
Applicant	Onyx Healthcare Inc.
Address	2F., No.135, LANE 235,PAO CHIAO RD., XINDIAN DIST., NEW TAIPEI CITY 231, TAIWAN (R.O.C.)
Manufacturer	VitalConnect, Inc.
Model No.	VISTAHUB-WIFI
FCC ID.	RZ5-VISTAHUB-WIFI
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	VitalConnect
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2016 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v01r04
Test Result	Complied

Documented By : Genie Chang

(Senior Adm. Specialist / Genie Chang)

Tested By : Ivan Chuang

(Senior Engineer / Ivan Chuang)

Approved By :

(Director / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	VistaHub Wifi only
Trade Name	VitalConnect
FCC ID.	RZ5-VISTAHUB-WIFI
Model No.	VISTAHUB-WIFI
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310, 5510-5670MHz, 5755-5795MHz
Number of Channels	802.11a/n-20MHz: 24; 802.11n-40MHz: 11
Data Rate	Auto
Channel Control	802.11a: 6 - 54Mbps 802.11n: up to 150Mbps
Type of Modulation	OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Dipole
Antenna Gain	Refer to the table “Antenna List”
Power Adapter (1)	M/N: ATM020-W050U Input: AC 100-240V~50-60Hz 0.45-0.27A Output: DC 5V, 3.5A Cable Out: Non-shielded, 1.8m
Power Adapter (2)	M/N: ATM036T-A050 Input: AC 100-240V~50-60Hz 1A-0.45 Output: DC 5V, 5A Cable IN: Non-shielded, 1.8m Cable Out: Non-shielded, 1.5m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ARISTOTLE	RFA-25-L14M3-B32	Dipole	3.5dBi For 5GHz

Note: 1. The antenna of EUT is conforming to FCC 15.203.

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

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

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

Note:

1. This device is a VistaHub Wifi onlywith a built-in 802.11a/b/g/n WLAN and Bluetooth V4.0 transceiver, the test report is for 5GHz 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.
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report.
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.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 7.2Mbps) Mode 3: Transmit (802.11n-40BW 15Mbps)

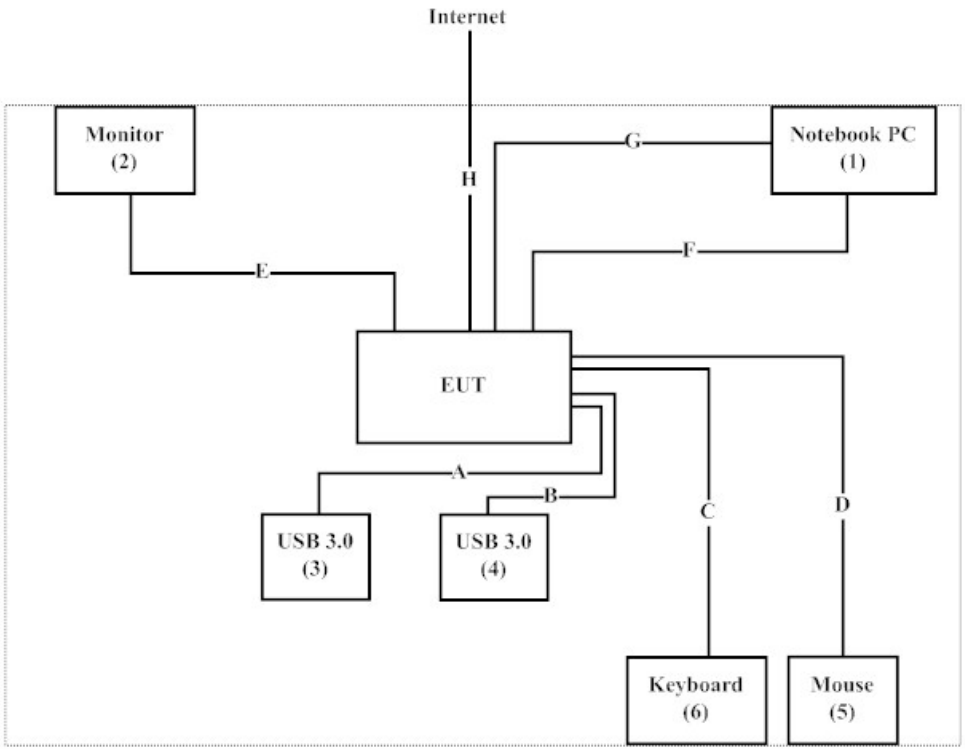
1.3. Tested System Datails

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	Notebook PC	DELL	P62G	229FJC2	N/A
2	Monitor	DELL	U2415	CN-01RMGX-74261-63H-09UL-A02	N/A
3	USB 3.0	WD	WDBUZG0010BBK-PESN	WX11A166S2Y3	N/A
4	USB 3.0	WD	WDBUZG0010BBK-PESN	WXR1AC5478U6	N/A
5	Mouse	Logitech	U0026	N/A	N/A
6	Keyboard	Logitech	K120	N/A	N/A

Signal Cable Type		Signal cable Description
A	HDD USB 3.0 Cable	Shielded, 0.47m
B	HDD USB 3.0 Cable	Shielded, 0.47m
C	USB Keyboard Cable	Shielded, 1.8m
D	USB Moue Cable	Shielded, 1.8m
E	HDM Cable	Shielded, 2.0m
F	USB Cable (Signal Cable)	Shielded, 0.78m
G	USB Cable (Signal Cable)	Shielded, 0.78m
H	LAN Cable	Non-shielded, 3.0m

1.4. Configuration of tested System



1.5. EUT Exercise Software

1. Setup the EUT as shown in Section 1.4.
2. Execute software “RT5X7X (Ver 1.0.8.0)” on the EUT.
3. Configure the test mode, the test channel, and the data rate.
4. Press “OK” to start the continuous Transmit.
5. Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

The related certificate for our laboratories about the test site and management system can be downloaded from DEKRA Testing and Certification Co., Ltd. Web Site:
http://www.dekra.com.tw/english/about/certificates.aspx?bval=5
The address and introduction of DEKRA Testing and Certification Co., Ltd. laboratories can be founded in our Web site: http://www.dekra.com.tw/index_en

Site Description: Accredited by TAF
Accredited Number: 3023

Site Name: DEKRA Testing and Certification Co., Ltd.
Site Address: No.159, Sec. 2, Wenhua 1st Rd., Linkou Dist.,
New Taipei City 24457, Taiwan.
TEL: 886-2-2602-7968 / FAX : 866-2-2602-3286
E-Mail : info.tw@dekra.com

FCC Accreditation Number: TW3023

1.7. List of Test Equipment

For Conduction measurements /ASR1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	EMI Test Receiver	R&S	ESR7	101601	2017.01.06	2018.01.05
X	Two-Line V-Network	R&S	ENV216	101306	2017.02.16	2018.02.15
X	Two-Line V-Network	R&S	ENV216	101307	2017.03.17	2018.03.16
X	Coaxial Cable	Quietek	RG400_BNC	RF001	2017.05.24	2018.05.23

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : QuieTek EMI 2.0 V2.1.113

For Conducted measurements /ASR4

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Spectrum Analyzer	R&S	FSV30	103464	2017.01.09	2018.01.08
X	Power Meter	Anritsu	ML2496A	1548003	2016.12.15	2017.12.14
X	Power Sensor	Anritsu	MA2411B	1531024	2016.12.15	2017.12.14
X	Power Sensor	Anritsu	MA2411B	1531025	2016.12.15	2017.12.14
	Bluetooth Tester	R&S	CBT	101238	2017.01.03	2018.01.02

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : QuieTek Conduction Test System V8.0.110

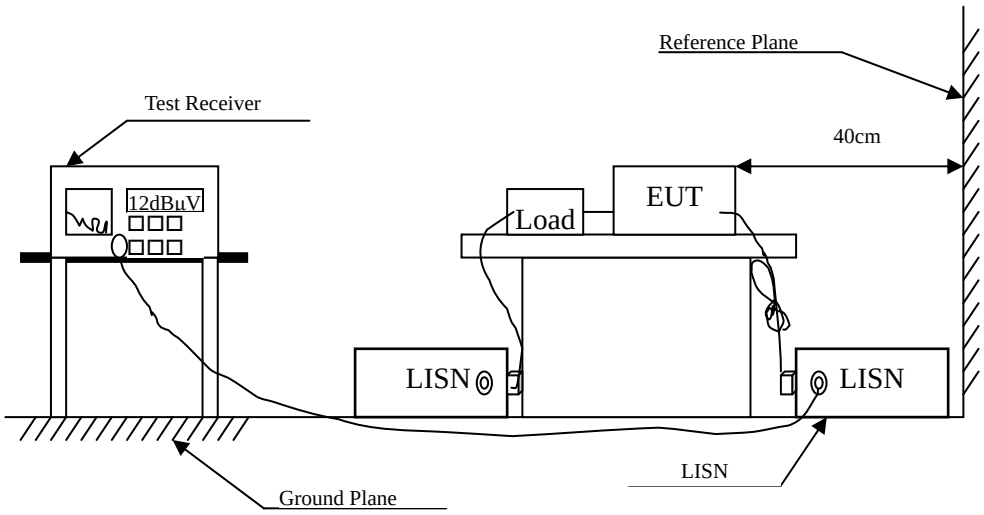
For Radiated measurements /ACB1

	Equipment	Manufacturer	Model No.	Serial No.	Cali. Data	Due. Data
X	Loop Antenna	TESEQ	HLA6121	37133	2016.03.18	2018.03.17
X	Bi-Log Antenna	SCHWARZBECK	VULB9168	9168-674	2017.02.13	2018.02.12
X	Horn Antenna	ETS-Lindgren	3117	00203800	2017.11.10	2018.11.09
X	Horn Antenna	Com-Power	AH-840	101087	2017.05.24	2018.05.23
X	Pre-Amplifier	EMCI	EMC001330	980316	2017.05.16	2018.05.15
X	Pre-Amplifier	EMCI	EMC051835SE	980311	2017.05.17	2018.05.16
X	Pre-Amplifier	EMCI	EMC05820SE	980310	2017.05.17	2018.05.16
X	Pre-Amplifier	EMCI	EMC184045SE	980314	2017.05.17	2018.05.16
	Filter	MICRO TRONICS	BRM50702	G251	2017.08.30	2018.08.29
X	Filter	MICRO TRONICS	BRM50716	G188	2017.08.30	2018.08.29
X	EMI Test Receiver	R&S	ESR7	101602	2016.12.15	2017.12.14
X	Spectrum Analyzer	R&S	FSV40	101148	2017.01.24	2018.01.23
X	Coaxial Cable	SUHNER	SUCOFLEX 106	RF002	2017.05.25	2018.05.24
X	Mircoflex Cable	HUBER SUHNER	SUCOFLEX 102	MY3381/2	2017.08.11	2018.08.10

Note:
1. All equipments are calibrated every one year.
2. The test instruments marked with “X” are used to measure the final test results.
3. Test Software version : QuieTek EMI 2.0 V2.1.113

2. Conducted Emission

2.1. Test Setup



2.2. 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.

2.3. 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 C63.4:2014 on conducted measurement.

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

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

2.4. Uncertainty

±2.35dB

2.5. Test Result of Conducted Emission

Product : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.157	10.183	36.880	47.062	-18.738	65.800
0.249	9.958	27.641	37.599	-25.572	63.171
0.614	9.978	32.537	42.515	-13.485	56.000
2.333	9.882	25.173	35.055	-20.945	56.000
4.875	9.873	16.256	26.129	-29.871	56.000
14.552	10.056	20.271	30.327	-29.673	60.000
Average					
0.157	10.183	24.252	34.434	-21.366	55.800
0.249	9.958	19.797	29.755	-23.416	53.171
0.614	9.978	25.251	35.229	-10.771	46.000
2.333	9.882	19.689	29.571	-16.429	46.000
4.875	9.873	6.919	16.792	-29.208	46.000
14.552	10.056	12.094	22.151	-27.849	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.161	9.937	34.289	44.226	-21.460	65.686
0.330	9.962	16.626	26.588	-34.269	60.857
0.616	9.970	33.324	43.294	-12.706	56.000
2.321	9.882	25.764	35.646	-20.354	56.000
5.197	9.873	15.724	25.598	-34.402	60.000
14.458	10.055	19.568	29.623	-30.377	60.000
Average					
0.161	9.937	20.965	30.902	-24.784	55.686
0.330	9.962	11.693	21.654	-29.203	50.857
0.616	9.970	25.572	35.542	-10.458	46.000
2.321	9.882	19.711	29.593	-16.407	46.000
5.197	9.873	6.633	16.506	-33.494	50.000
14.458	10.055	12.323	22.378	-27.622	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.150	10.987	37.508	48.495	-17.505	66.000
0.328	9.971	17.115	27.086	-33.828	60.914
0.616	9.978	33.343	43.320	-12.680	56.000
2.292	9.891	27.176	37.067	-18.933	56.000
5.032	9.870	16.874	26.744	-33.256	60.000
14.399	10.055	19.051	29.106	-30.894	60.000
Average					
0.150	10.987	25.260	36.247	-19.753	56.000
0.328	9.971	3.945	13.916	-36.998	50.914
0.616	9.978	26.124	36.102	-9.898	46.000
2.292	9.891	19.560	29.451	-16.549	46.000
5.032	9.870	8.499	18.369	-31.631	50.000
14.399	10.055	13.264	23.319	-26.681	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.152	10.709	37.475	48.184	-17.759	65.943
0.294	9.956	20.308	30.263	-31.623	61.886
0.611	9.971	32.189	42.160	-13.840	56.000
2.292	9.891	26.453	36.344	-19.656	56.000
5.291	9.876	15.800	25.676	-34.324	60.000
14.773	10.058	18.674	28.732	-31.268	60.000
Average					
0.152	10.709	25.906	36.614	-19.329	55.943
0.294	9.956	6.980	16.936	-34.950	51.886
0.611	9.971	25.724	35.695	-10.305	46.000
2.292	9.891	19.811	29.702	-16.298	46.000
5.291	9.876	8.152	18.028	-31.972	50.000
14.773	10.058	11.951	22.009	-27.991	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.157	10.183	37.227	47.409	-18.391	65.800
0.244	9.957	27.830	37.788	-25.526	63.314
0.616	9.978	32.887	42.865	-13.135	56.000
2.292	9.891	26.977	36.868	-19.132	56.000
4.922	9.872	16.557	26.429	-29.571	56.000
14.660	10.057	18.936	28.993	-31.007	60.000
Average					
0.157	10.183	24.032	34.215	-21.585	55.800
0.244	9.957	12.768	22.725	-30.589	53.314
0.616	9.978	25.247	35.225	-10.775	46.000
2.292	9.891	20.052	29.943	-16.057	46.000
4.922	9.872	8.338	18.210	-27.790	46.000
14.660	10.057	11.801	21.858	-28.142	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.152	10.709	38.229	48.938	-17.005	65.943
0.305	9.957	17.775	27.732	-33.839	61.571
0.618	9.969	32.465	42.435	-13.565	56.000
2.341	9.885	25.130	35.014	-20.986	56.000
7.703	9.926	12.578	22.504	-37.496	60.000
14.527	10.056	20.974	31.029	-28.971	60.000
Average					
0.152	10.709	24.585	35.294	-20.649	55.943
0.305	9.957	5.821	15.778	-35.793	51.571
0.618	9.969	25.032	35.002	-10.998	46.000
2.341	9.885	20.241	30.126	-15.874	46.000
7.703	9.926	6.806	16.732	-33.268	50.000
14.527	10.056	13.523	23.578	-26.422	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.150	10.987	37.567	48.554	-17.446	66.000
0.238	9.956	28.702	38.659	-24.827	63.486
0.616	9.978	32.774	42.752	-13.248	56.000
2.339	9.884	25.130	35.015	-20.985	56.000
7.699	9.932	12.481	22.413	-37.587	60.000
14.665	10.057	19.760	29.817	-30.183	60.000
Average					
0.150	10.987	24.129	35.116	-20.884	56.000
0.238	9.956	19.680	29.636	-23.850	53.486
0.616	9.978	24.750	34.728	-11.272	46.000
2.339	9.884	20.122	30.006	-15.994	46.000
7.699	9.932	6.491	16.422	-33.578	50.000
14.665	10.057	11.996	22.054	-27.946	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.152	10.709	37.769	48.477	-17.466	65.943
0.323	9.960	16.650	26.610	-34.447	61.057
0.616	9.970	32.854	42.824	-13.176	56.000
2.265	9.892	25.551	35.442	-20.558	56.000
7.926	9.928	12.155	22.083	-37.917	60.000
14.658	10.057	19.333	29.390	-30.610	60.000
Average					
0.152	10.709	27.809	38.518	-17.425	55.943
0.323	9.960	8.209	18.170	-32.887	51.057
0.616	9.970	25.776	35.746	-10.254	46.000
2.265	9.892	19.527	29.418	-16.582	46.000
7.926	9.928	6.672	16.600	-33.400	50.000
14.658	10.057	13.119	23.176	-26.824	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.410	9.985	32.333	42.318	-16.253	58.571
0.720	9.948	25.192	35.140	-20.860	56.000
0.940	9.896	21.930	31.826	-24.174	56.000
2.300	9.890	34.136	44.026	-11.974	56.000
2.712	9.883	30.679	40.561	-15.439	56.000
12.620	10.021	19.167	29.188	-30.812	60.000
Average					
0.410	9.985	24.983	34.968	-13.603	48.571
0.720	9.948	18.812	28.760	-17.240	46.000
0.940	9.896	15.298	25.194	-20.806	46.000
2.300	9.890	28.160	38.049	-7.951	46.000
2.712	9.883	24.942	34.824	-11.176	46.000
12.620	10.021	13.252	23.273	-26.727	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.155	10.417	35.720	46.137	-19.720	65.857
0.173	9.985	33.276	43.261	-22.082	65.343
0.272	9.952	26.594	36.546	-25.968	62.514
0.400	9.973	34.636	44.609	-14.248	58.857
2.300	9.890	32.778	42.667	-13.333	56.000
12.420	10.014	19.621	29.635	-30.365	60.000
Average					
0.155	10.417	21.012	31.429	-24.428	55.857
0.173	9.985	18.482	28.466	-26.877	55.343
0.272	9.952	17.019	26.971	-25.543	52.514
0.400	9.973	27.717	37.691	-11.166	48.857
2.300	9.890	26.511	36.401	-9.599	46.000
12.420	10.014	14.030	24.044	-25.956	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	:	VistaHub Wifi only
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
		_ Adapter: ATM036T-A050
Test Date	:	2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.165	9.962	34.036	43.998	-21.573	65.571
0.270	9.962	24.658	34.619	-27.952	62.571
0.286	9.964	24.760	34.724	-27.390	62.114
0.389	9.981	33.852	43.833	-15.338	59.171
2.300	9.890	31.909	41.799	-14.201	56.000
2.700	9.887	28.009	37.895	-18.105	56.000
Average					
0.165	9.962	19.704	29.666	-25.905	55.571
0.270	9.962	18.356	28.318	-24.253	52.571
0.286	9.964	17.153	27.117	-24.997	52.114
0.389	9.981	26.941	36.922	-12.249	49.171
2.300	9.890	25.470	35.360	-10.640	46.000
2.700	9.887	22.319	32.206	-13.794	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.150	10.977	36.302	47.279	-18.721	66.000
0.170	9.971	33.952	43.924	-21.505	65.429
0.290	9.955	25.322	35.277	-26.723	62.000
0.390	9.972	35.569	45.541	-13.602	59.143
0.410	9.975	32.636	42.611	-15.960	58.571
2.300	9.890	32.207	42.097	-13.903	56.000
Average					
0.150	10.977	20.616	31.593	-24.407	56.000
0.170	9.971	19.774	29.746	-25.683	55.429
0.290	9.955	16.788	26.743	-25.257	52.000
0.390	9.972	28.252	38.224	-10.919	49.143
0.410	9.975	24.586	34.561	-14.010	48.571
2.300	9.890	25.271	35.161	-10.839	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.154	10.451	35.800	46.251	-19.635	65.886
0.380	9.980	32.926	42.906	-16.523	59.429
0.400	9.983	33.883	43.866	-14.991	58.857
2.379	9.889	30.460	40.349	-15.651	56.000
2.700	9.887	28.182	38.069	-17.931	56.000
9.000	9.952	25.579	35.531	-24.469	60.000
Average					
0.154	10.451	20.390	30.840	-25.046	55.886
0.380	9.980	25.176	35.156	-14.273	49.429
0.400	9.983	27.958	37.942	-10.915	48.857
2.379	9.889	25.148	35.037	-10.963	46.000
2.700	9.887	22.335	32.222	-13.778	46.000
9.000	9.952	16.466	26.418	-23.582	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.157	10.173	33.420	43.593	-22.207	65.800
0.394	9.972	34.481	44.453	-14.576	59.029
2.300	9.890	32.256	42.146	-13.854	56.000
2.652	9.883	28.571	38.453	-17.547	56.000
9.042	9.944	24.901	34.845	-25.155	60.000
12.000	10.010	19.455	29.465	-30.535	60.000
Average					
0.157	10.173	21.420	31.593	-24.207	55.800
0.394	9.972	29.122	39.094	-9.935	49.029
2.300	9.890	26.061	35.950	-10.050	46.000
2.652	9.883	22.700	32.582	-13.418	46.000
9.042	9.944	17.578	27.522	-22.478	50.000
12.000	10.010	13.960	23.970	-26.030	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	:	VistaHub Wifi only
Test Item	:	Conducted Emission Test
Power Line	:	Line 1
Test Mode	:	Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
		_ Adapter: ATM036T-A050
Test Date	:	2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 1					
Quasi-Peak					
0.161	9.947	35.072	45.019	-20.667	65.686
0.280	9.963	25.502	35.465	-26.821	62.286
0.340	9.973	22.973	32.947	-27.624	60.571
0.390	9.982	34.340	44.322	-14.821	59.143
2.302	9.888	31.802	41.691	-14.309	56.000
2.700	9.887	28.609	38.496	-17.504	56.000
Average					
0.161	9.947	19.749	29.696	-25.990	55.686
0.280	9.963	16.992	26.955	-25.331	52.286
0.340	9.973	13.399	23.372	-27.199	50.571
0.390	9.982	28.285	38.267	-10.876	49.143
2.302	9.888	26.025	35.914	-10.086	46.000
2.700	9.887	22.759	32.646	-13.354	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 : VistaHub Wifi only
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/27

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV	dB	dBµV
LINE 2					
Quasi-Peak					
0.170	9.973	33.751	43.723	-21.706	65.429
0.294	9.956	24.969	34.924	-26.962	61.886
0.320	9.960	23.618	33.577	-27.566	61.143
0.390	9.972	34.349	44.321	-14.822	59.143
2.400	9.888	29.894	39.782	-16.218	56.000
13.310	10.033	19.615	29.648	-30.352	60.000
Average					
0.170	9.973	18.850	28.822	-26.607	55.429
0.294	9.956	17.944	27.900	-23.986	51.886
0.320	9.960	13.145	23.105	-28.038	51.143
0.390	9.972	27.432	37.404	-11.739	49.143
2.400	9.888	24.202	34.090	-11.910	46.000
13.310	10.033	13.366	23.399	-26.601	50.000

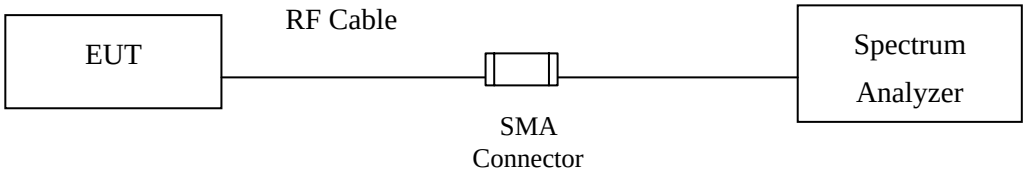
Note:

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

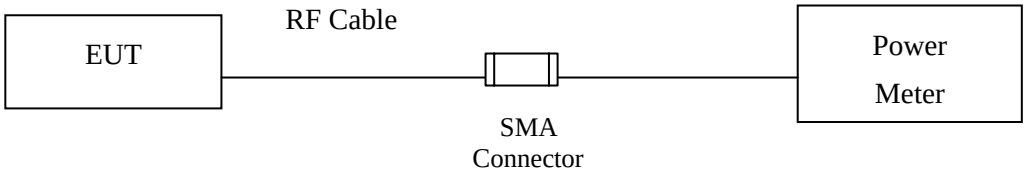
3.1. Test Setup

99% Occupied Bandwidth

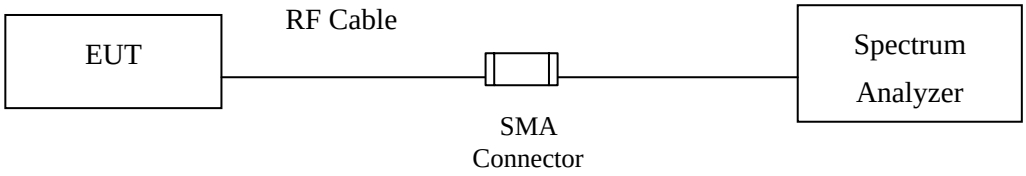


Conduction Power Measurement

Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



3.2. Limits

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-topoint 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.

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 dBm 10 log B, where B is the 99% 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.

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.

3.3. 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≦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 D03 section D) procedure is used for measurements.

3.4. Uncertainty

Power Meter: ±0.95dB
Spectrum Analyzer: ±1.30dB

3.5. Test Result of Maximum conducted output power

Product : VistaHub Wifi only
Test Item : Maximum conducted output power
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2017/11/24

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		6	9	12	18	24	36	48	54
		Measurement Level (dBm)							
36	5180	17.53	--	--	--	--	--	--	--
44	5220	20.06	20.2	19.9	19.78	19.91	19.80	19.70	19.67
48	5240	19.25							
52	5260	19.52	19.51	19.47	19.49	19.45	19.47	19.31	19.2
60	5300	18.43	--	--	--	--	--	--	--
64	5320	17.18	--	--	--	--	--	--	--
100	5500	12.83	--	--	--	--	--	--	--
116	5580	15.83	--	--	--	--	--	--	--
140	5700	15.88	15.84	15.74	15.78	15.85	15.67	15.7	15.41
149	5745	16.9	16.6	16.4	16.39	16.71	16.8	16.6	16.4
157	5785	16.41	--	--	--	--	--	--	--
165	5825	16.3	--	--	--	--	--	--	--

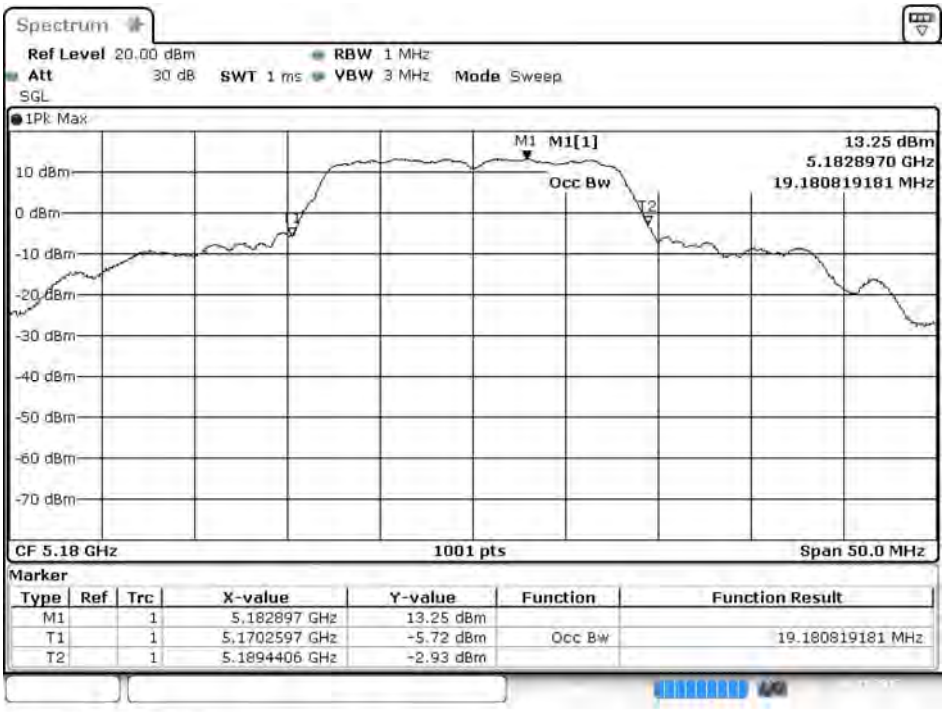
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

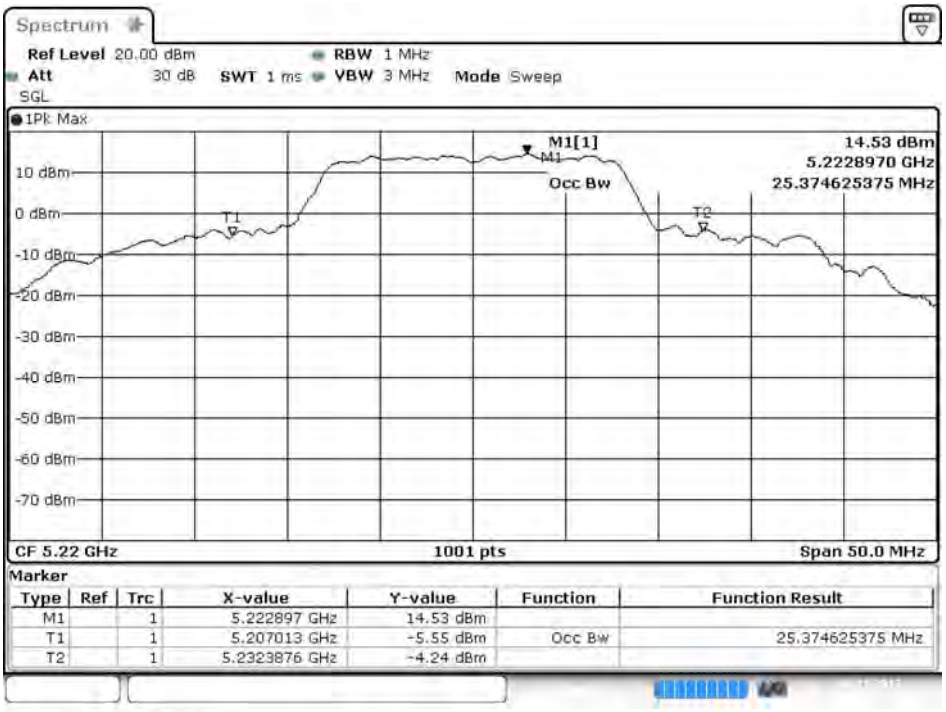
Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	19.18	17.53	24	--
44	5220	25.37	20.2	24	--
48	5240	20.37	19.25	24	--
52	5260	24.87	19.52	24	24.96
60	5300	23.27	18.43	24	24.67
64	5320	21.07	17.18	24	24.24
100	5500	17.73	12.83	24	23.49
116	5580	20.62	15.83	24	24.14
140	5700	18.03	15.88	24	23.56
149	5745	20.42	16.9	30	--
157	5785	20.87	16.41	30	--
165	5825	21.82	16.3	30	--

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

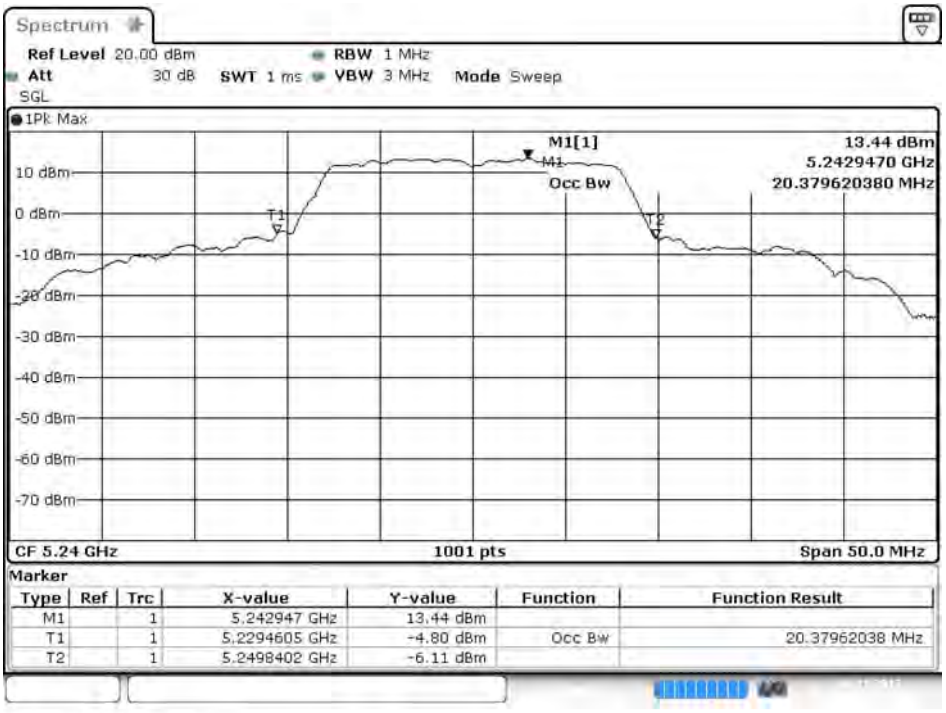
99% Occupied Bandwidth:
Channel 36:



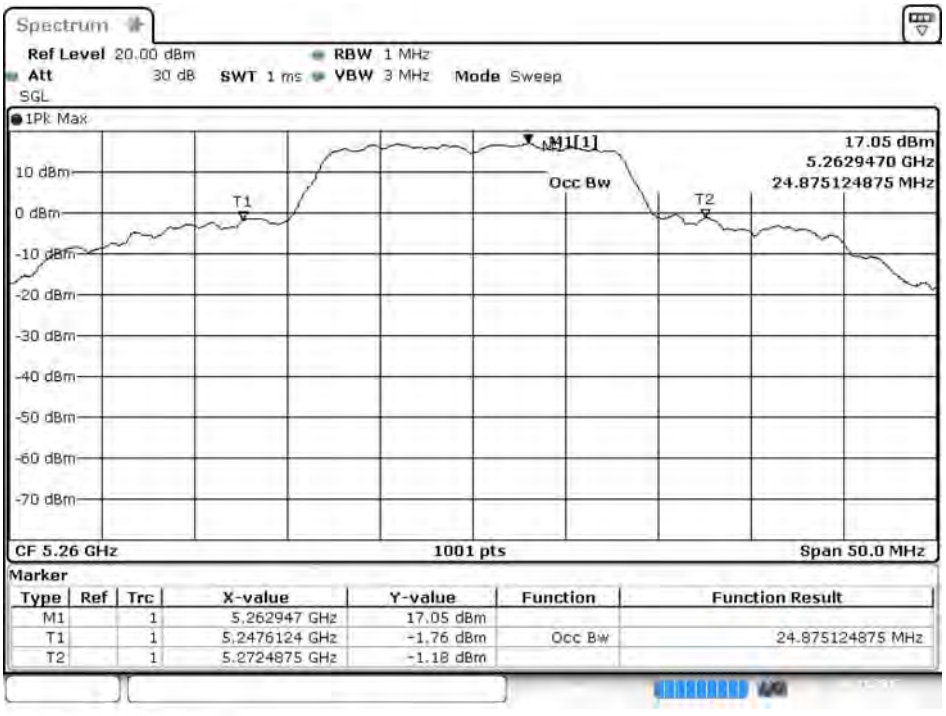
Channel 44:



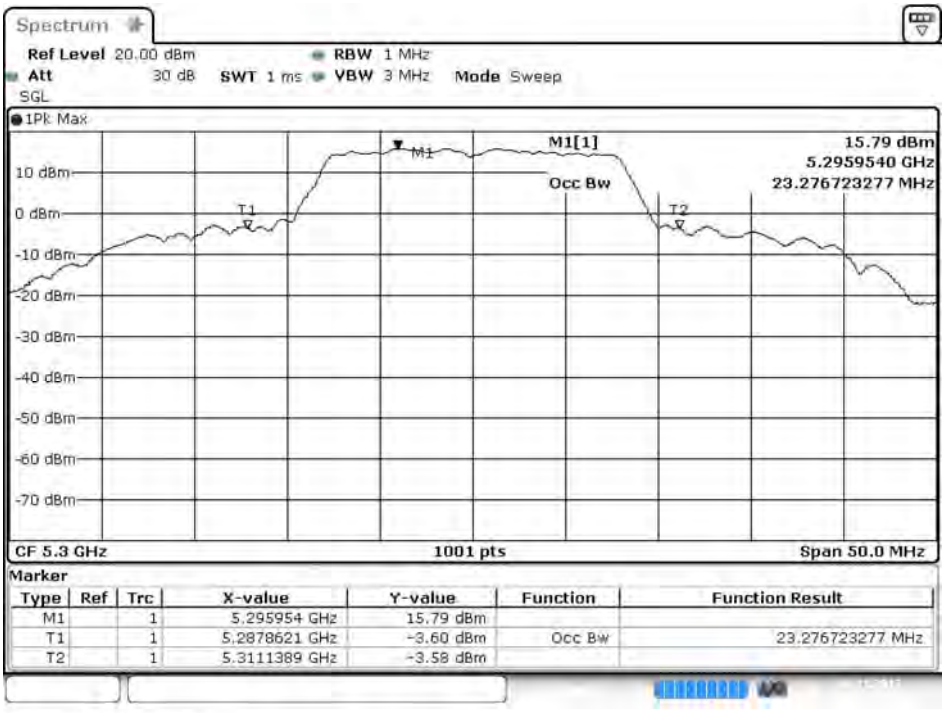
Channel 48:



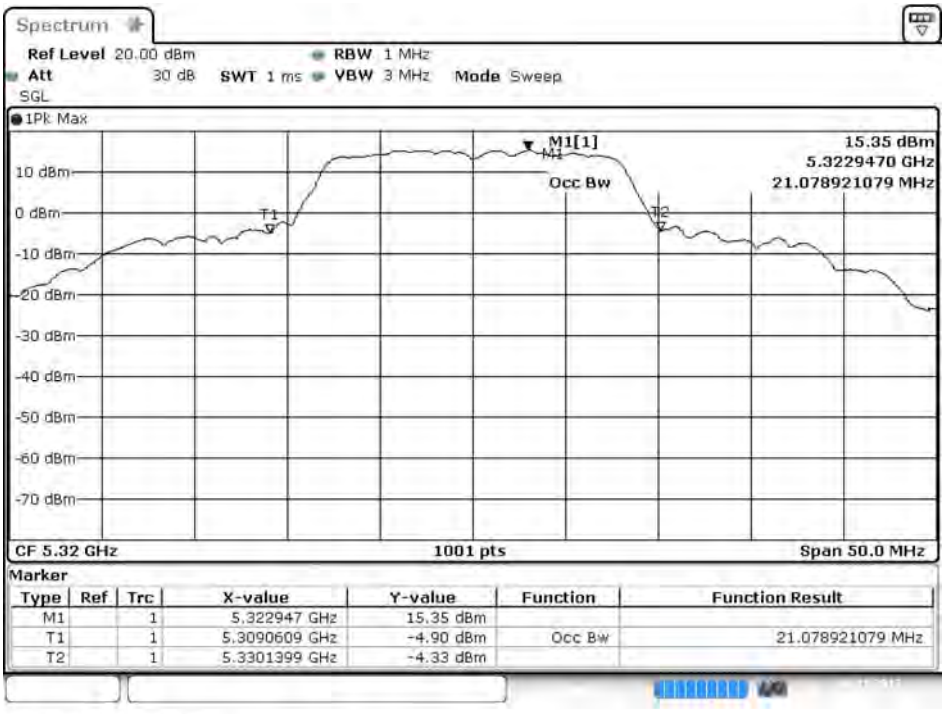
Channel 52:



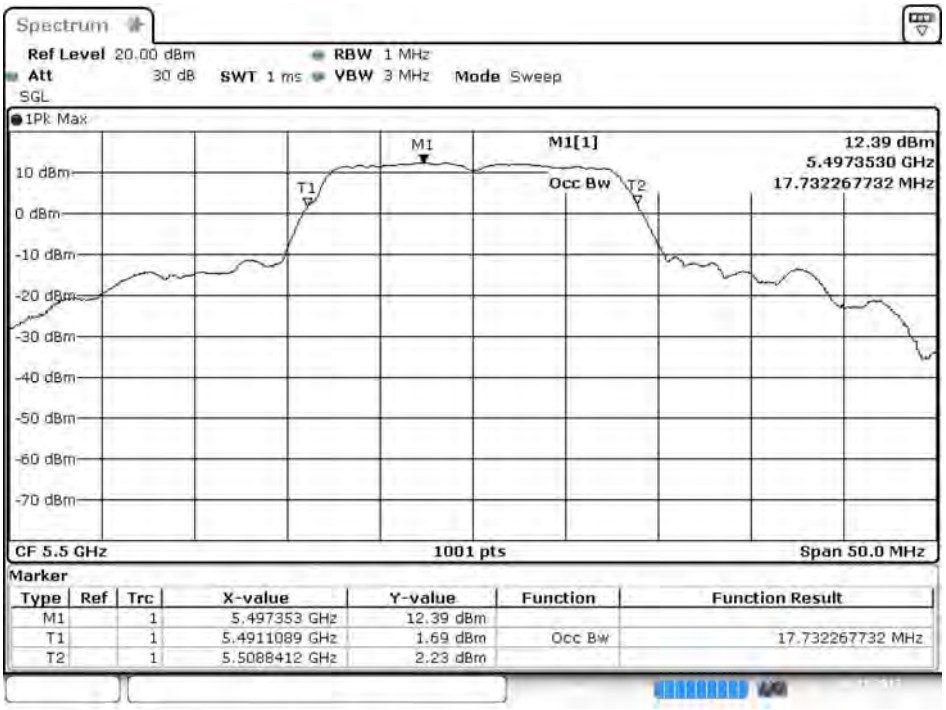
Channel 60:



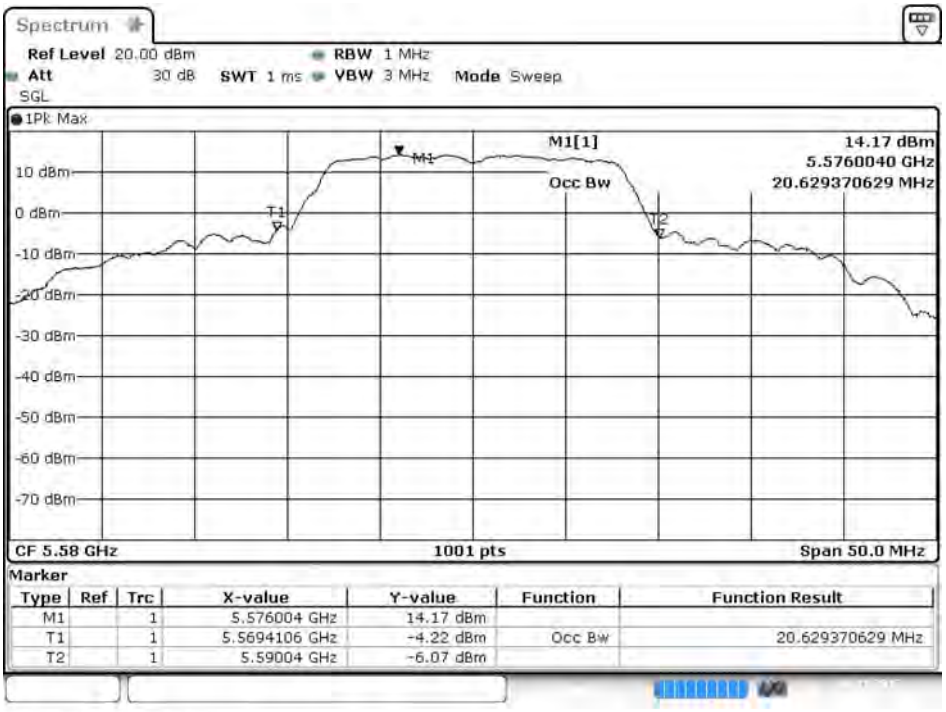
Channel 64:



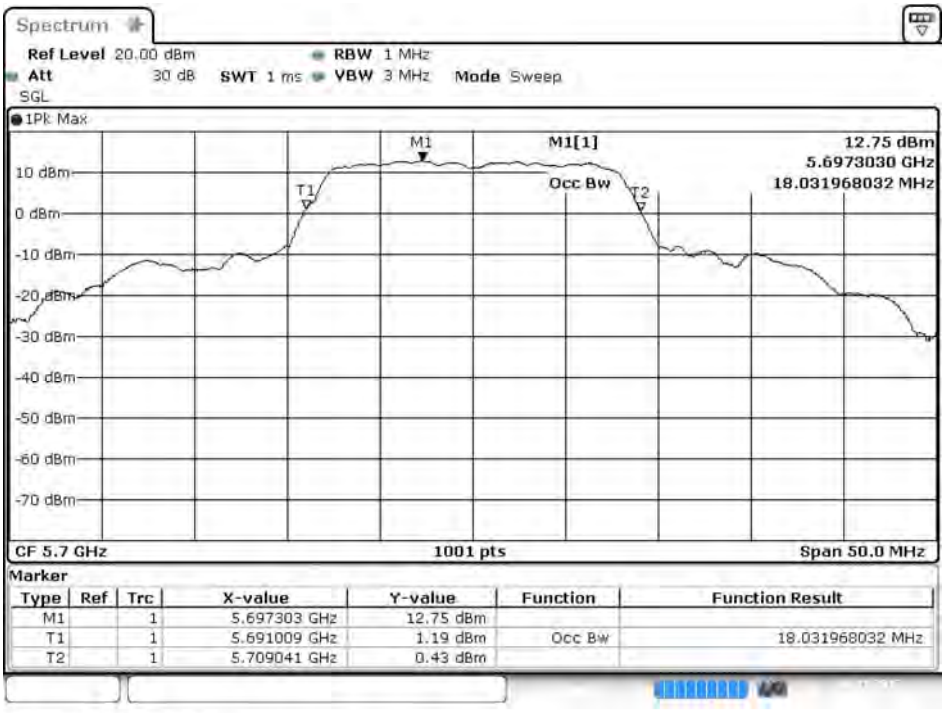
Channel 100:



Channel 116:

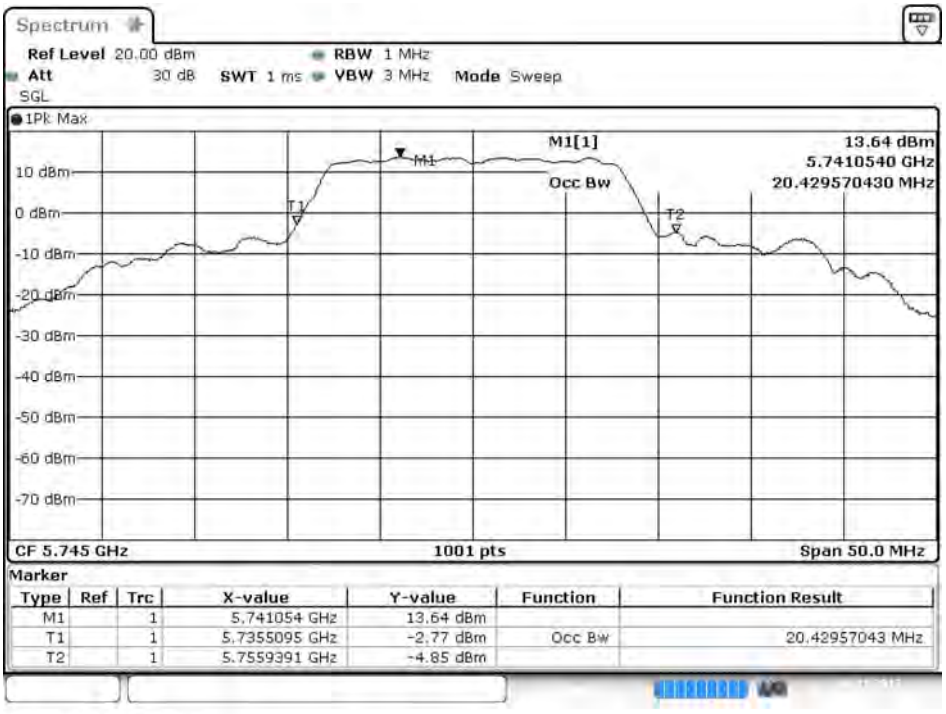


Channel 140:



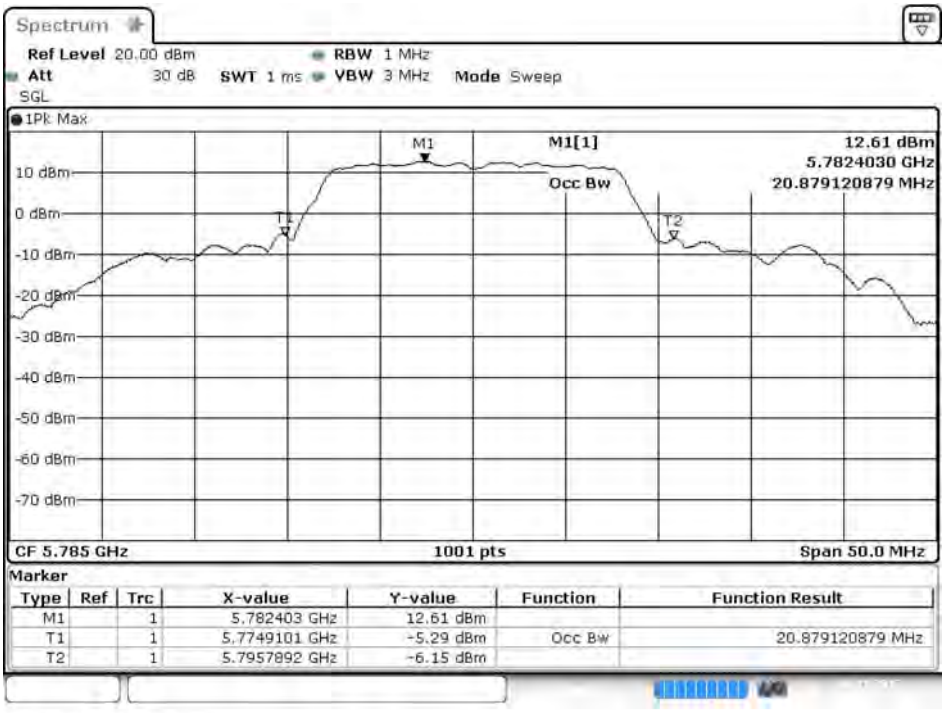
Date: 24.NOV.2017 15:56:43

Channel 149:



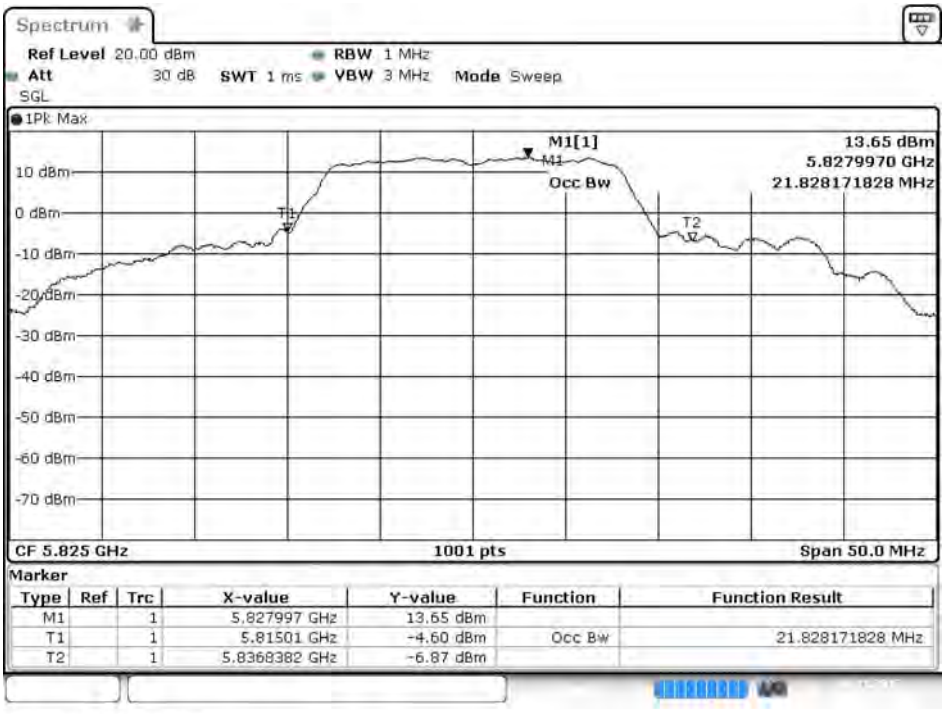
Date: 24.NOV.2017 16:36:28

Channel 157:



Date: 24.NOV.2017 16:37:46

Channel 165:



Date: 24.NOV.2017 16:40:01

Product : VistaHub Wifi only
Test Item : Maximum conducted output power
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2017/11/24

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2
		Measurement Level (dBm)							
36	5180	17.71	--	--	--	--	--	--	--
44	5220	19.73	19.7	19.69	19.70	19.50	19.40	19.51	19.30
48	5240	19.3	--	--	--	--	--	--	--
52	5260	19.67	19.5	19.4	19.61	19.4	19.53	19.42	19.31
60	5300	18.98	--	--	--	--	--	--	--
64	5320	17.02	--	--	--	--	--	--	--
100	5500	13.96	--	--	--	--	--	--	--
116	5580	16.95	16.91	16.81	16.71	16.81	16.65	16.70	16.50
140	5700	16.46	--	--	--	--	--	--	--
149	5745	16.96	16.94	16.81	16.8	16.59	16.4	16.5	16.72
157	5785	16.68	--	--	--	--	--	--	--
165	5825	16.16	--	--	--	--	--	--	--

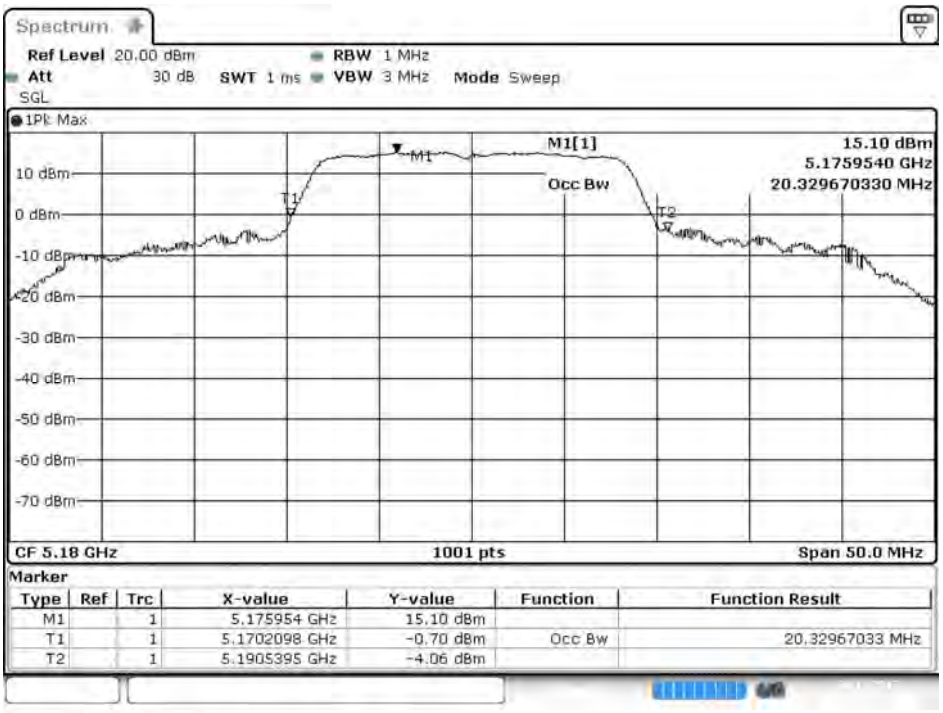
Note: Maximum conducted output power Value =Reading value on average power meter + cable loss

Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	20.32	17.71	24	--
44	5220	28.22	19.73	24	--
48	5240	25.02	19.3	24	--
52	5260	26.22	19.67	24	25.19
60	5300	23.87	18.98	24	24.78
64	5320	18.53	17.02	24	23.68
100	5500	18.18	13.96	24	23.60
116	5580	22.67	16.95	24	24.55
140	5700	18.38	16.46	24	23.64
149	5745	24.82	16.96	30	--
157	5785	24.12	16.68	30	--
165	5825	22.77	16.16	30	--

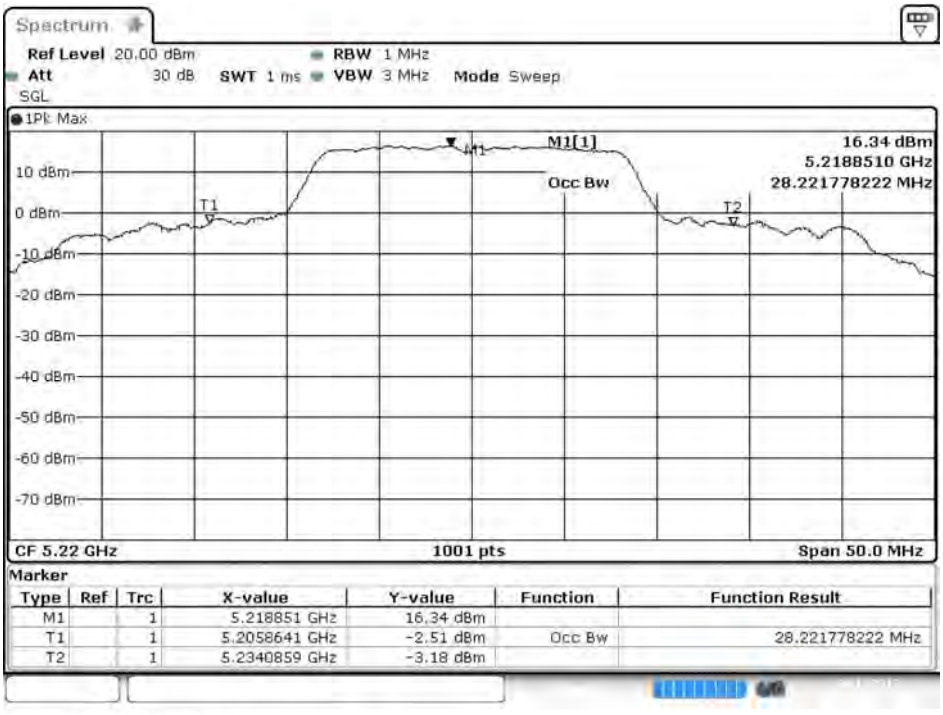
Note: Power Output Value =Reading value on average power meter + cable loss

99% Occupied Bandwidth:
Channel 36:



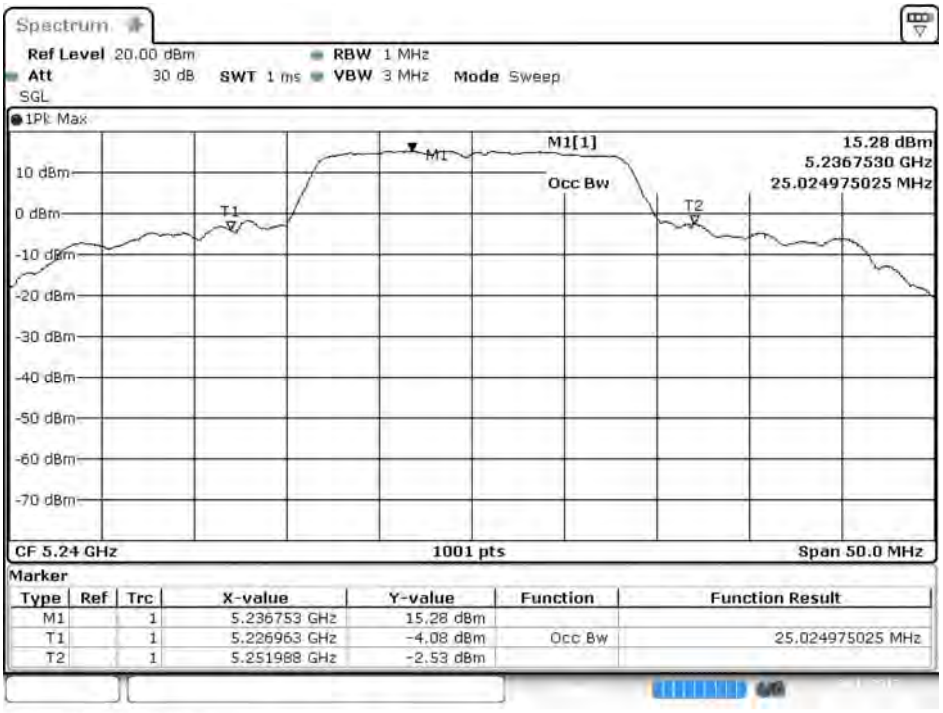
Date: 24.NOV.2017 15:58:45

Channel 44:



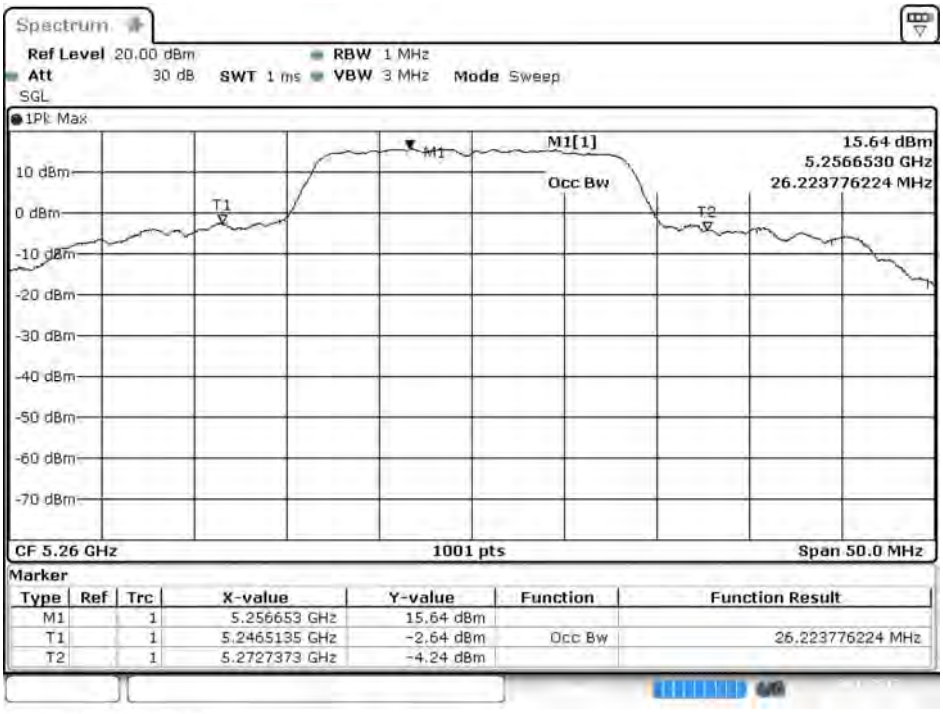
Date: 24.NOV.2017 16:00:35

Channel 48:



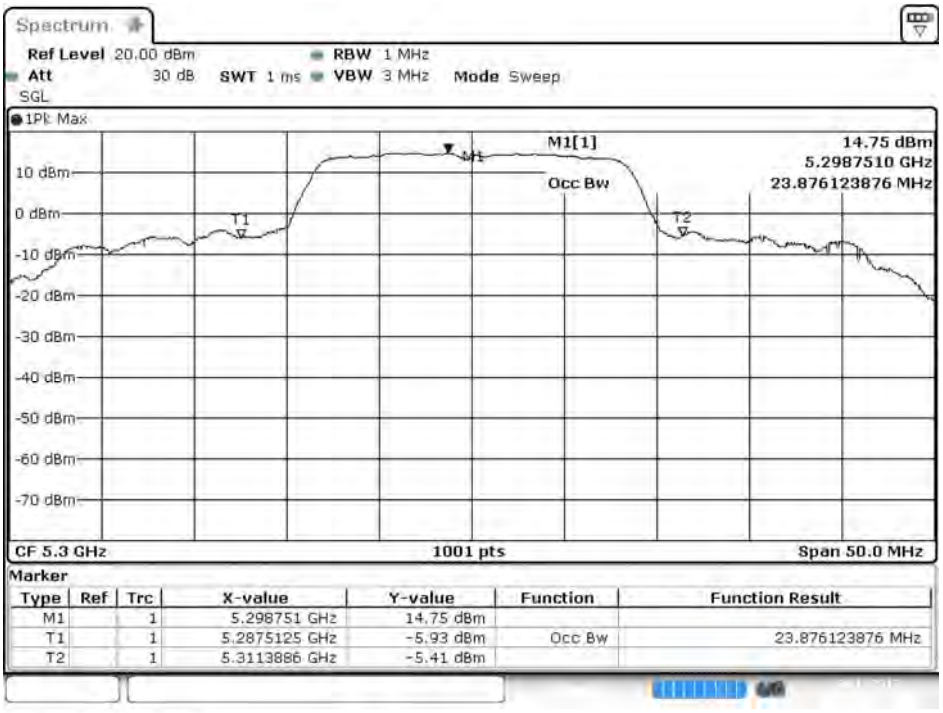
Date: 24.NOV.2017 16:03:09

Channel 52:

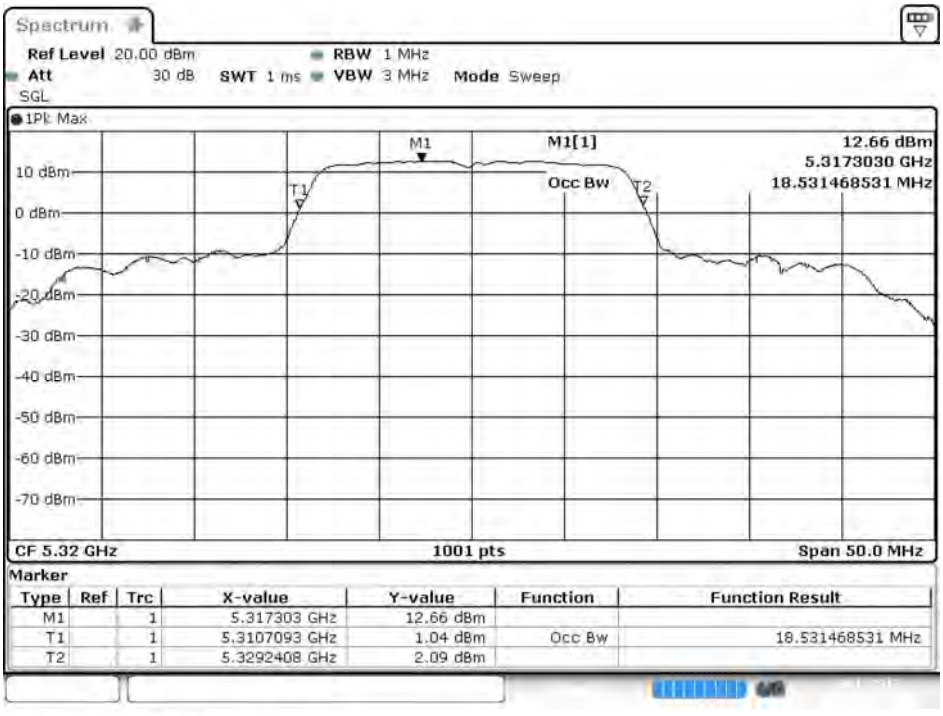


Date: 24.NOV.2017 16:08:01

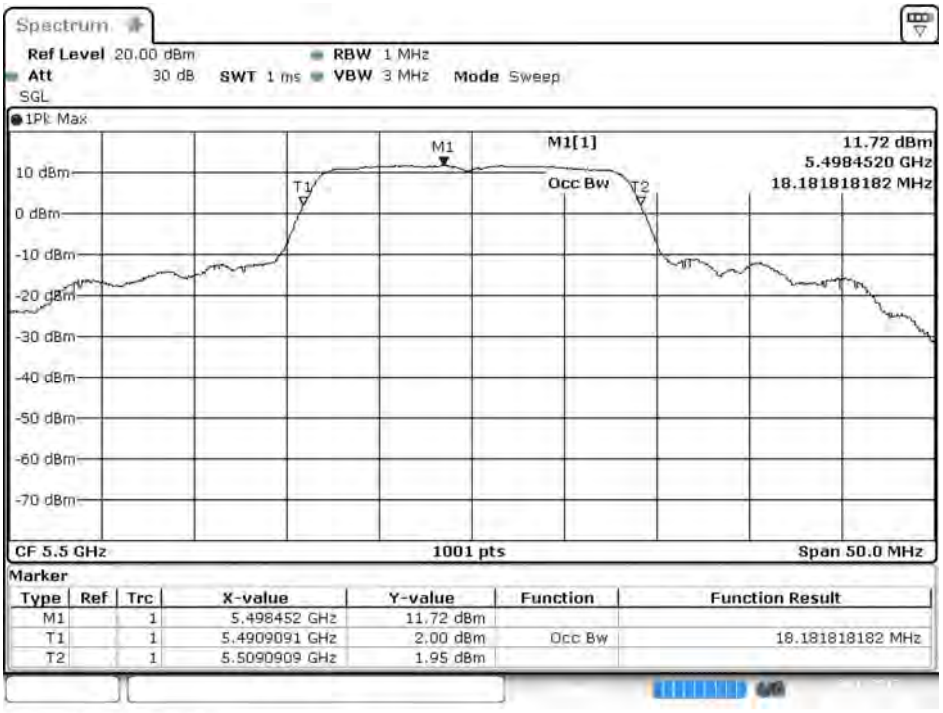
Channel 60:



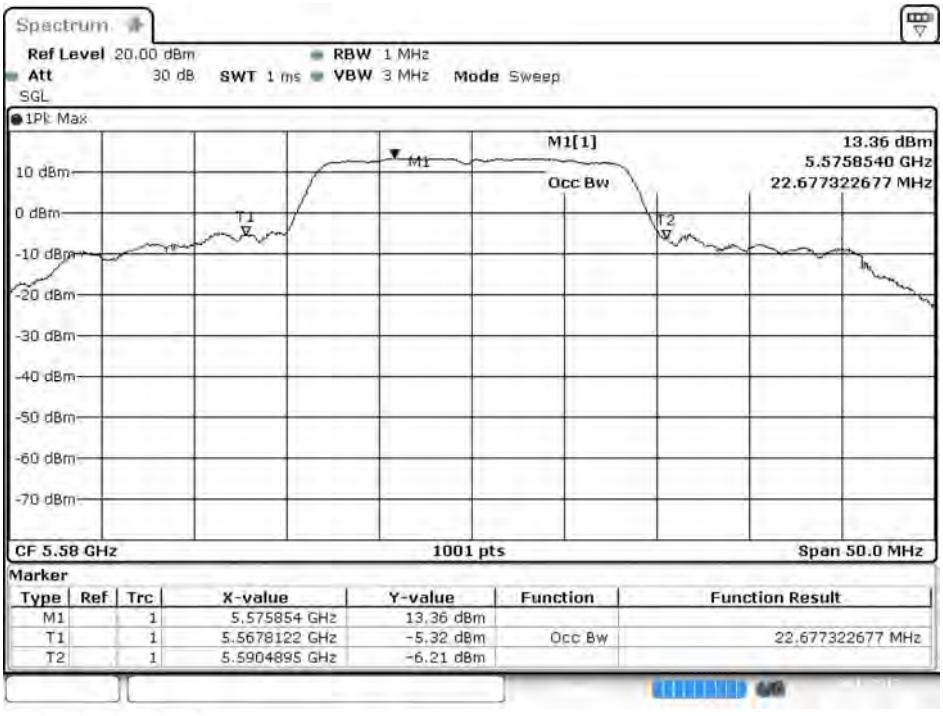
Channel 64:



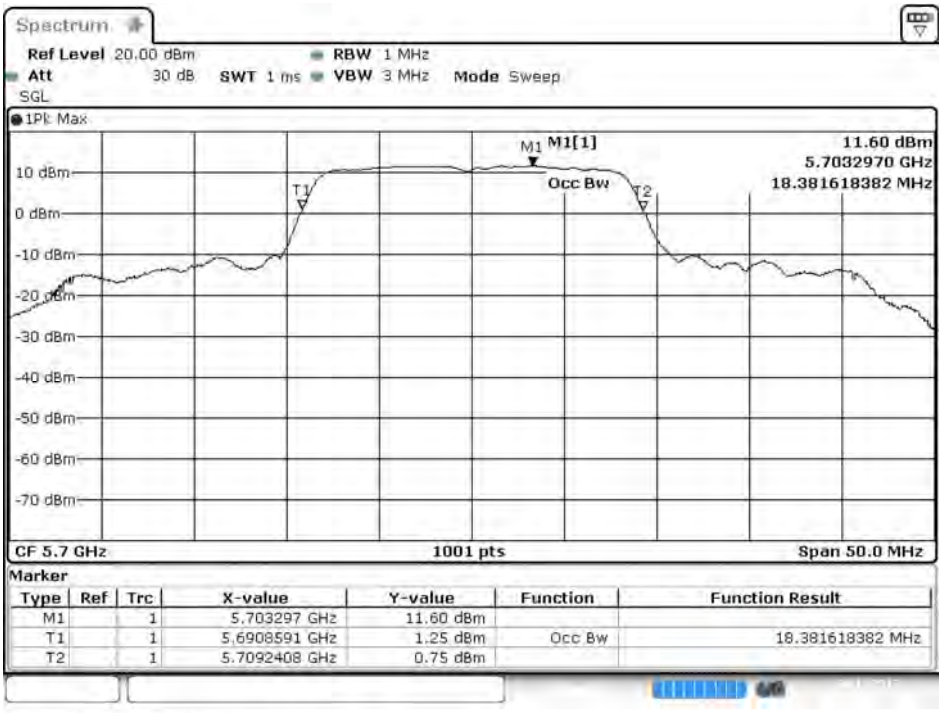
Channel 100:



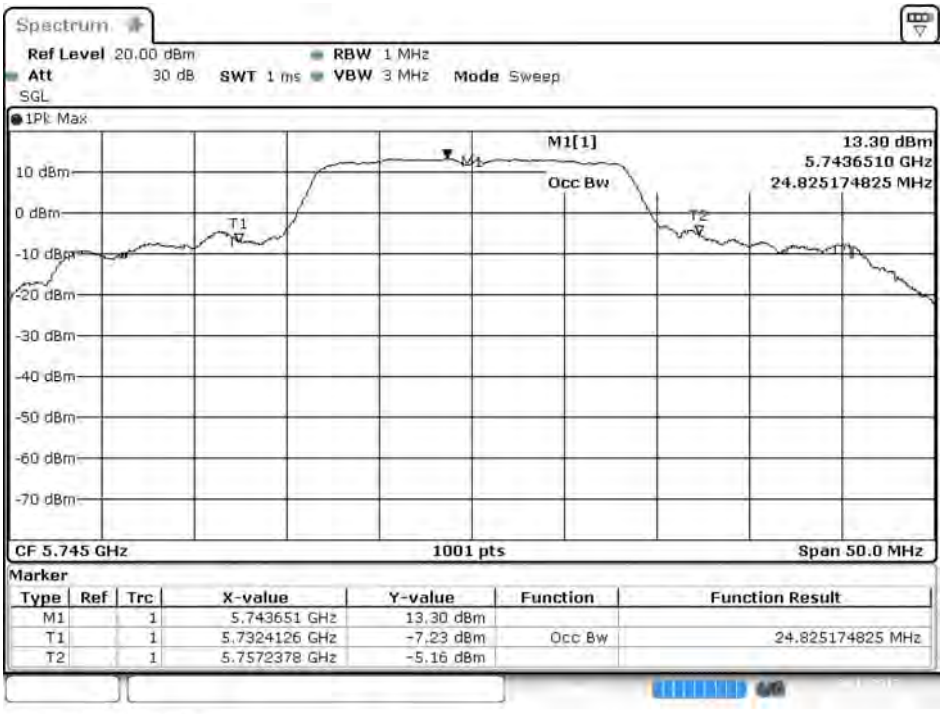
Channel 116:



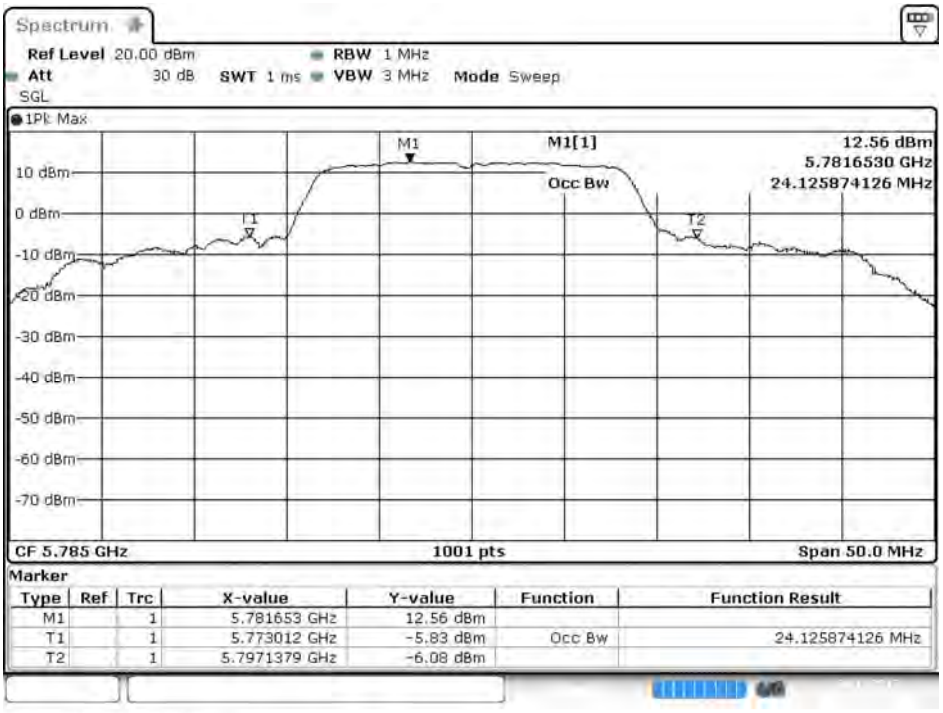
Channel 140:



Channel 149:

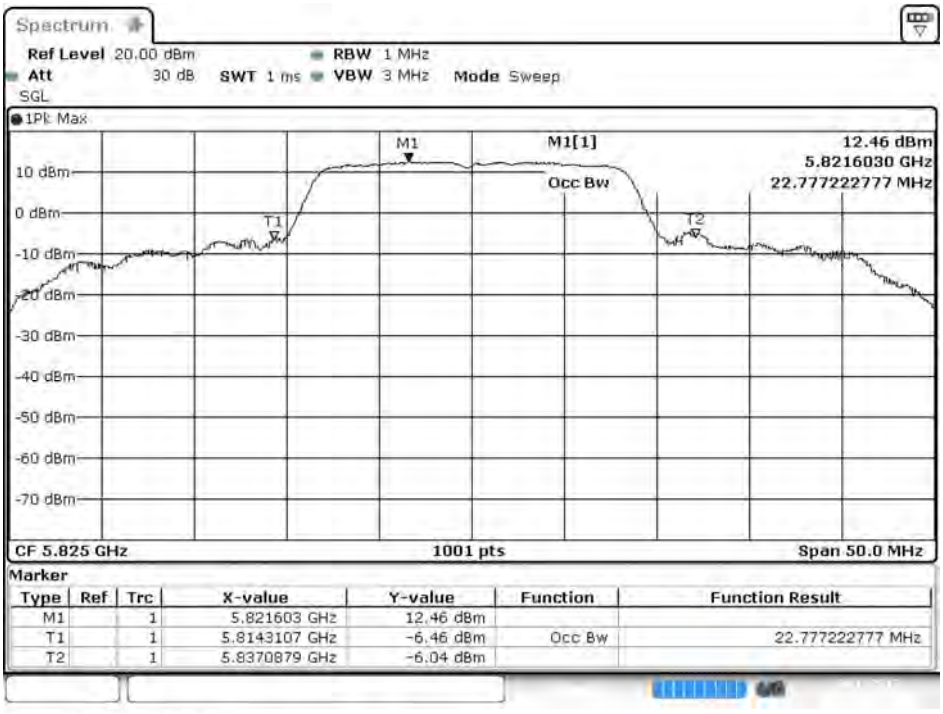


Channel 157:



Date: 24.NOV.2017 16:43:38

Channel 165:



Date: 24.NOV.2017 16:44:59

Product : VistaHub Wifi only
Test Item : Maximum conducted output power
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)
Test Date : 2017/11/24

Cable loss=1dB		Maximum conducted output power							
Channel No.	Frequency (MHz)	Data Rate (Mbps)							
		15	30	45	60	90	120	135	150
		Measurement Level (dBm)							
38	5190	19.82	19.7	19.76	19.8	19.72	19.75	19.54	19.45
46	5230	19.5	--	--	--	--	--	--	--
54	5270	19.53	19.4	19.42	19.34	19.39	19.29	19.21	19.2
62	5310	10.96	--	--	--	--	--	--	--
102	5510	8.18	--	--	--	--	--	--	--
110	5550	16.95	16.89	16.78	16.60	16.68	16.81	16.71	16.40
134	5670	16.67	--	--	--	--	--	--	--
151	5755	16.76	--	--	--	--	--	--	--
159	5795	16.79	16.71	16.61	16.55	16.49	16.71	16.45	16.60

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

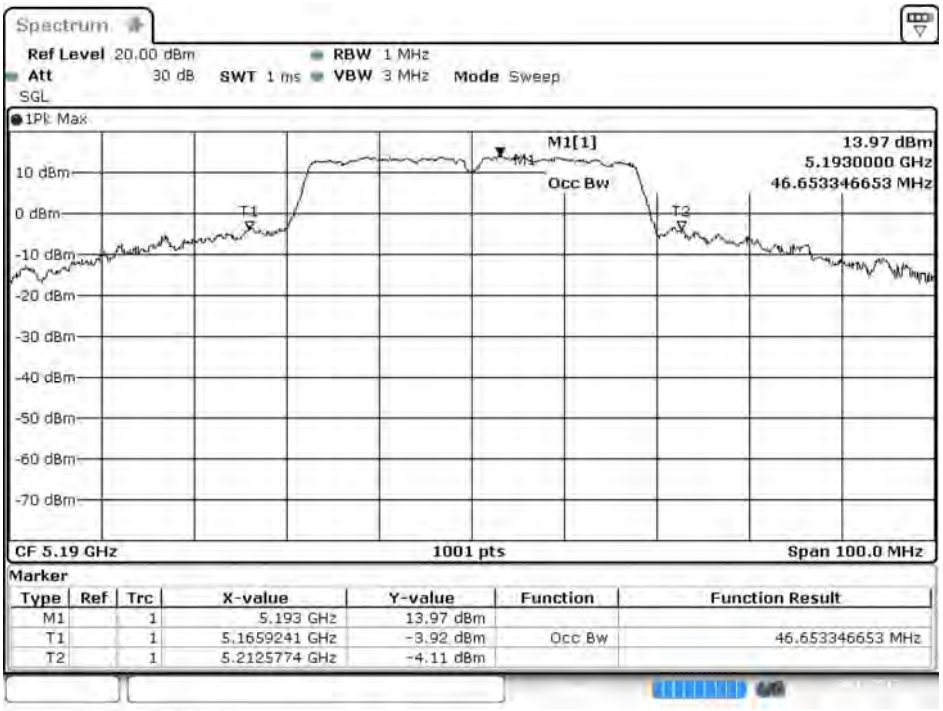
Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	99% Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
38	5190	46.65	19.82	24	--
46	5230	41.65	19.5	24	--
54	5270	36.76	19.53	24	26.65
62	5310	36.21	10.96	24	26.59
102	5510	36.36	8.18	24	26.61
110	5550	45.35	16.95	24	27.57
134	5670	37.46	16.67	24	26.74
151	5755	39.46	16.76	30	--
159	5795	38.46	16.79	30	--

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

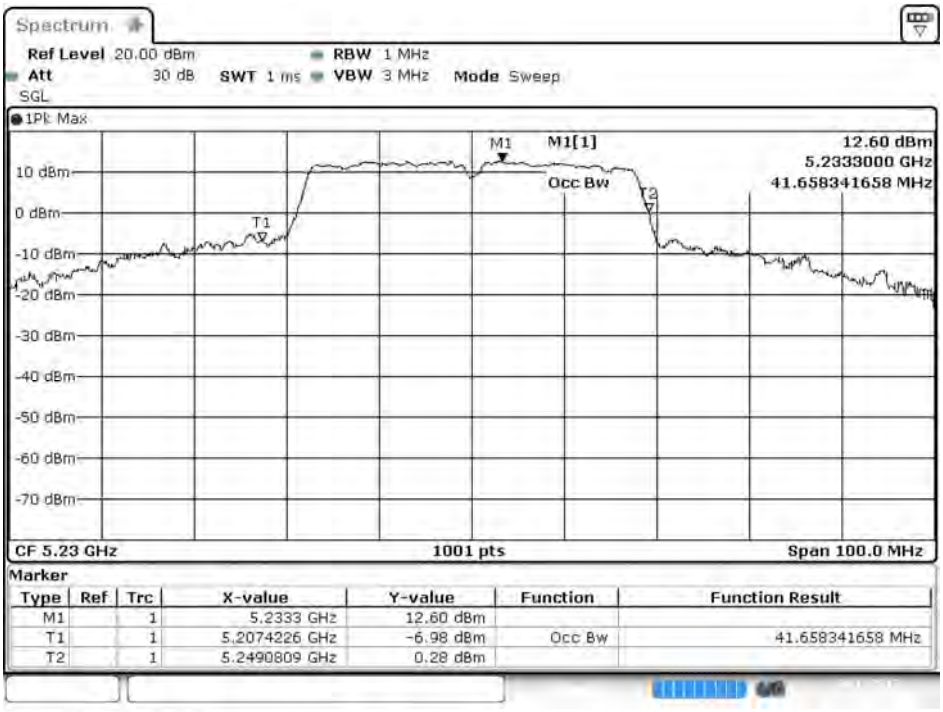
99% Occupied Bandwidth:

Channel 38



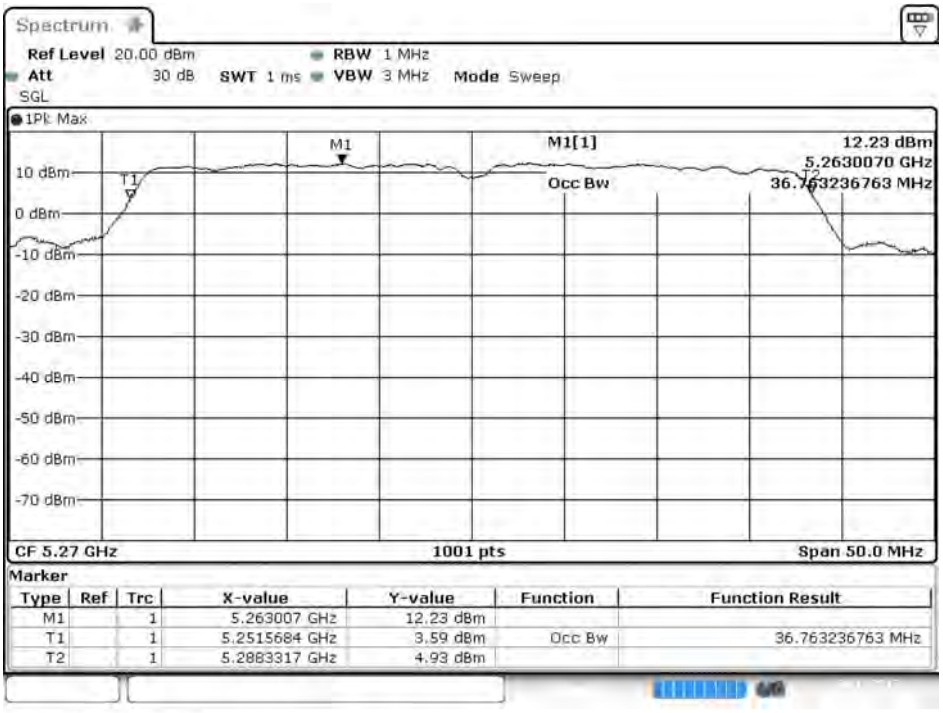
Date: 24.NOV.2017 16:19:18

Channel 46



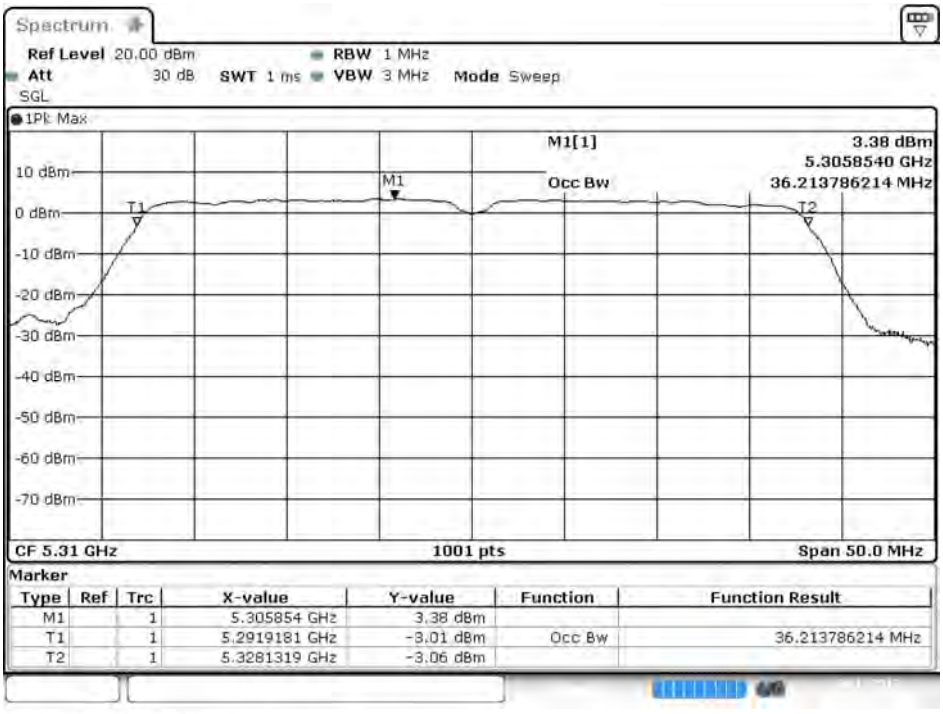
Date: 24.NOV.2017 16:21:21

Channel 54



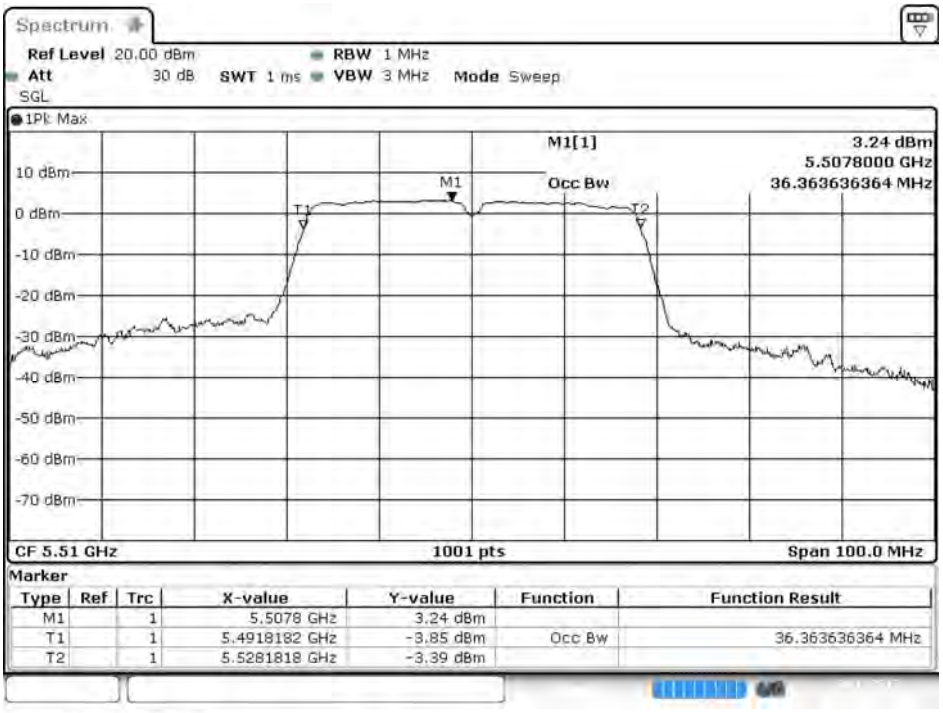
Date: 24.NOV.2017 16:23:51

Channel 62



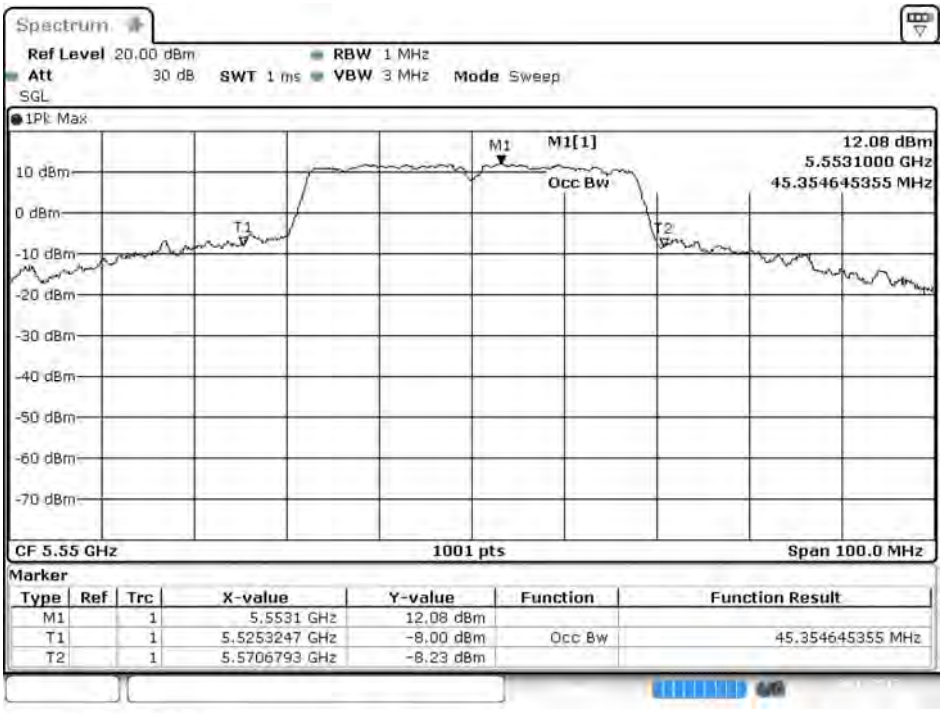
Date: 24.NOV.2017 16:25:57

Channel 102



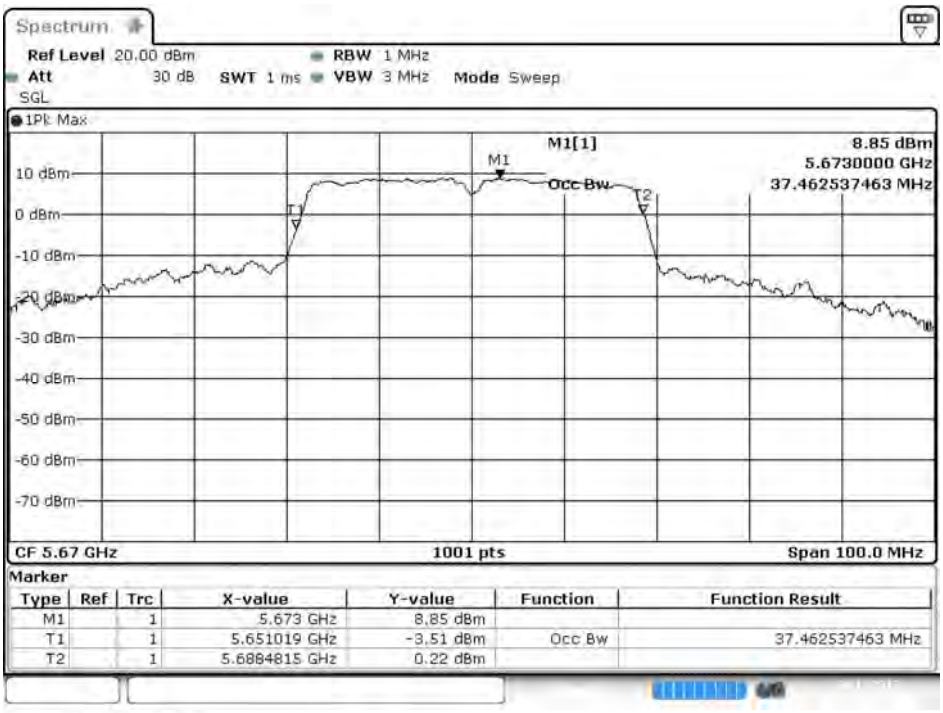
Date: 24.NOV.2017 16:27:43

Channel 110



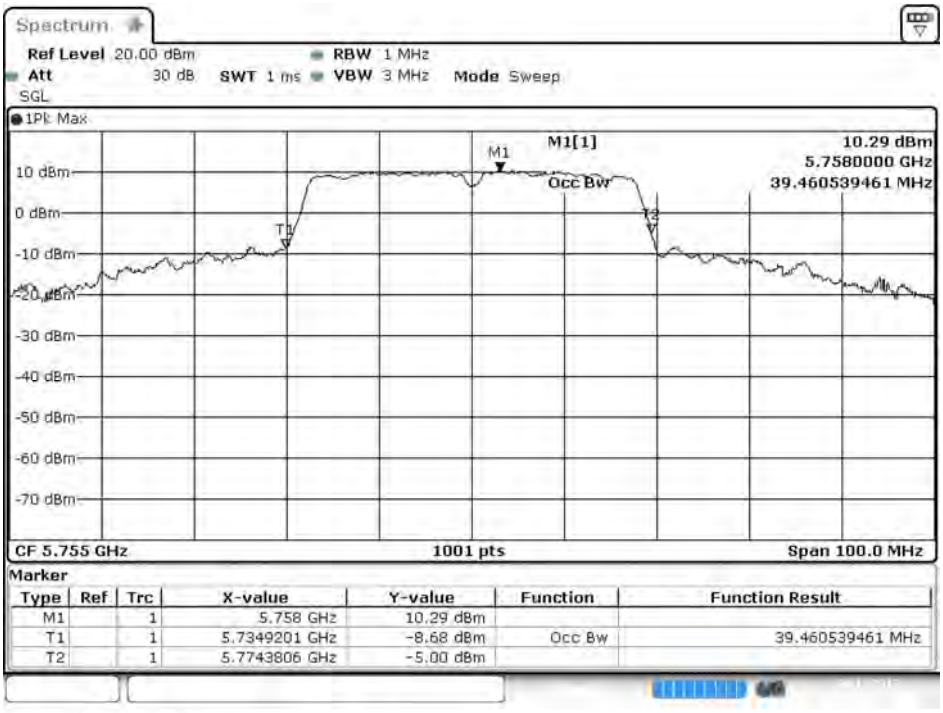
Date: 24.NOV.2017 16:30:15

Channel 134



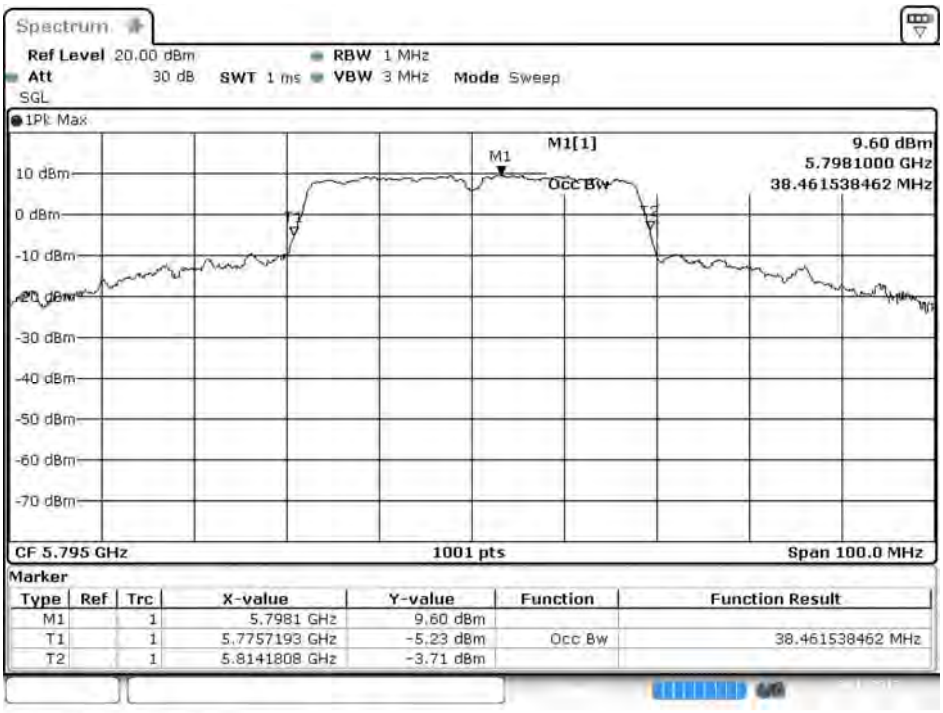
Date: 24.NOV.2017 16:34:33

Channel 151



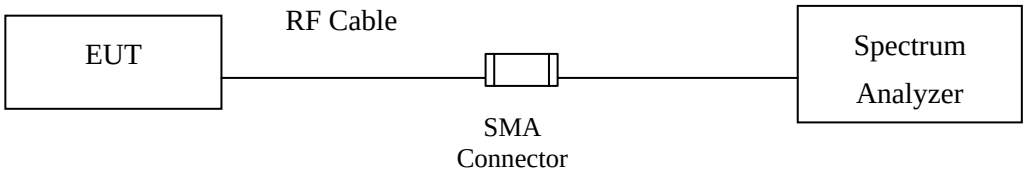
Date: 24.NOV.2017 16:46:28

Channel 159


Spectrum
Ref Level 20.00 dBm
RBW 1 MHz
Att 30 dB
SWT 1 ms
VBW 3 MHz
Mode Sweep
SGL
1Pk Max
M1[1]
9.60 dBm
5.7981000 GHz
38.461538462 MHz
M1
Occ Bw
10 dBm
0 dBm
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
CF 5.795 GHz
1001 pts
Span 100.0 MHz
Marker
Type Ref Trc X-value Y-value Function Function Result
M1 1 5.7981 GHz 9.60 dBm
T1 1 5.7757193 GHz -5.23 dBm Occ Bw 38.461538462 MHz
T2 1 5.8141808 GHz -3.71 dBm
Date: 24.NOV.2017 16:47:49

4. Peak Power Spectral Density

4.1. Test Setup



4.2. Limits

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-topoint 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.+

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.

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.

4.3. 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 = 10log (500 kHz/100 kHz) = 6.98 dB.

4.4. Uncertainty

±1.30dB

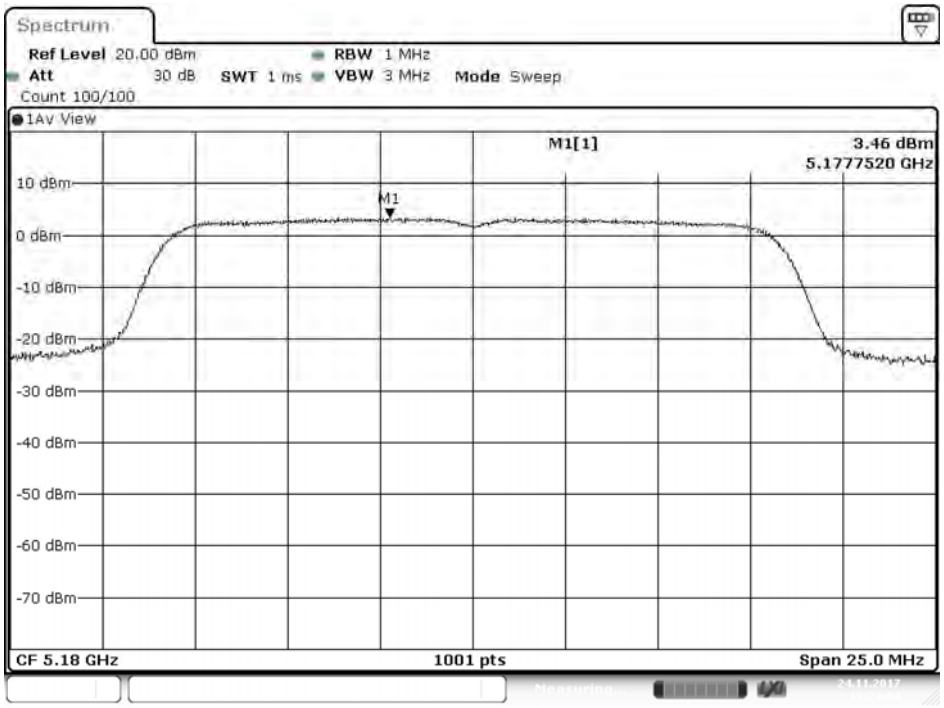
4.5. Test Result of Peak Power Spectral Density

Product : VistaHub Wifi only
Test Item : Peak Power Spectral Density
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2017/11/24

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	3.46	<11	Pass
44	5220	6	4.76	<11	Pass
48	5240	6	8.55	<11	Pass
52	5260	6	7.90	<11	Pass
60	5300	6	6.83	<11	Pass
64	5320	6	6.49	<11	Pass
100	5500	6	3.88	<11	Pass
116	5580	6	5.40	<11	Pass
140	5700	6	3.79	<11	Pass

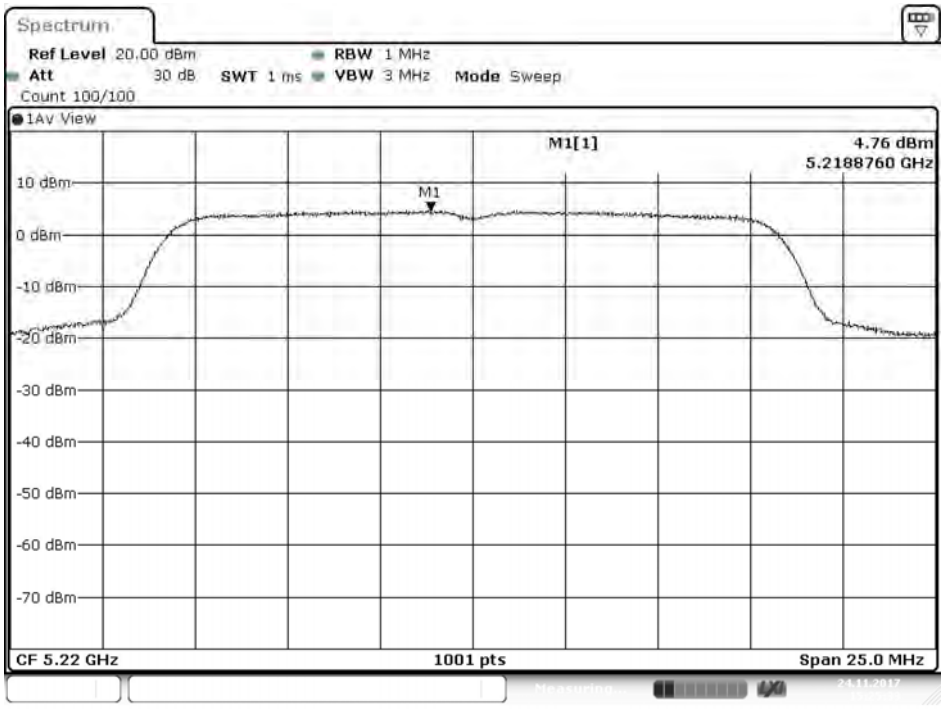
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-3.71	6.98	3.27	<30	Pass
157	5785	6	-4.47	6.98	2.51	<30	Pass
165	5825	6	-3.98	6.98	3.00	<30	Pass

Channel 36:



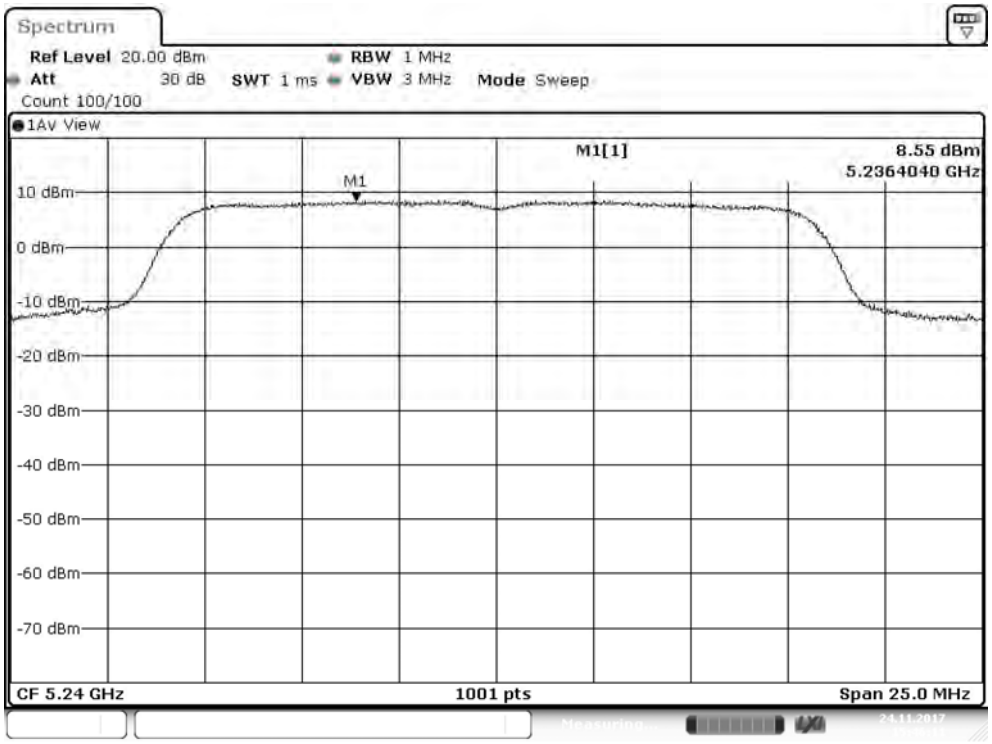
Date: 24.NOV.2017 15:23:04

Channel 44:



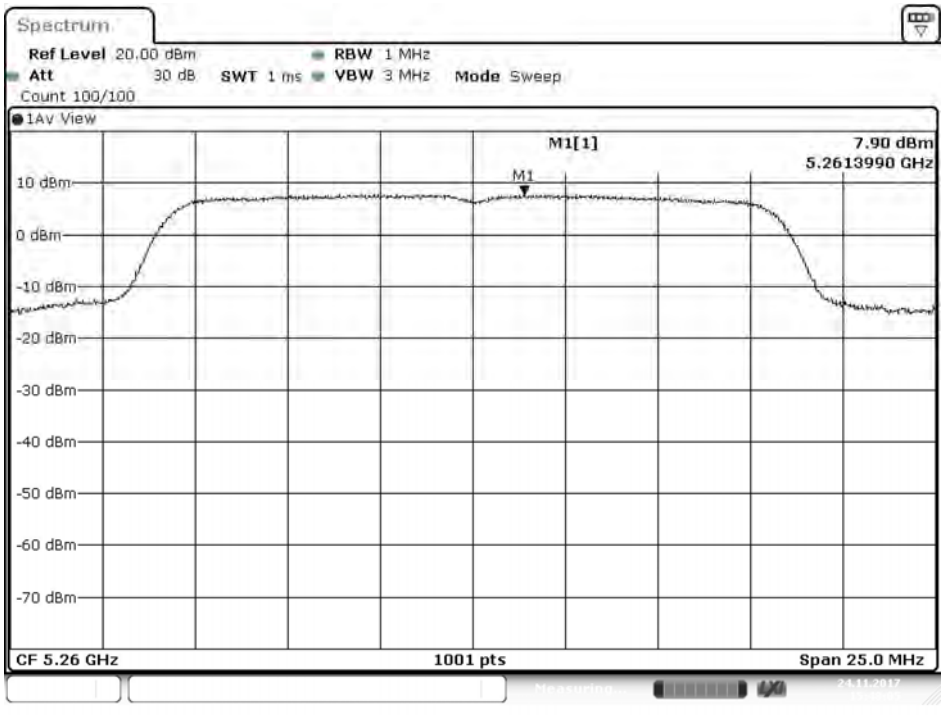
Date: 24.NOV.2017 15:25:33

Channel 48:



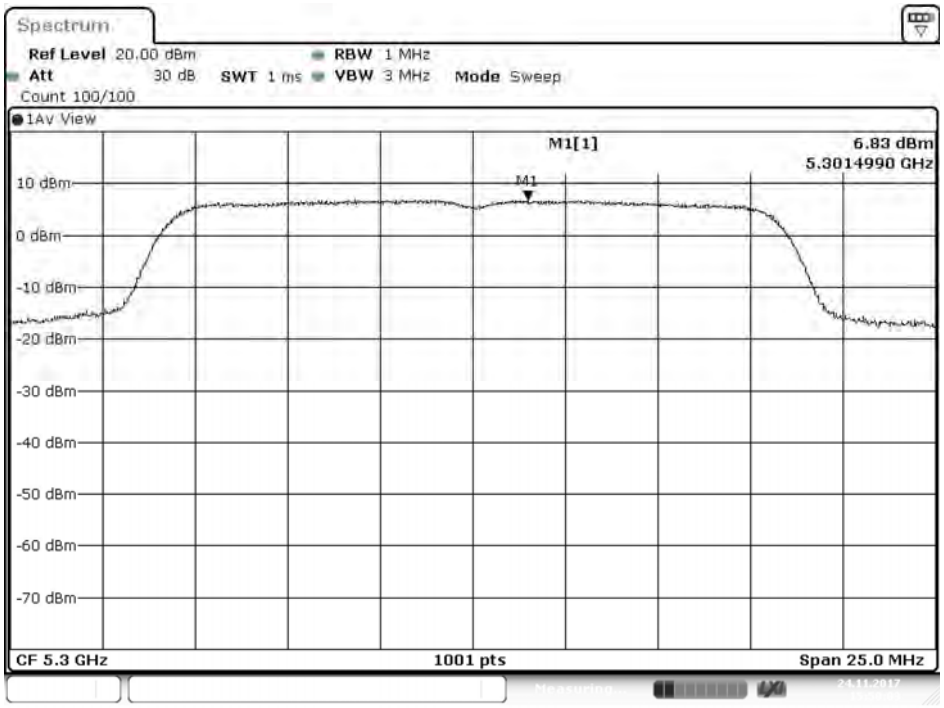
Date: 24.NOV.2017 15:46:12

Channel 52:



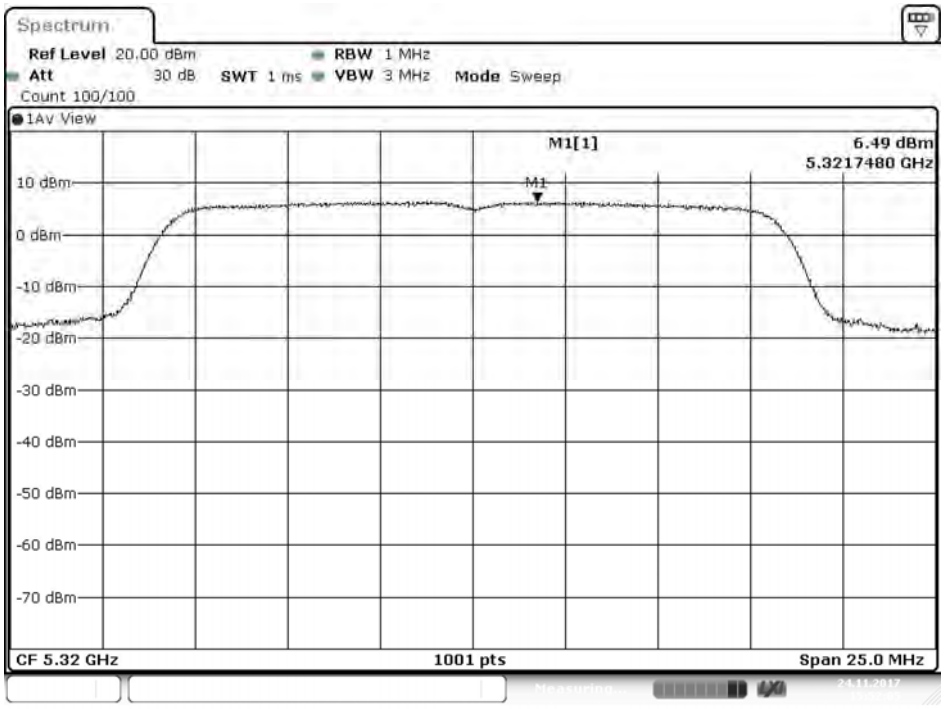
Date: 24.NOV.2017 15:48:05

Channel 60:



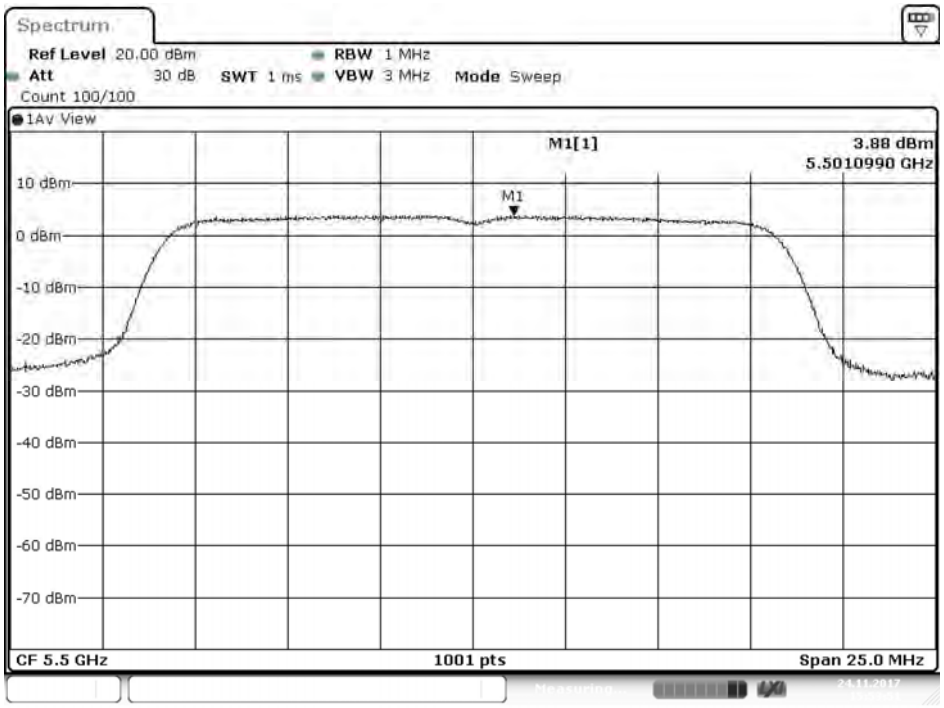
Date: 24.NOV.2017 15:50:03

Channel 64:



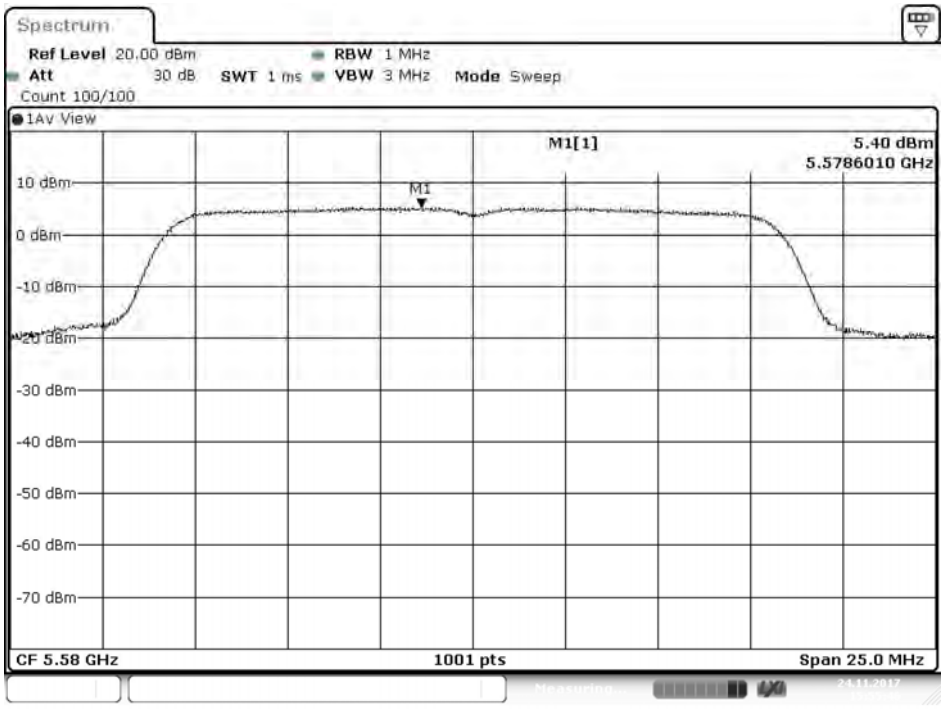
Date: 24.NOV.2017 15:52:05

Channel 100:



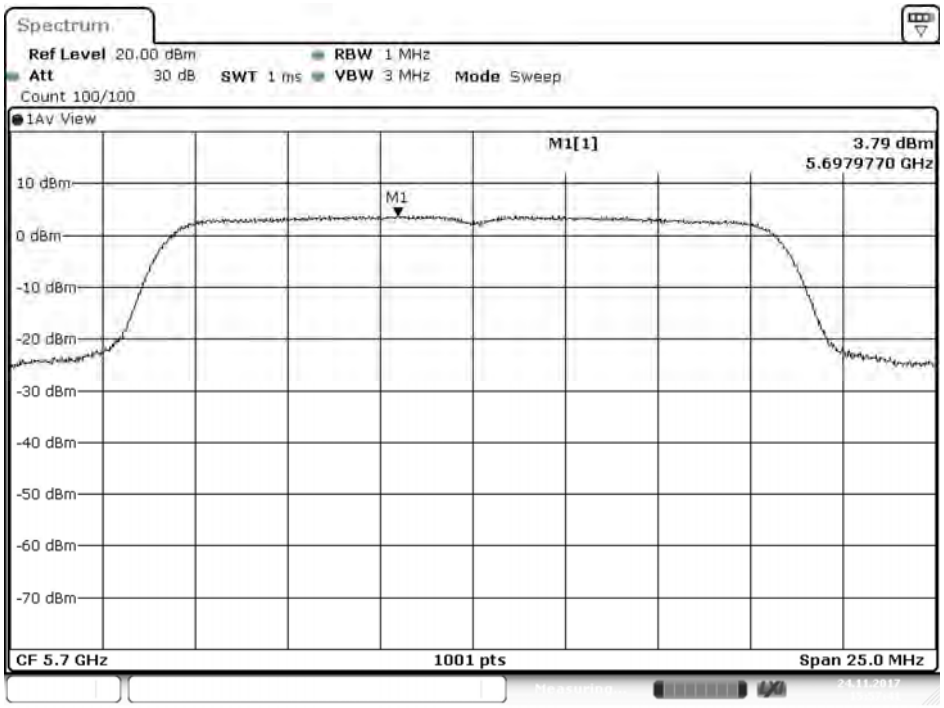
Date: 24.NOV.2017 15:53:52

Channel 116:



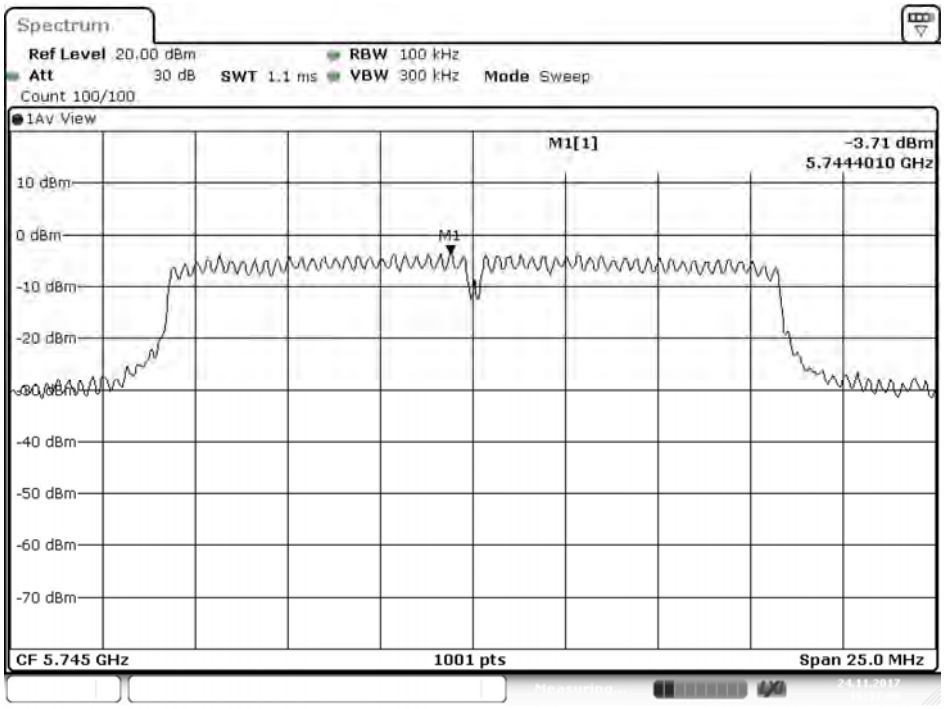
Date: 24.NOV.2017 15:55:46

Channel 140:



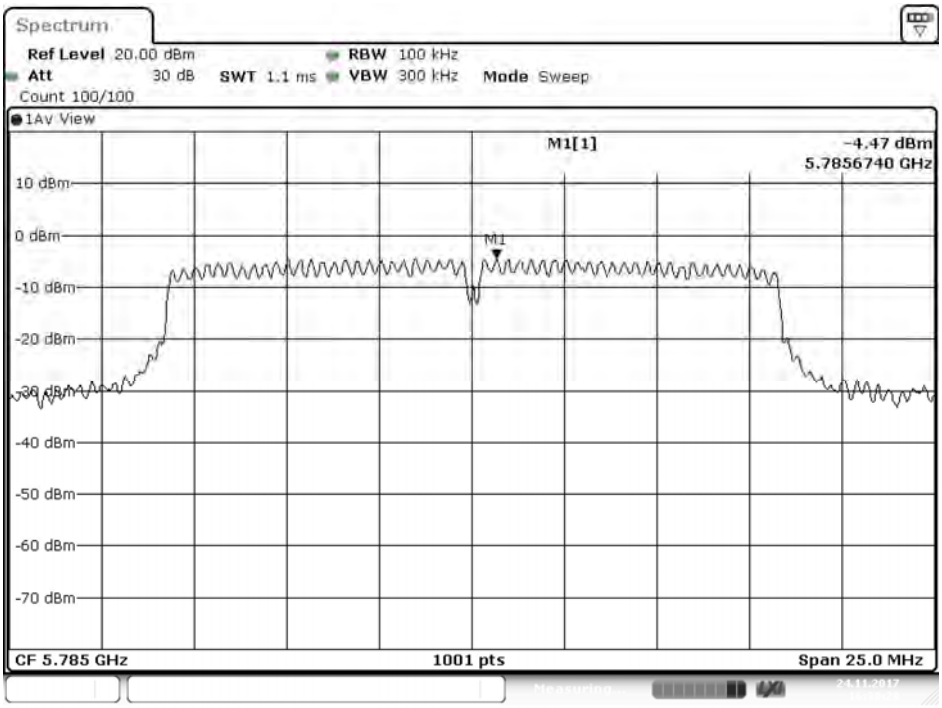
Date: 24.NOV.2017 15:57:42

Channel 149



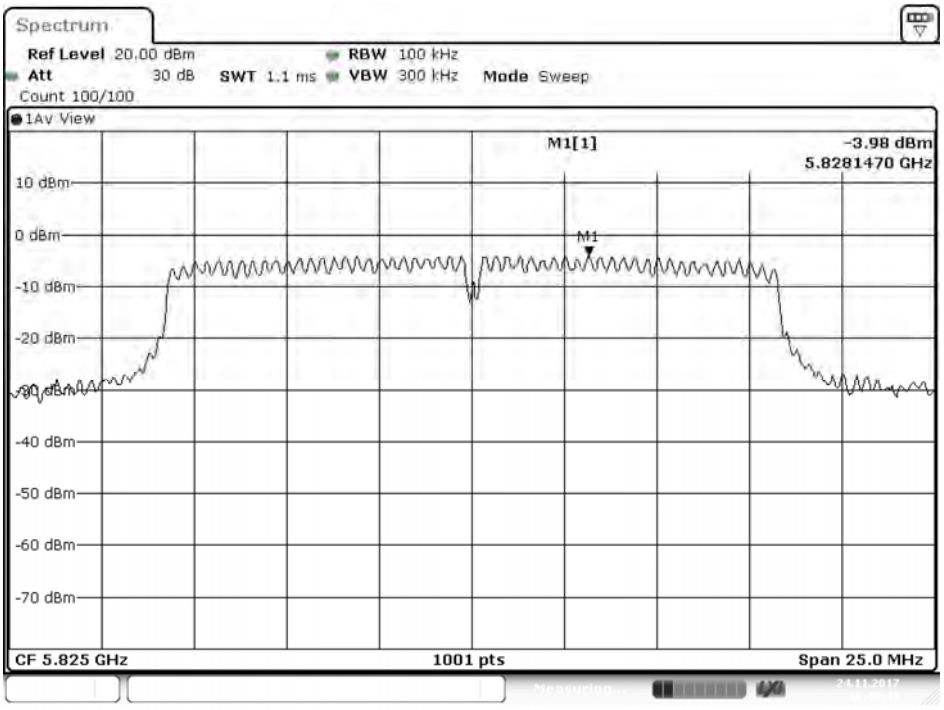
Date: 24.NOV.2017 16:37:08

Channel 157



Date: 24.NOV.2017 16:38:29

Channel 165



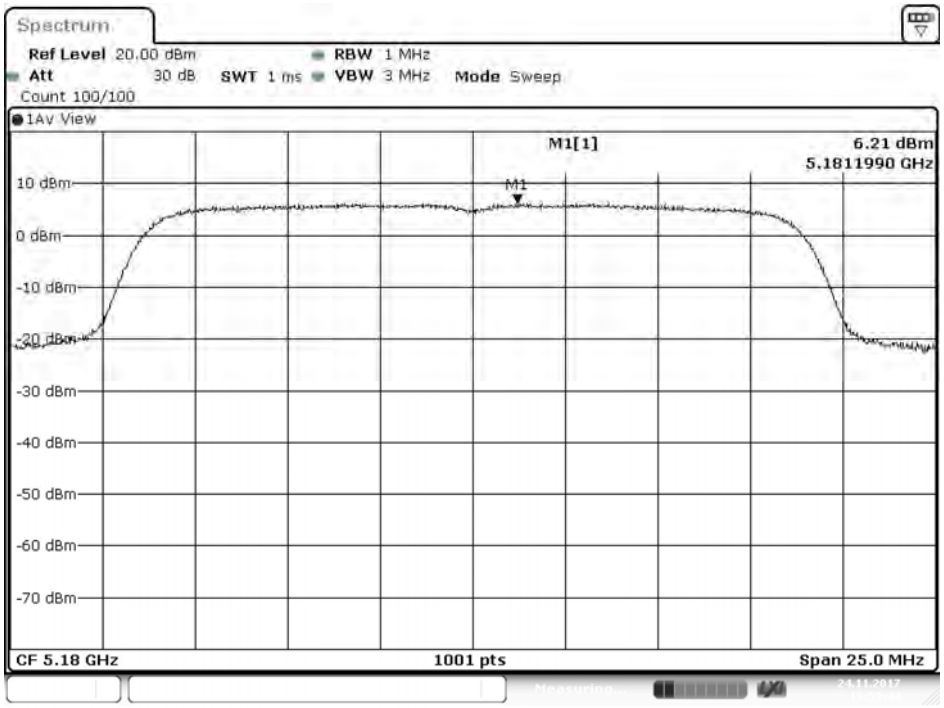
Date: 24.NOV.2017 16:40:43

Product : VistaHub Wifi only
Test Item : Peak Power Spectral Density
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2017/11/24

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	7.2	6.21	11	Pass
44	5220	7.2	7.28	11	Pass
48	5240	7.2	6.88	11	Pass
52	5260	7.2	6.87	11	Pass
60	5300	7.2	6.00	11	Pass
64	5320	7.2	4.12	11	Pass
100	5500	7.2	3.24	11	Pass
116	5580	7.2	4.63	11	Pass
140	5700	7.2	3.10	11	Pass

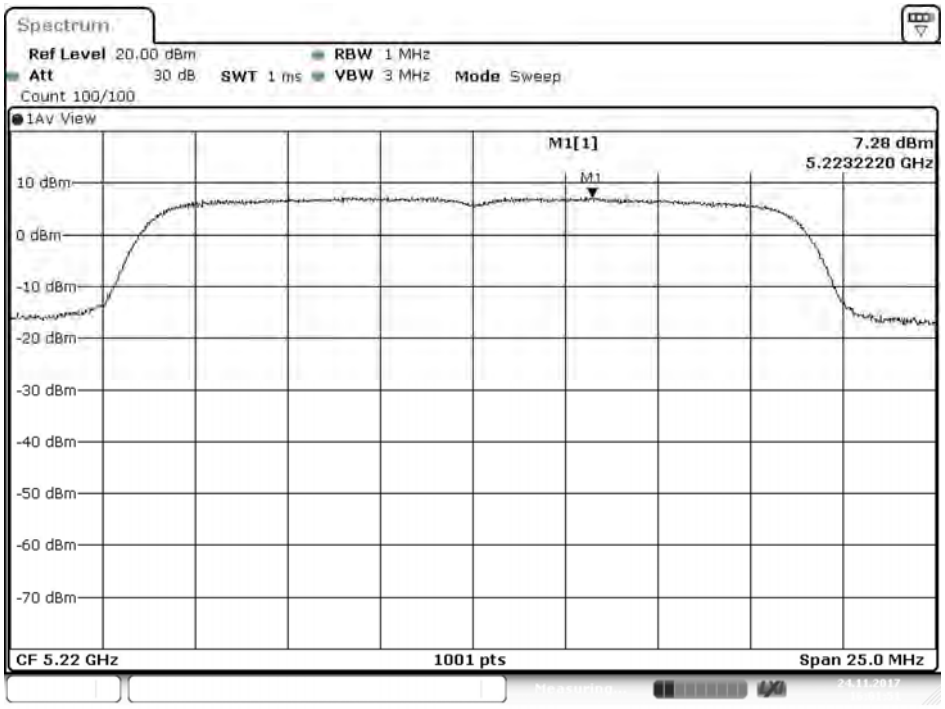
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	7.2	-4.16	6.98	2.82	<30	Pass
157	5785	7.2	-4.75	6.98	2.23	<30	Pass
165	5825	7.2	-4.49	6.98	2.49	<30	Pass

Channel 36:



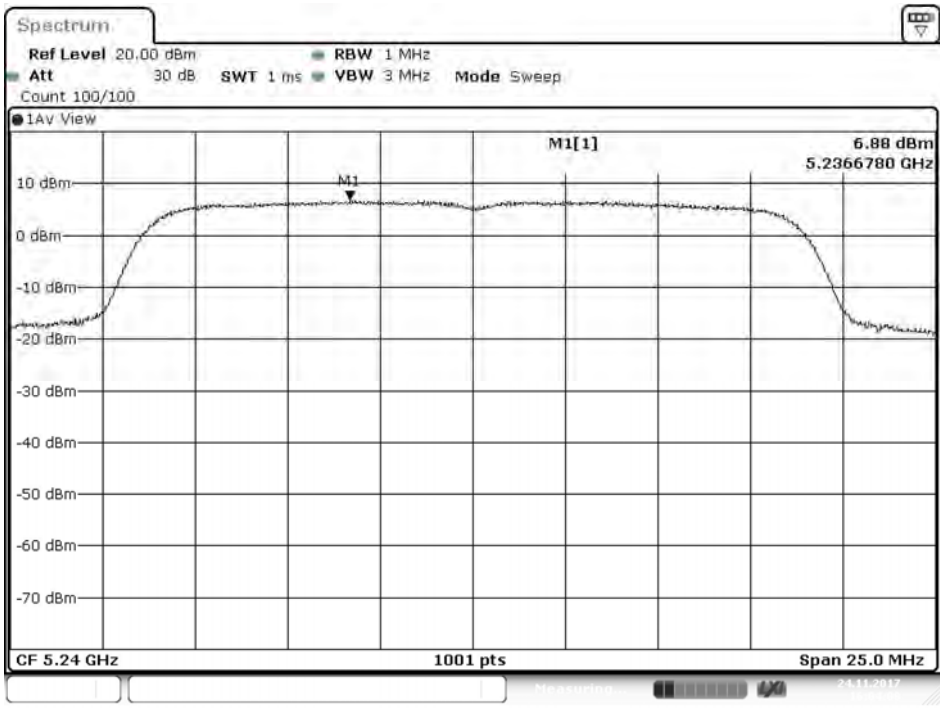
Date: 24.NOV.2017 15:59:44

Channel 44:



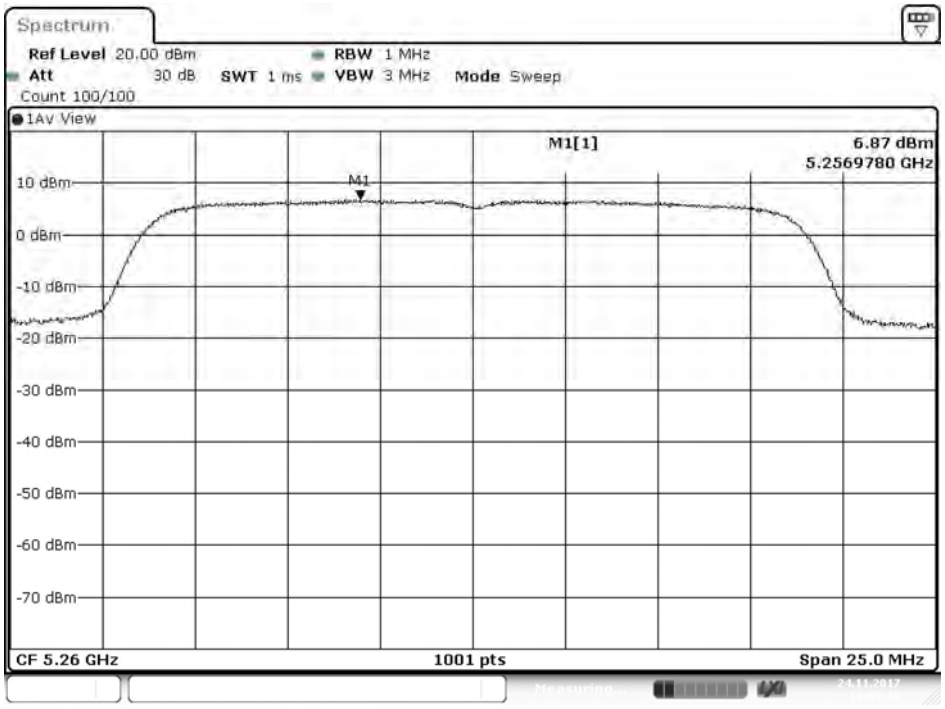
Date: 24.NOV.2017 16:01:51

Channel 48:



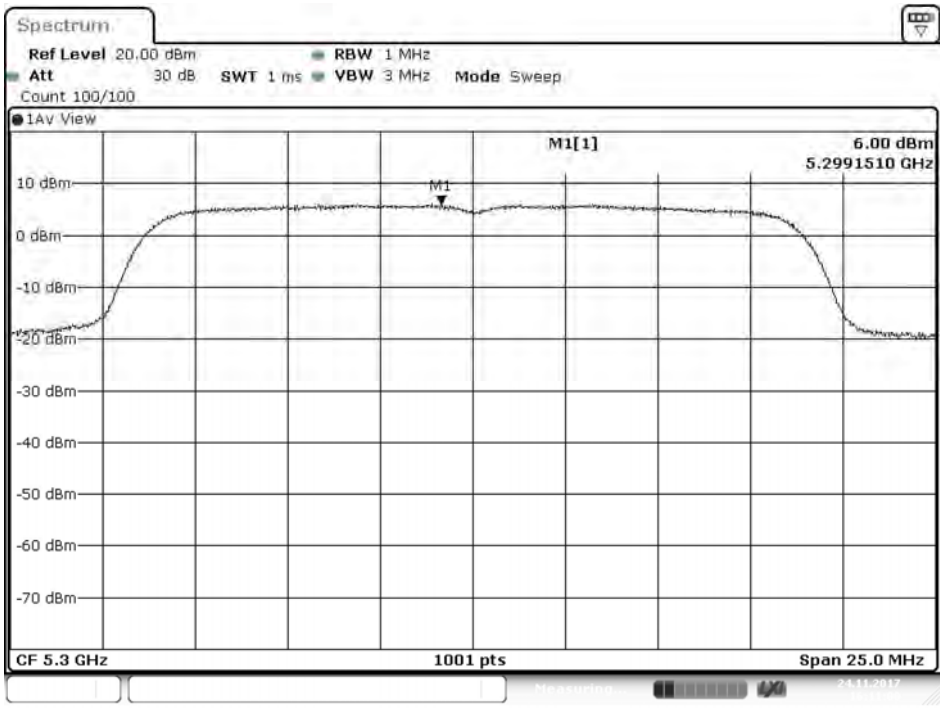
Date: 24.NOV.2017 16:04:08

Channel 52:



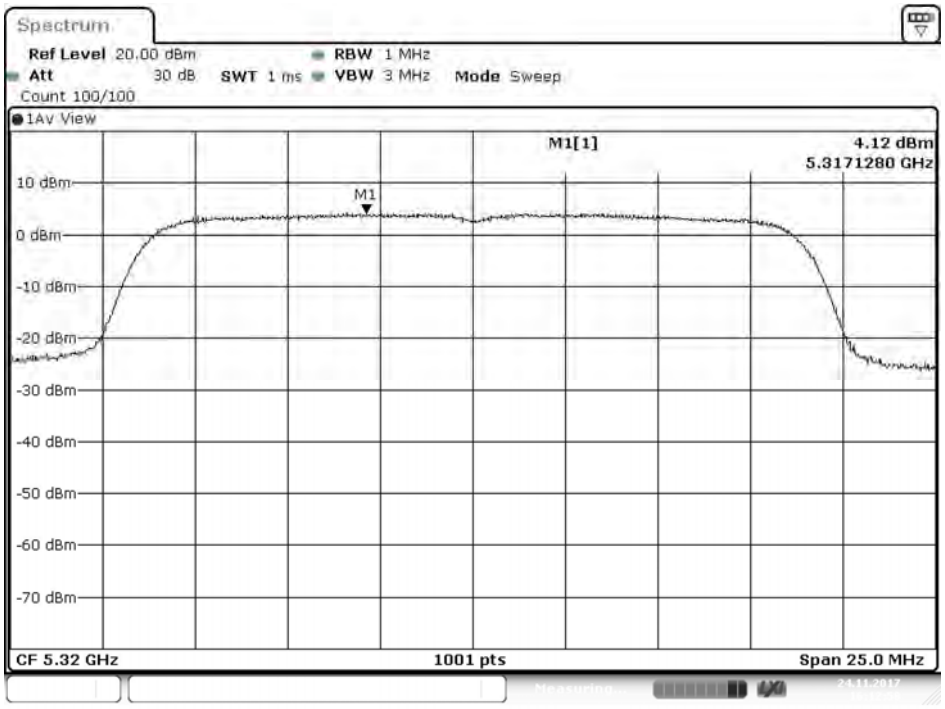
Date: 24.NOV.2017 16:09:16

Channel 60:



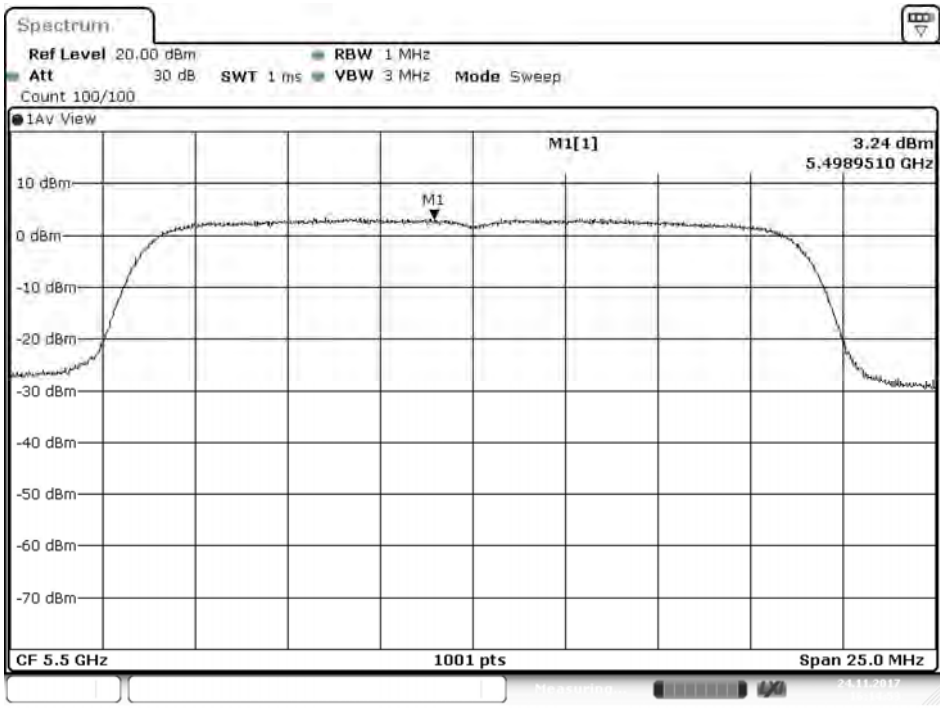
Date: 24.NOV.2017 16:11:00

Channel 64:



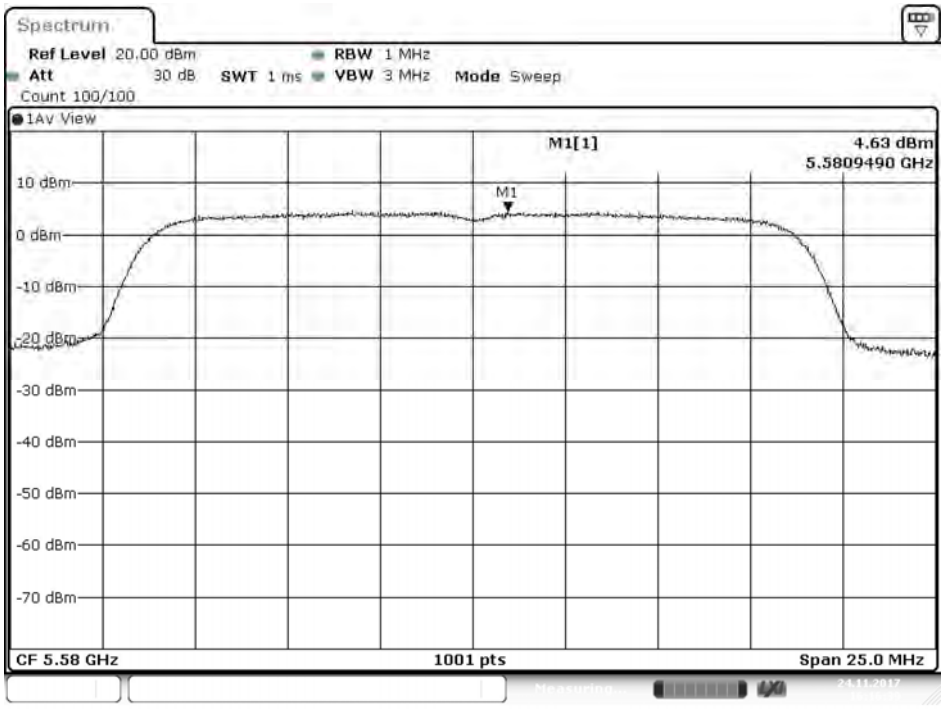
Date: 24.NOV.2017 16:12:59

Channel 100:



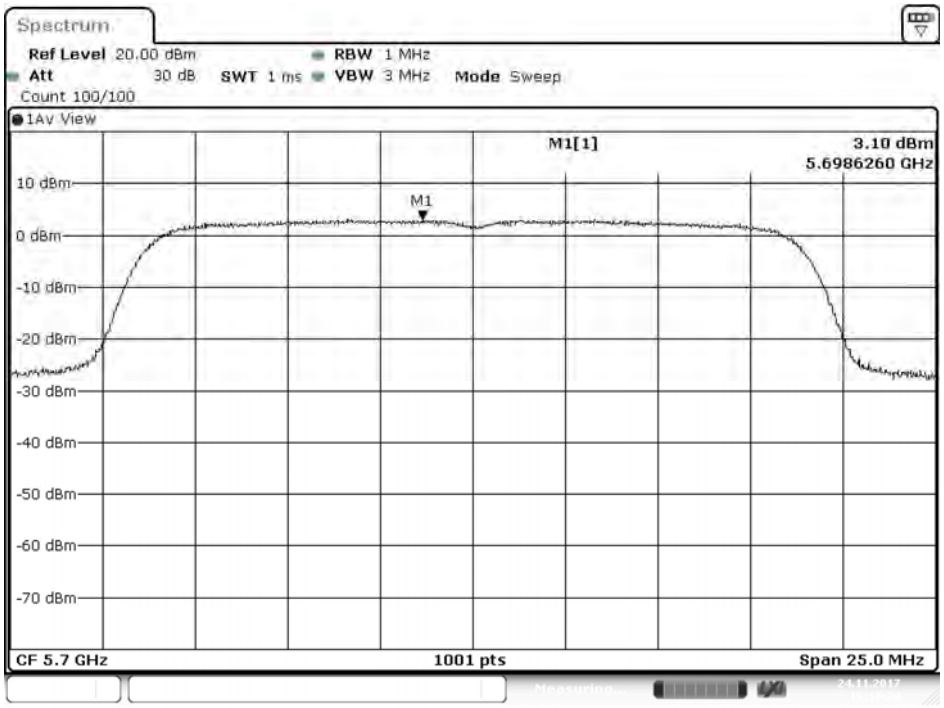
Date: 24.NOV.2017 16:14:54

Channel 116:



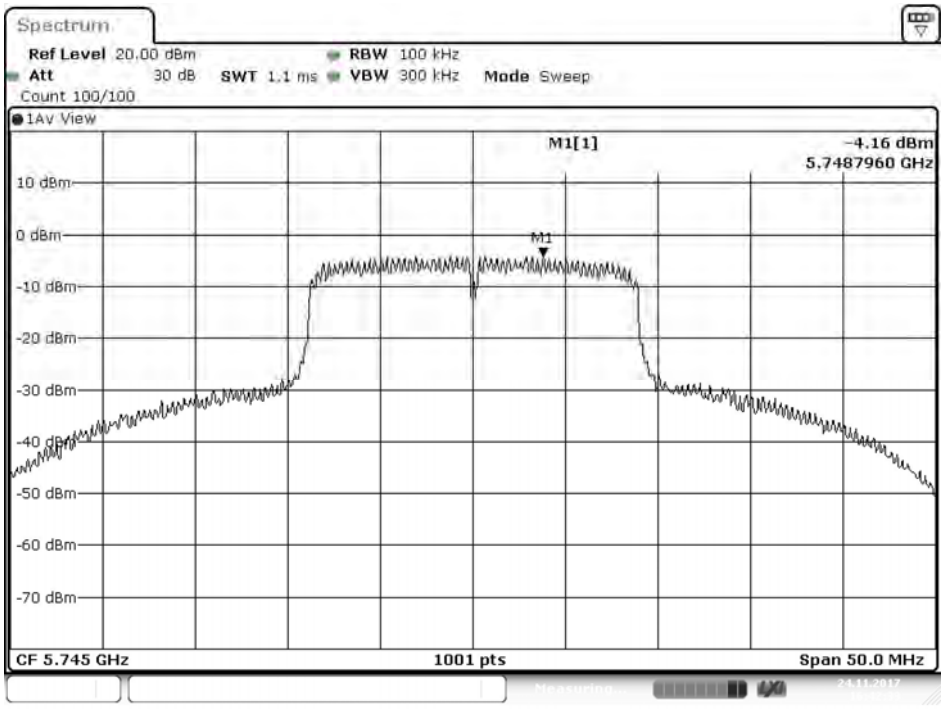
Date: 24.NOV.2017 16:16:39

Channel 140:



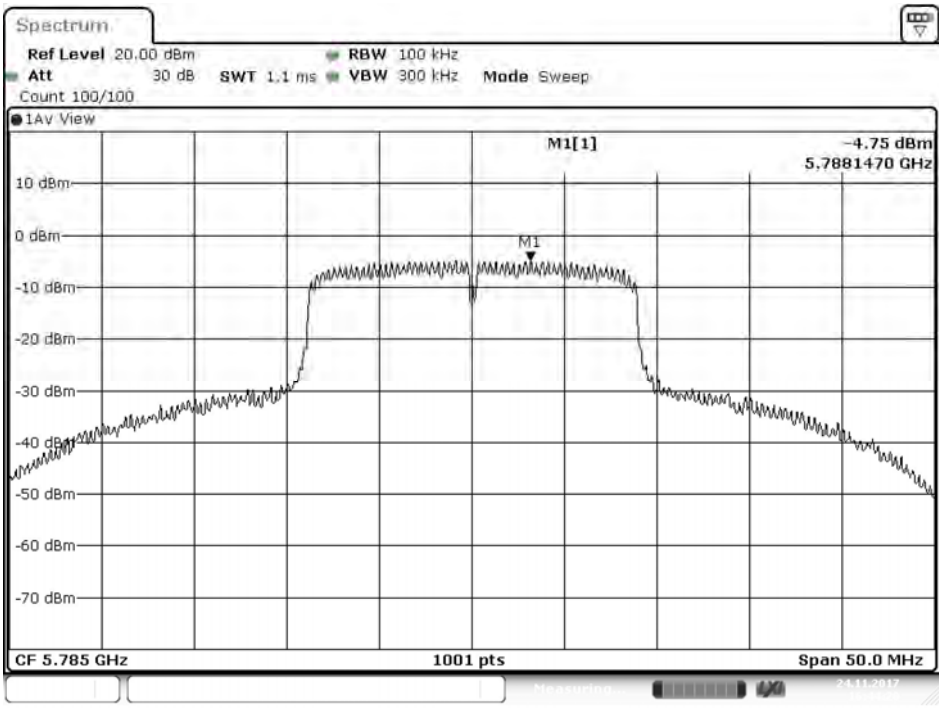
Date: 24.NOV.2017 16:18:25

Channel 149



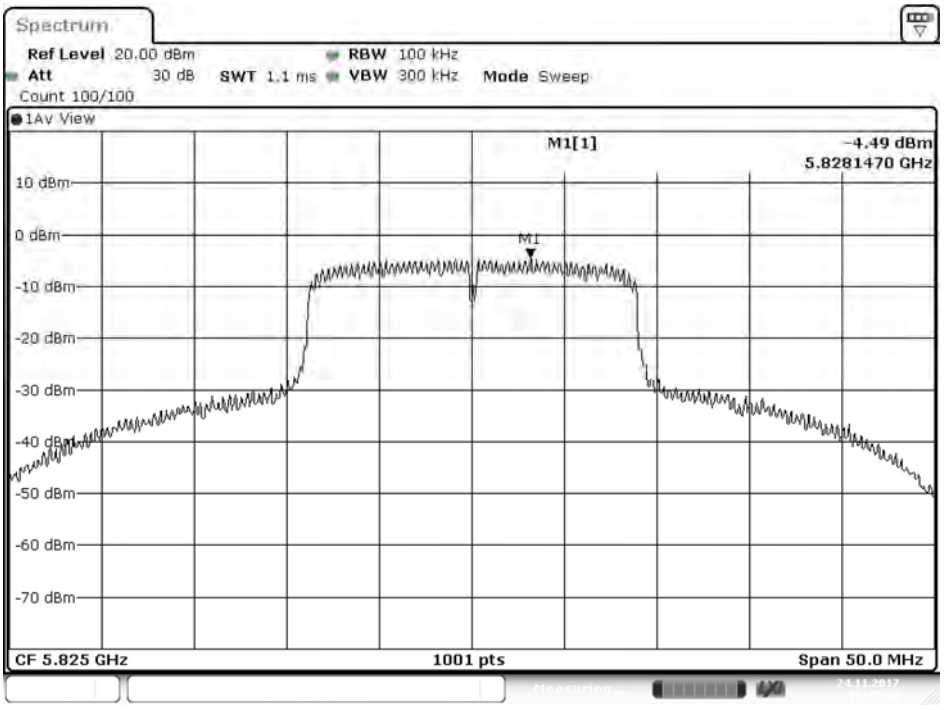
Date: 24.NOV.2017 16:42:34

Channel 157



Date: 24.NOV.2017 16:44:20

Channel 165



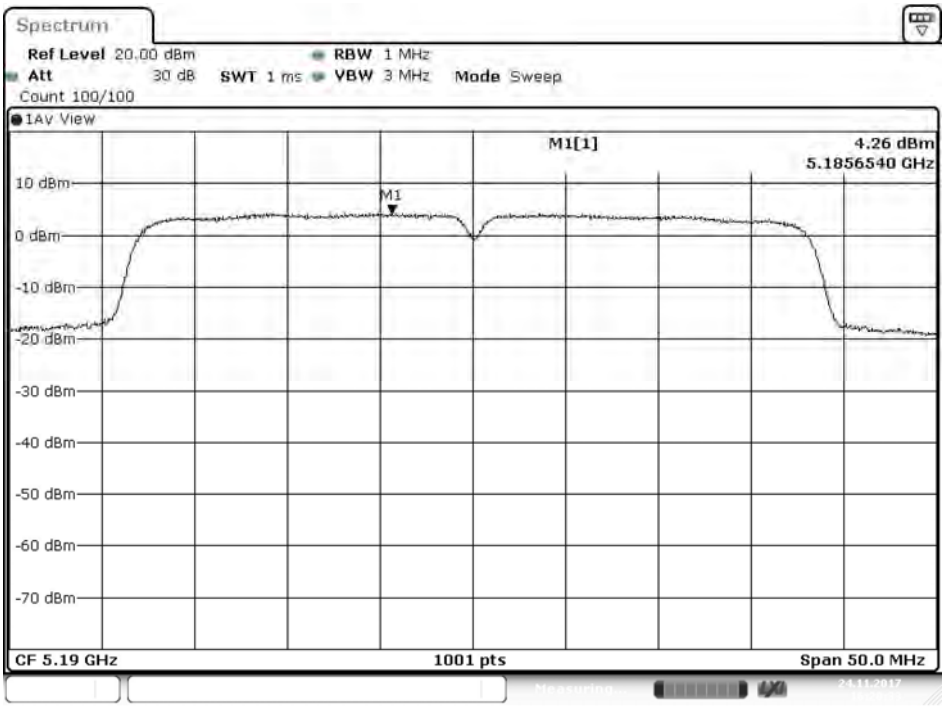
Date: 24.NOV.2017 16:45:41

Product : VistaHub Wifi only
Test Item : Peak Power Spectral Density
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)
Test Date : 2017/11/24

Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	5190	15	4.26	11	Pass
46	5230	15	3.41	11	Pass
54	5270	15	3.31	11	Pass
62	5310	15	-4.53	11	Pass
102	5510	15	-5.00	11	Pass
110	5550	15	2.06	11	Pass
134	5670	15	-0.02	11	Pass

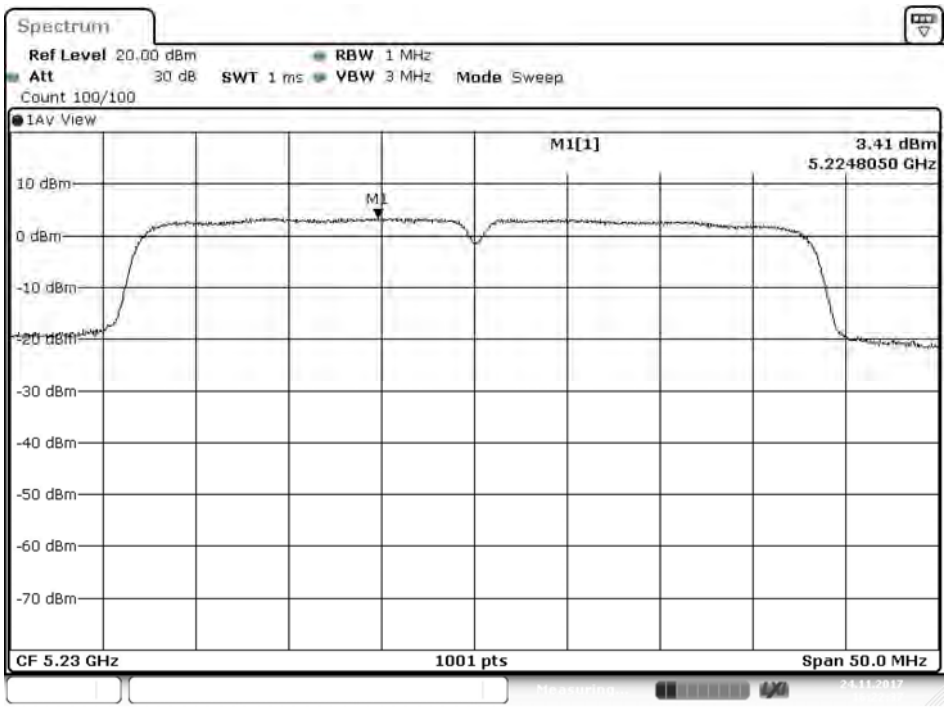
Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
151	5755	15	-7.70	6.98	-0.72	<30	Pass
159	5795	15	-7.97	6.98	-0.99	<30	Pass

Channel 38



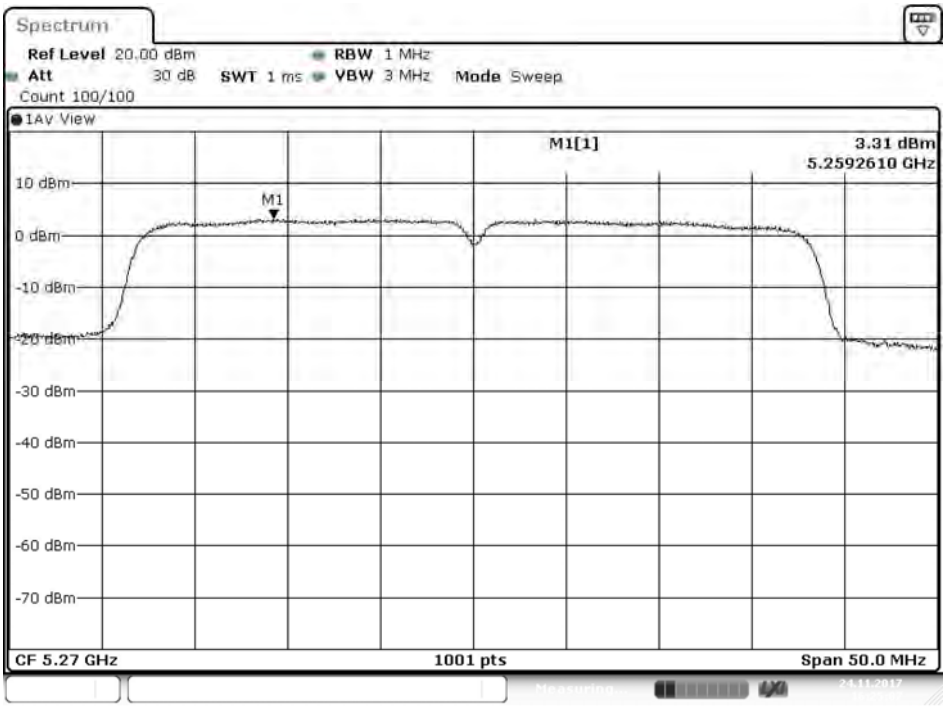
Date: 24.NOV.2017 16:20:34

Channel 46



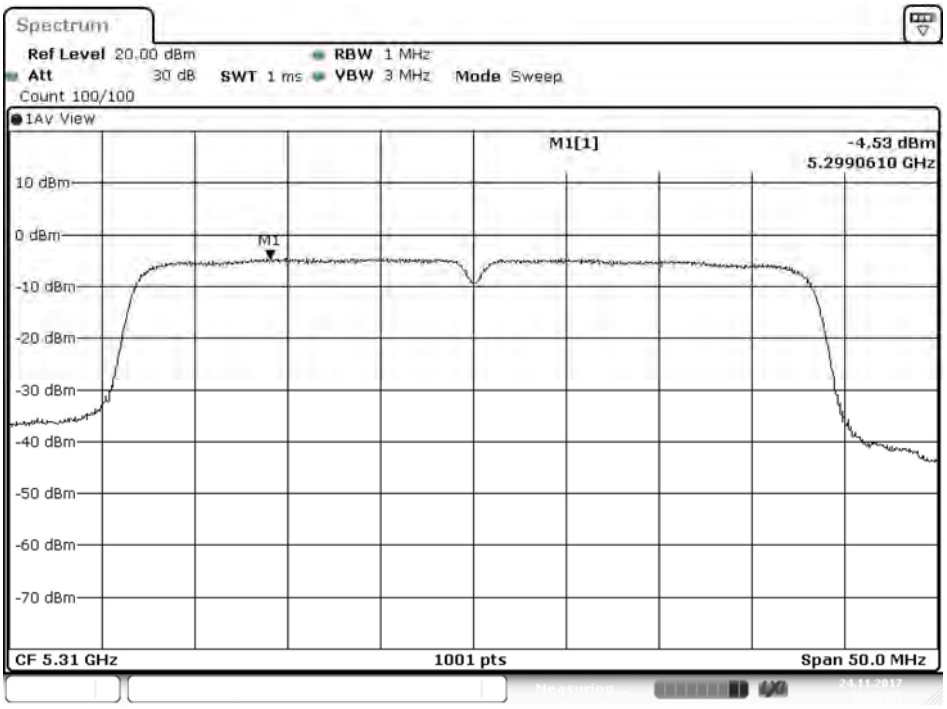
Date: 24.NOV.2017 16:22:37

Channel 54



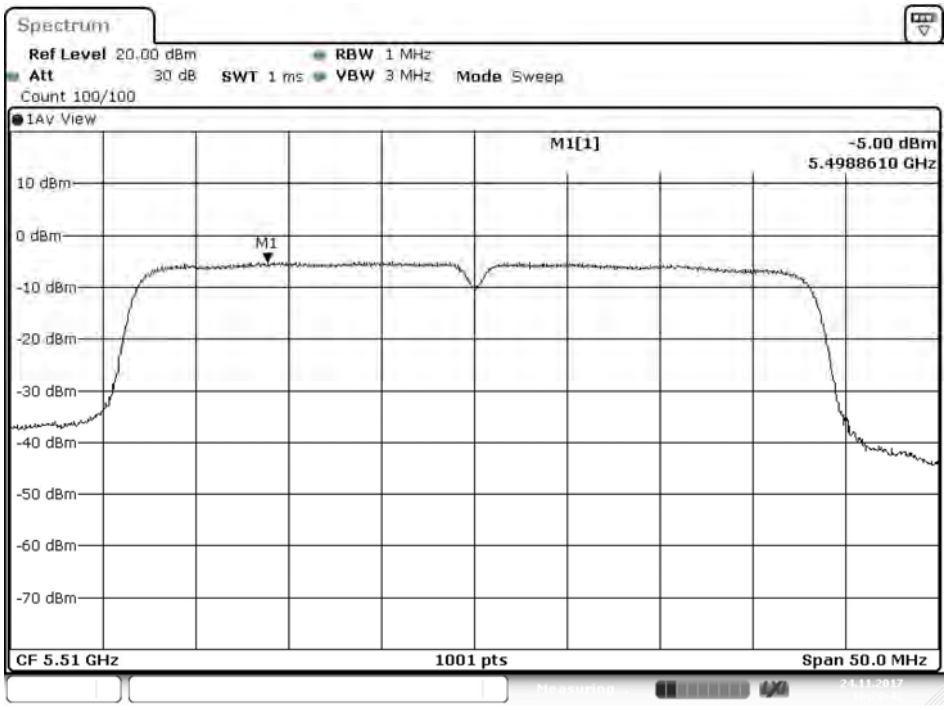
Date: 24.NOV.2017 16:25:07

Channel 62



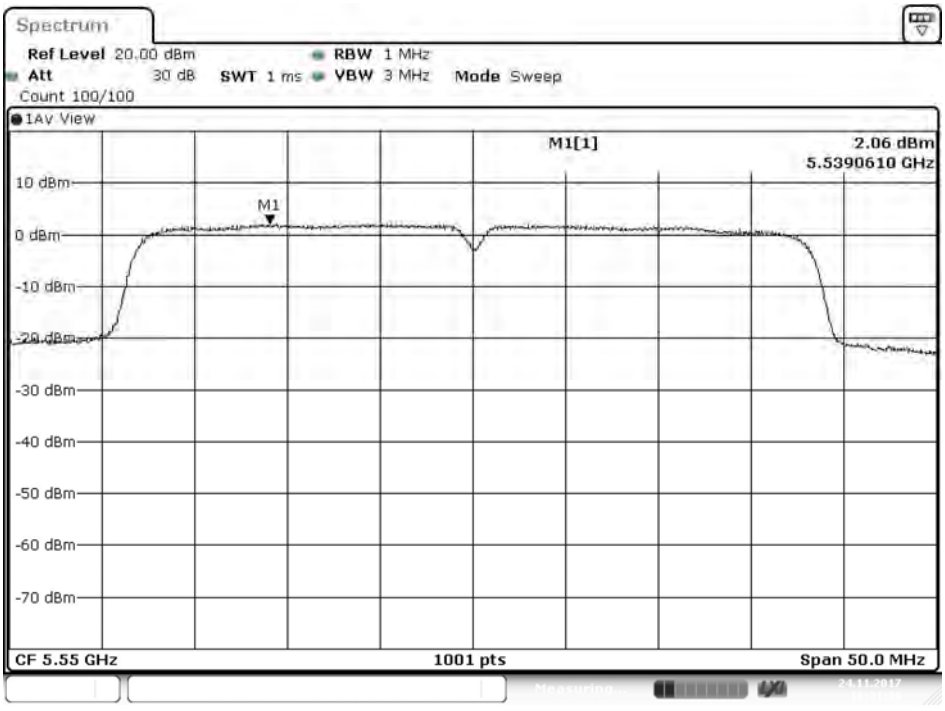
Date: 24.NOV.2017 16:26:56

Channel 102



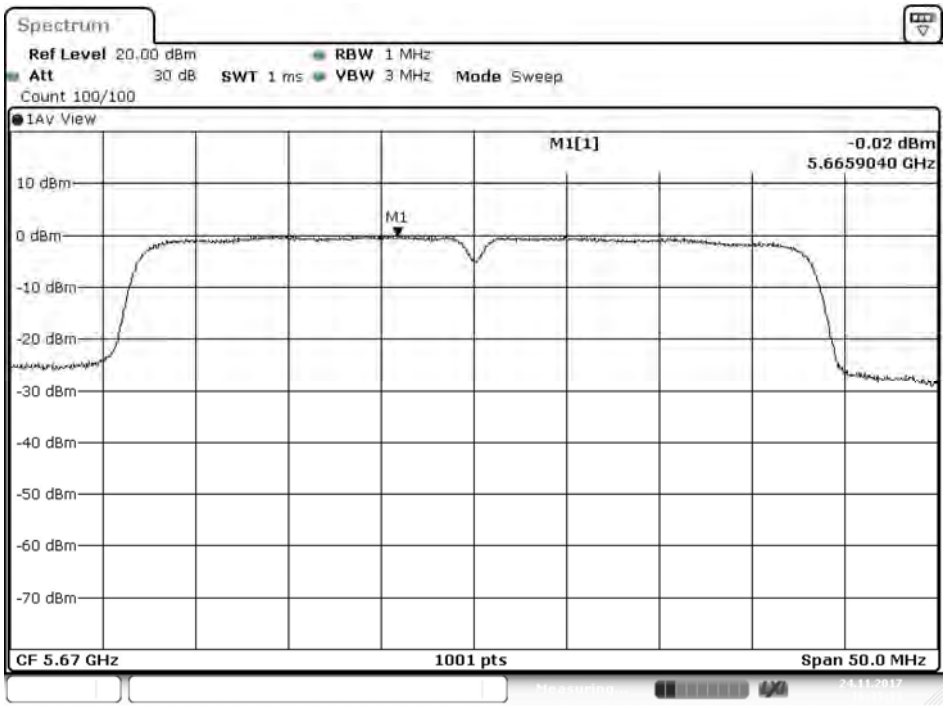
Date: 24.NOV.2017 16:28:42

Channel 110



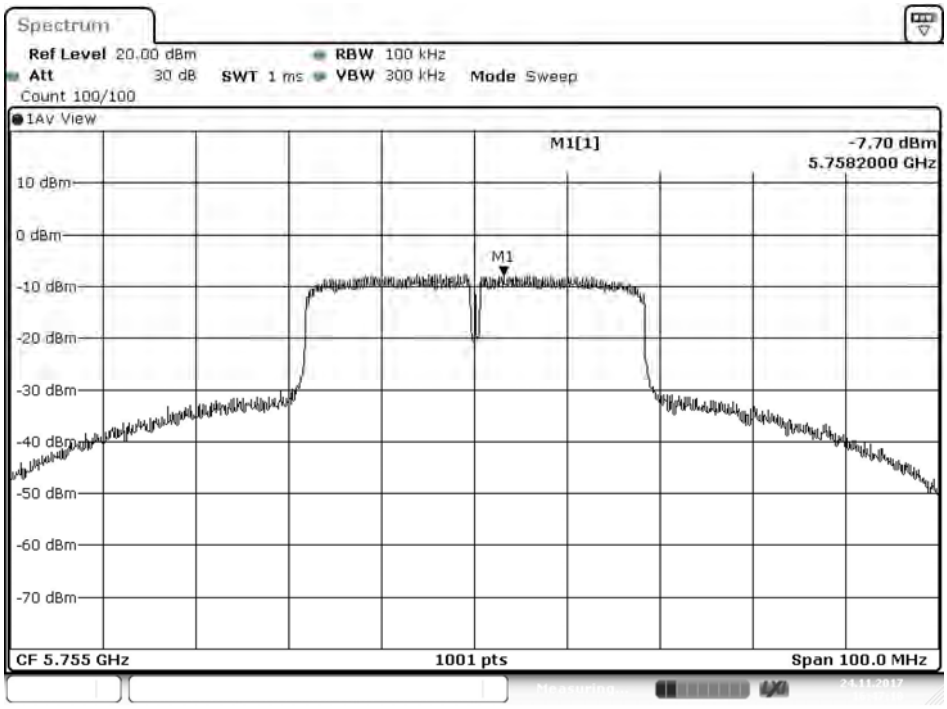
Date: 24.NOV.2017 16:31:31

Channel 134



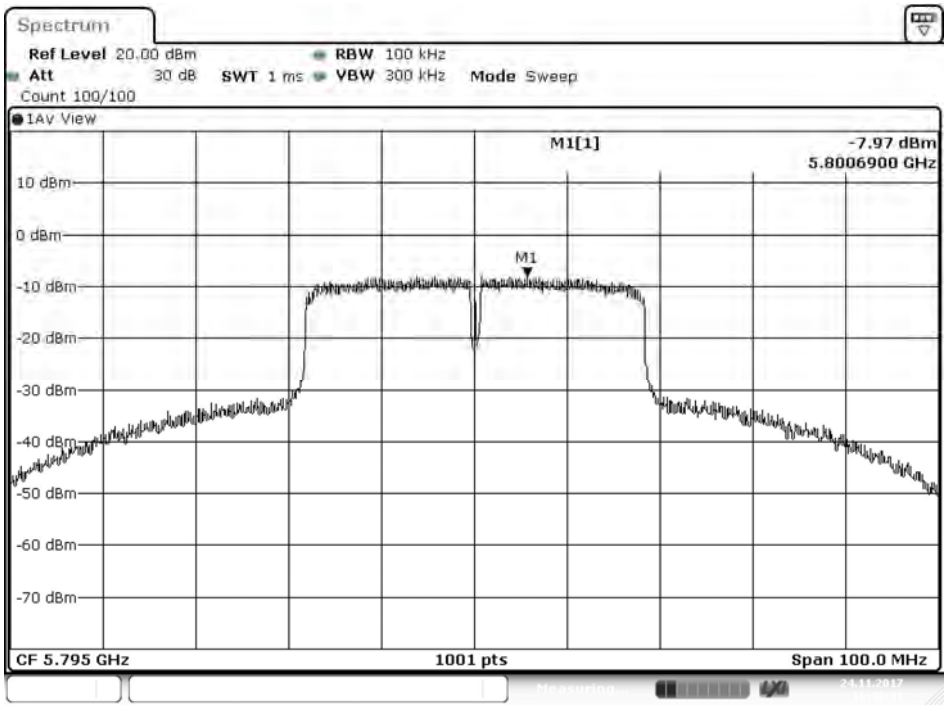
Date: 24.NOV.2017 16:35:33

Channel 151



Date: 24.NOV.2017 16:47:10

Channel 159

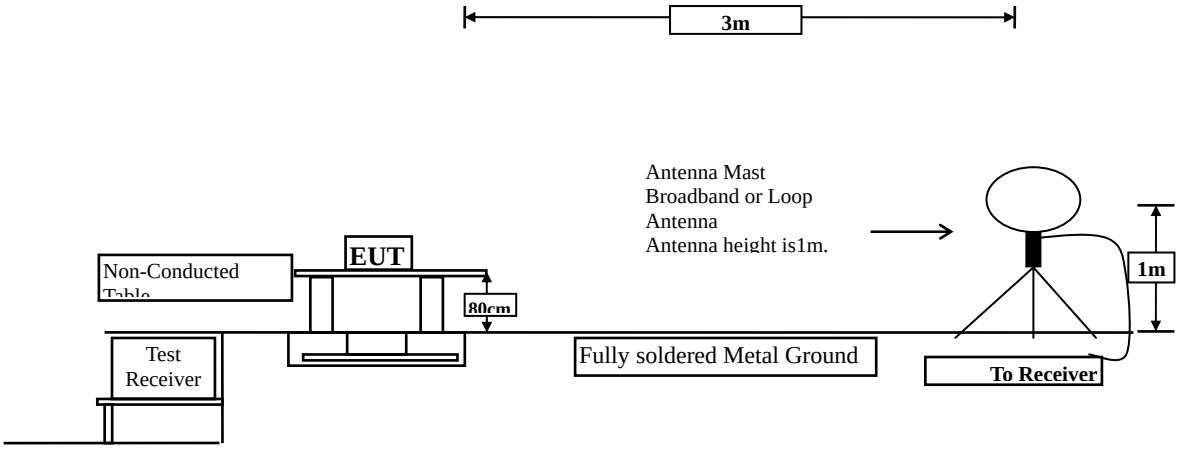


Date: 24.NOV.2017 16:48:31

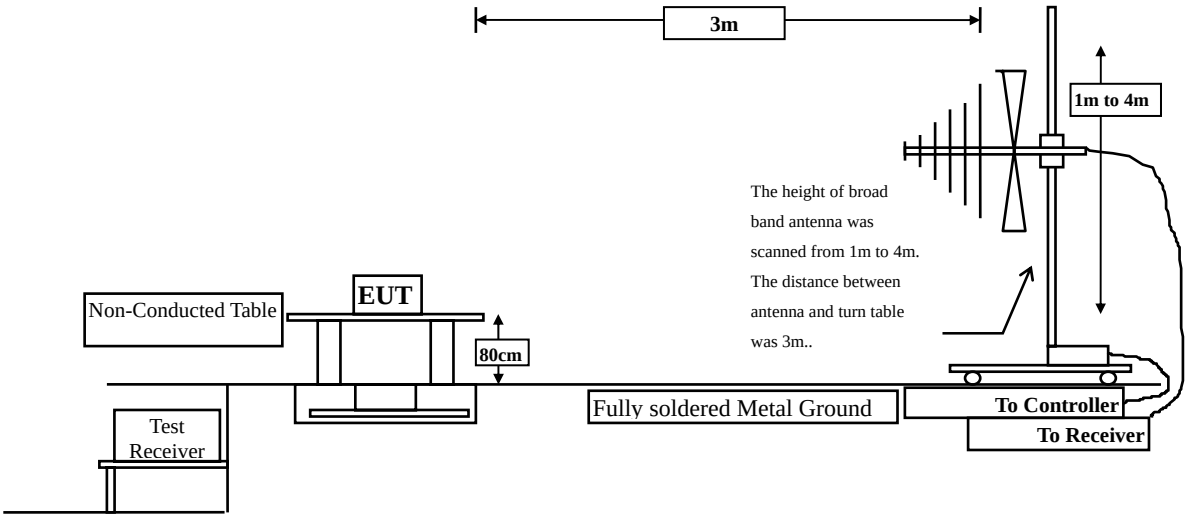
5. Radiated Emission

5.1. Test Setup

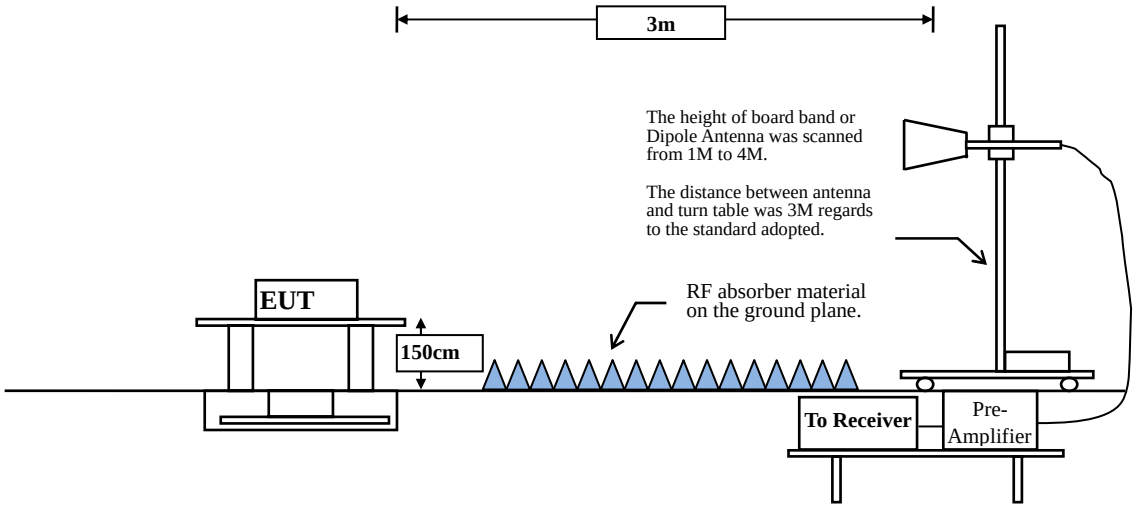
Radiated Emission Under 30MHz



Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



5.2. Limits

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

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	Field strength (microvolts/meter)	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Remarks: E field strength (dBμV/m) = 20 log E field strength (uV/m)

5.3. Test Procedure

The EUT was setup according to ANSI C63.10, 2013 and tested according to FCC KDB-789033 test procedure for compliance to FCC 47CFR 15. 407 requirements.

Measuring the frequency range below 1GHz, the EUT is placed on a turn table which is 0.8 meter above ground,when measuring the frequency range above 1GHz, the EUT is placed on a turn table which is 1.5 meter above ground.

The turn table is rotated 360 degrees to determine the position of the maximum emission level.

The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2013 on radiated measurement.

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

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

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

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

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

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW ≥ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW = 10Hz, when duty cycle ≥ 98 %

VBW ≥ 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	100	--	--	10
802.11n20	100	--	--	10
802.11n40	100	--	--	10

Note: Duty Cycle Refer to Section 9

5.4. Uncertainty

Horizontal polarization：

30-300MHz: ±4.08dB；300M-1GHz: ±3.86dB；1-18GHz: ±3.77dB；18-40GHz: ±3.98dB

Vertical polarization：

30-300MHz: ±4.81dB；300M-1GHz: ±3.87dB；1-18GHz：±3.83dB；18-40GHz: ±3.98dB

5.5. Test Result of Radiated Emission

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10360.000	0.102	62.030	62.132	-11.868	74.000
15540.000	5.820	49.360	55.180	-18.820	74.000
Average Detector:					
10360.000	0.102	48.210	48.312	-5.688	54.000
15540.000	5.820	34.410	40.230	-13.770	54.000
Vertical					
Peak Detector:					
10360.000	0.102	59.800	59.902	-14.098	74.000
15540.000	5.820	55.090	60.910	-13.090	74.000
Average Detector:					
10360.000	0.102	46.670	46.772	-7.228	54.000
15540.000	5.820	40.700	46.520	-7.480	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10440.000	0.149	62.760	62.909	-11.091	74.000
15660.000	6.004	54.440	60.444	-13.556	74.000
Average Detector:					
10440.000	0.149	48.960	49.109	-4.891	54.000
15660.000	6.004	40.210	46.214	-7.786	54.000
Vertical					
Peak Detector:					
10440.000	0.149	60.960	61.109	-12.891	74.000
15660.000	6.004	57.360	63.364	-10.636	74.000
Average Detector:					
10440.000	0.149	47.850	47.999	-6.001	54.000
15660.000	6.004	43.610	49.614	-4.386	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10480.000	0.181	61.490	61.670	-12.330	74.000
15720.000	6.086	55.050	61.136	-12.864	74.000
Average					
Detector:					
10480.000	0.181	48.480	48.660	-5.340	54.000
15720.000	6.086	41.600	47.686	-6.314	54.000
Vertical					
Peak Detector:					
10480.000	0.181	60.050	60.230	-13.770	74.000
15720.000	6.086	57.860	63.946	-10.054	74.000
Average					
Detector:					
10480.000	0.181	46.750	46.930	-7.070	54.000
15720.000	6.086	44.630	50.716	-3.284	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5260MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10520.000	0.205	62.380	62.585	-11.415	74.000
15780.000	6.231	55.460	61.691	-12.309	74.000
Average					
Detector:					
10520.000	0.205	40.680	40.885	-13.115	54.000
15780.000	6.231	41.770	48.001	-5.999	54.000
Vertical					
Peak Detector:					
10520.000	0.205	62.620	62.825	-11.175	74.000
15780.000	6.231	58.250	64.481	-9.519	74.000
Average					
Detector:					
10520.000	0.205	49.150	49.355	-4.645	54.000
15780.000	6.231	44.180	50.411	-3.589	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10600.000	0.378	64.790	65.168	-8.832	74.000
15900.000	6.428	54.770	61.198	-12.802	74.000
Average Detector:					
10600.000	0.378	51.110	51.488	-2.512	54.000
15900.000	6.428	40.900	47.328	-6.672	54.000
Vertical					
Peak Detector:					
10600.000	0.378	65.440	65.818	-8.182	74.000
15900.000	6.428	54.670	61.098	-12.902	74.000
Average Detector:					
10600.000	0.378	51.810	52.188	-1.812	54.000
15900.000	6.428	40.780	47.208	-6.792	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10640.000	0.516	65.830	66.347	-7.653	74.000
15960.000	6.467	53.830	60.297	-13.703	74.000
Average Detector:					
10640.000	0.516	51.990	52.507	-1.493	54.000
15960.000	6.467	39.390	45.857	-8.143	54.000
Vertical					
Peak Detector:					
10640.000	0.516	66.330	66.847	-7.153	74.000
15960.000	6.467	55.270	61.737	-12.263	74.000
Average Detector:					
10640.000	0.516	52.770	53.287	-0.713	54.000
15960.000	6.467	41.870	48.337	-5.663	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11000.000	1.104	56.700	57.804	-16.196	74.000
16500.000	7.369	44.720	52.089	-21.911	74.000
Average Detector:					
11000.000	1.104	42.280	43.384	-10.616	54.000
Vertical					
Peak Detector:					
11000.000	1.104	62.250	63.354	-10.646	74.000
16500.000	7.369	47.290	54.659	-19.341	74.000
Average Detector:					
11000.000	1.104	48.780	49.884	-4.116	54.000
16500.000	7.369	32.200	39.569	-14.431	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11160.000	1.072	60.770	61.842	-12.158	74.000
16740.000	7.758	47.130	54.888	-19.112	74.000
Average Detector:					
11160.000	1.072	46.940	48.012	-5.988	54.000
16740.000	7.758	33.340	41.098	-12.902	54.000
Vertical					
Peak Detector:					
11160.000	1.072	65.200	66.272	-7.728	74.000
16740.000	7.758	51.210	58.968	-15.032	74.000
Average Detector:					
11160.000	1.072	51.830	52.902	-1.098	54.000
16740.000	7.758	37.050	44.808	-9.192	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11400.000	1.388	57.530	58.918	-15.082	74.000
17100.000	7.736	46.230	53.966	-20.034	74.000
Average Detector:					
11400.000	1.388	43.530	44.918	-9.082	54.000
Vertical					
Peak Detector:					
11400.000	1.388	61.000	62.388	-11.612	74.000
17100.000	7.736	48.510	56.246	-17.754	74.000
Average Detector:					
11400.000	1.388	47.210	48.598	-5.402	54.000
17100.000	7.736	34.490	42.226	-11.774	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11490.000	1.619	60.980	62.599	-11.401	74.000
17235.000	7.425	46.170	53.595	-20.405	74.000
Average Detector:					
11490.000	1.619	47.290	48.909	-5.091	54.000
Vertical Peak Detector:					
11490.000	1.619	60.660	62.279	-11.721	74.000
17235.000	7.425	50.740	58.165	-15.835	74.000
Average Detector:					
11490.000	1.619	47.170	48.789	-5.211	54.000
17235.000	7.425	36.420	43.845	-10.155	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11570.000	1.728	59.660	61.388	-12.612	74.000
17355.000	7.402	44.310	51.712	-22.288	74.000
Average					
Detector:					
11570.000	1.728	46.070	47.798	-6.202	54.000
Vertical					
Peak Detector:					
11570.000	1.728	63.990	65.718	-8.282	74.000
17355.000	7.402	48.210	55.612	-18.388	74.000
Average					
Detector:					
11570.000	1.728	50.820	52.548	-1.452	54.000
17355.000	7.402	33.930	41.332	-12.668	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)
Test Date : 2017/11/19

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11650.000	1.846	57.060	58.906	-15.094	74.000
17475.000	7.548	44.230	51.777	-22.223	74.000
Average Detector:					
11650.000	1.846	43.620	45.466	-8.534	54.000
Vertical Peak Detector:					
11650.000	1.846	63.180	65.026	-8.974	74.000
17475.000	7.548	48.050	55.597	-18.403	74.000
Average Detector:					
11650.000	1.846	50.410	52.256	-1.744	54.000
17475.000	7.548	33.330	40.877	-13.123	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2017/11/20

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10360.000	0.102	63.400	63.502	-10.498	74.000
15540.000	5.820	52.060	57.880	-16.120	74.000
Average Detector:					
10360.000	0.102	48.460	48.562	-5.438	54.000
15540.000	5.820	35.680	41.500	-12.500	54.000
Vertical					
Peak Detector:					
10360.000	0.102	61.430	61.532	-12.468	74.000
15540.000	5.820	58.220	64.040	-9.960	74.000
Average Detector:					
10360.000	0.102	46.070	46.172	-7.828	54.000
15540.000	5.820	42.440	48.260	-5.740	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
Test Date : 2017/11/20

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10440.000	0.149	63.810	63.959	-10.041	74.000
15660.000	6.004	55.700	61.704	-12.296	74.000
Average Detector:					
10440.000	0.149	48.650	48.799	-5.201	54.000
15660.000	6.004	38.110	44.114	-9.886	54.000
Vertical					
Peak Detector:					
10440.000	0.149	63.140	63.289	-10.711	74.000
15660.000	6.004	61.060	67.064	-6.936	74.000
Average Detector:					
10440.000	0.149	48.020	48.169	-5.831	54.000
15660.000	6.004	44.700	50.704	-3.296	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10480.000	0.181	62.960	63.140	-10.860	74.000
15720.000	6.086	54.690	60.776	-13.224	74.000
Average Detector:					
10480.000	0.181	47.950	48.130	-5.870	54.000
15720.000	6.086	39.090	45.176	-8.824	54.000
Vertical					
Peak Detector:					
10480.000	0.181	52.580	52.760	-1.240	74.000
15720.000	6.086	59.890	65.976	-8.024	74.000
Average Detector:					
10480.000	0.181	37.860	38.040	-15.960	54.000
15720.000	6.086	42.640	48.726	-5.274	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5260MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10520.000	0.205	63.010	63.215	-10.785	74.000
15780.000	6.231	54.420	60.651	-13.349	74.000
Average Detector:					
10520.000	0.205	47.950	48.155	-5.845	54.000
15780.000	6.231	38.500	44.731	-9.269	54.000
Vertical					
Peak Detector:					
10520.000	0.205	63.210	63.415	-10.585	74.000
15780.000	6.231	61.230	67.461	-6.539	74.000
Average Detector:					
10520.000	0.205	48.480	48.685	-5.315	54.000
15780.000	6.231	45.340	51.571	-2.429	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10600.000	0.378	64.770	65.148	-8.852	74.000
15900.000	6.428	54.480	60.908	-13.092	74.000
Average Detector:					
10600.000	0.378	49.780	50.158	-3.842	54.000
15900.000	6.428	37.700	44.128	-9.872	54.000
Vertical					
Peak Detector:					
10600.000	0.378	65.640	66.018	-7.982	74.000
15900.000	6.428	63.350	69.778	-4.222	74.000
Average Detector:					
10600.000	0.378	50.830	51.208	-2.792	54.000
15900.000	6.428	47.310	53.738	-0.262	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10640.000	0.516	64.300	64.817	-9.183	74.000
15960.000	6.467	51.650	58.117	-15.883	74.000
Average Detector:					
10640.000	0.516	49.200	49.717	-4.283	54.000
15960.000	6.467	35.710	42.177	-11.823	54.000
Vertical					
Peak Detector:					
10640.000	0.516	65.600	66.117	-7.883	74.000
15960.000	6.467	61.180	67.647	-6.353	74.000
Average Detector:					
10640.000	0.516	50.450	50.967	-3.033	54.000
15960.000	6.467	44.480	50.947	-3.053	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11000.000	1.104	57.710	58.814	-15.186	74.000
Average Detector:					
11000.000	1.104	41.170	42.274	-11.726	54.000
Vertical					
Peak Detector:					
11000.000	1.104	63.150	64.254	-9.746	74.000
16500.000	7.369	50.130	57.499	-16.501	74.000
Average Detector:					
11000.000	1.104	47.890	48.994	-5.006	54.000
16500.000	7.369	33.940	41.309	-12.691	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11600.000	1.777	63.060	64.837	-9.163	74.000
16740.000	7.758	51.650	59.408	-14.592	74.000
Average Detector:					
11600.000	1.777	47.110	48.887	-5.113	54.000
16740.000	7.758	35.310	43.068	-10.932	54.000
Vertical					
Peak Detector:					
11160.000	1.072	67.310	68.382	-5.618	74.000
16740.000	7.758	55.450	63.208	-10.792	74.000
Average Detector:					
11160.000	1.072	52.770	53.842	-0.158	54.000
16740.000	7.758	39.280	47.038	-6.962	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11400.000	1.388	57.260	58.648	-15.352	74.000
17100.000	7.736	45.880	53.616	-20.384	74.000
Average Detector:					
11400.000	1.388	41.280	42.668	-11.332	54.000
Vertical					
Peak Detector:					
11400.000	1.388	64.890	66.278	-7.722	74.000
17100.000	7.736	50.080	57.816	-16.184	74.000
Average Detector:					
11400.000	1.388	49.970	51.358	-2.642	54.000
17100.000	7.736	34.320	42.056	-11.944	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11490.000	1.619	63.700	65.319	-8.681	74.000
17235.000	7.425	46.000	53.425	-20.575	74.000
Average Detector:					
11490.000	1.619	48.100	49.719	-4.281	54.000
Vertical					
Peak Detector:					
11490.000	1.619	65.210	66.829	-7.171	74.000
17235.000	7.425	51.000	58.425	-15.575	74.000
Average Detector:					
11490.000	1.619	50.700	52.319	-1.681	54.000
17235.000	7.425	35.200	42.625	-11.375	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
11570.000	1.728	61.660	63.388	-10.612	74.000
17355.000	7.402	45.400	52.802	-21.198	74.000
Average					
Detector:					
11570.000	1.728	46.210	47.938	-6.062	54.000
Vertical					
Peak Detector:					
11570.000	1.728	64.290	66.018	-7.982	74.000
17355.000	7.402	50.030	57.432	-16.568	74.000
Average					
Detector:					
11570.000	1.728	49.540	51.268	-2.732	54.000
17355.000	7.402	34.220	41.622	-12.378	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11650.000	1.846	59.820	61.666	-12.334	74.000
17475.000	7.548	44.030	51.577	-22.423	74.000
Average Detector:					
11650.000	1.846	44.510	46.356	-7.644	54.000
Vertical Peak Detector:					
11650.000	1.846	64.200	66.046	-7.954	74.000
17475.000	7.548	49.440	56.987	-17.013	74.000
Average Detector:					
11650.000	1.846	48.940	50.786	-3.214	54.000
17475.000	7.548	33.300	40.847	-13.153	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10380.000	0.131	51.800	51.931	-22.069	74.000
15570.000	5.837	42.520	48.357	-25.643	74.000
Average Detector:					
--					54.000
Vertical					
Peak Detector:					
10380.000	0.131	51.090	51.221	-22.779	74.000
15570.000	5.837	45.240	51.077	-22.923	74.000
Average Detector:					
--					54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
Peak Detector:					
10460.000	0.150	58.080	58.230	-15.770	74.000
15690.000	6.077	49.360	55.437	-18.563	74.000
Average Detector:					
10460.000	0.150	45.580	45.730	-8.270	54.000
15690.000	6.077	35.860	41.937	-12.063	54.000
Vertical					
Peak Detector:					
10460.000	0.150	57.440	57.590	-16.410	54.000
15690.000	6.077	53.220	59.297	-14.703	54.000
Average Detector:					
10460.000	0.150	44.910	45.060	-8.940	54.000
15690.000	6.077	39.630	45.707	-8.293	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10540.000	0.296	58.330	58.626	-15.374	74.000
15810.000	6.276	49.700	55.976	-18.024	74.000
Average Detector:					
10540.000	0.296	46.200	46.496	-7.504	54.000
15810.000	6.276	35.940	42.216	-11.784	54.000
Vertical					
Peak Detector:					
10540.000	0.296	59.230	59.526	-14.474	74.000
15810.000	6.276	54.630	60.906	-13.094	74.000
Average Detector:					
10540.000	0.296	47.280	47.576	-6.424	54.000
15810.000	6.276	41.060	47.336	-6.664	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
10620.000	0.444	51.910	52.354	-21.646	74.000
15930.000	6.444	42.930	49.374	-24.626	74.000
Average Detector:					
--					54.000
Vertical					
Peak Detector:					
10620.000	0.444	54.740	55.184	-18.816	74.000
15930.000	6.444	44.950	51.394	-22.606	74.000
Average Detector:					
10620.000	0.444	40.600	41.044	-12.956	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11020.000	1.101	48.790	49.891	-24.109	74.000
16530.000	7.419	42.460	49.879	-24.121	74.000
Average Detector:					
--					54.000
Vertical					
Peak Detector:					
11020.000	1.101	53.020	54.121	-19.879	74.000
16530.000	7.419	42.590	50.009	-23.991	74.000
Average Detector:					
11020.000	1.101	40.160	41.261	-12.739	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11100.000	1.086	57.970	59.056	-14.944	74.000
16650.000	7.666	45.310	52.975	-21.025	74.000
Average Detector:					
11100.000	1.086	45.460	46.546	-7.454	54.000
Vertical					
Peak Detector:					
11100.000	1.086	61.910	62.996	-11.004	74.000
16650.000	7.666	49.950	57.615	-16.385	74.000
Average Detector:					
11100.000	1.086	49.860	50.946	-3.054	54.000
16650.000	7.666	36.390	44.055	-9.945	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)
Test Date : 2017/11/21

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
Peak Detector:					
11340.000	1.272	52.520	53.792	-20.208	74.000
17010.000	7.834	43.000	50.835	-23.165	74.000
Average Detector:					
--					54.000
Vertical					
Peak Detector:					
11340.000	1.272	59.380	60.652	-13.348	74.000
17010.000	7.834	44.930	52.765	-21.235	74.000
Average Detector:					
11340.000	1.272	46.850	48.122	-5.878	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal Peak Detector:					
11510.000	1.620	62.150	63.771	-10.229	74.000
17265.000	7.391	49.260	56.652	-17.348	74.000
Average Detector:					
11510.000	1.620	46.810	48.431	-5.569	54.000
17265.000	7.391	34.650	42.042	-11.958	54.000
Vertical Peak Detector:					
11510.000	1.620	61.600	63.221	-10.779	74.000
Average Detector:					
11510.000	1.620	48.170	49.791	-4.209	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : Harmonic Radiated Emission Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5795MHz)
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal Peak Detector:					
11590.000	1.753	61.390	63.143	-10.857	74.000
17385.000	7.419	46.120	53.539	-20.461	74.000
Average Detector:					
11590.000	1.753	47.900	49.653	-4.347	54.000
17385.000	7.419	33.230	40.649	-13.351	54.000
Vertical Peak Detector:					
11590.000	1.753	59.510	61.263	-12.737	74.000
Average Detector:					
11590.000	1.753	45.330	47.083	-6.917	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz) _ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
189.080	-13.533	55.254	41.721	-1.779	43.500
399.570	-8.084	49.630	41.546	-4.454	46.000
600.360	-4.053	37.161	33.108	-12.892	46.000
720.640	-2.652	37.274	34.623	-11.377	46.000
800.180	-1.714	44.690	42.975	-3.025	46.000
960.230	0.354	40.967	41.321	-12.679	54.000
Vertical					
51.340	-11.068	46.472	35.403	-4.597	40.000
188.110	-13.430	52.456	39.026	-4.474	43.500
399.570	-8.084	42.313	34.229	-11.771	46.000
600.360	-4.053	34.116	30.063	-15.937	46.000
800.180	-1.714	38.989	37.274	-8.726	46.000
960.230	0.354	37.328	37.682	-16.318	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz) _ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
79.470	-15.522	47.467	31.944	-8.056	40.000
188.110	-13.430	55.383	41.953	-1.547	43.500
399.570	-8.084	52.717	44.633	-1.367	46.000
600.360	-4.053	36.373	32.320	-13.680	46.000
800.180	-1.714	40.211	38.496	-7.504	46.000
960.230	0.354	40.573	40.927	-13.073	54.000
Vertical					
59.100	-12.032	49.579	37.547	-2.453	40.000
188.110	-13.430	52.632	39.202	-4.298	43.500
399.570	-8.084	43.205	35.121	-10.879	46.000
600.360	-4.053	33.950	29.897	-16.103	46.000
800.180	-1.714	39.265	37.550	-8.450	46.000
960.230	0.354	37.414	37.768	-16.232	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz) _ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
79.470	-15.522	48.691	33.168	-6.832	40.000
188.110	-13.430	52.693	39.263	-4.237	43.500
399.570	-8.084	50.613	42.529	-3.471	46.000
600.360	-4.053	37.150	33.097	-12.903	46.000
800.180	-1.714	41.894	40.179	-5.821	46.000
960.230	0.354	39.580	39.934	-14.066	54.000
Vertical					
37.760	-11.445	48.085	36.640	-3.360	40.000
188.110	-13.430	55.393	41.963	-1.537	43.500
399.570	-8.084	50.613	42.529	-3.471	46.000
600.360	-4.053	37.150	33.097	-12.903	46.000
800.180	-1.714	41.894	40.179	-5.821	46.000
960.230	0.354	39.580	39.934	-14.066	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz) _ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
188.110	-13.430	55.296	41.866	-1.634	43.500
399.570	-8.084	52.444	44.360	-1.640	46.000
480.080	-6.353	41.417	35.064	-10.936	46.000
600.360	-4.053	36.718	32.665	-13.335	46.000
800.180	-1.714	41.249	39.534	-6.466	46.000
960.230	0.354	40.138	40.492	-13.508	54.000
Vertical					
80.440	-15.716	54.020	38.304	-1.696	40.000
188.110	-13.430	52.369	38.939	-4.561	43.500
399.570	-8.084	42.225	34.141	-11.859	46.000
600.360	-4.053	34.046	29.993	-16.007	46.000
800.180	-1.714	42.241	40.526	-5.474	46.000
960.230	0.354	37.610	37.964	-16.036	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
189.080	-13.533	55.635	42.102	-1.398	43.500
399.570	-8.084	50.902	42.818	-3.182	46.000
480.080	-6.353	41.727	35.374	-10.626	46.000
616.850	-3.954	36.157	32.203	-13.797	46.000
800.180	-1.714	41.856	40.141	-5.859	46.000
960.230	0.354	41.307	41.661	-12.339	54.000
Vertical					
37.760	-11.445	48.126	36.681	-3.319	40.000
190.050	-13.631	52.396	38.765	-4.735	43.500
399.570	-8.084	42.230	34.146	-11.854	46.000
600.360	-4.053	33.734	29.681	-16.319	46.000
720.640	-2.652	37.518	34.867	-11.133	46.000
960.230	0.354	37.697	38.051	-15.949	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
79.470	-15.522	47.903	32.380	-7.620	40.000
188.110	-13.430	55.182	41.752	-1.748	43.500
399.570	-8.084	51.903	43.819	-2.181	46.000
600.360	-4.053	37.286	33.233	-12.767	46.000
800.180	-1.714	40.014	38.299	-7.701	46.000
960.230	0.354	40.133	40.487	-13.513	54.000
Vertical					
57.160	-11.792	47.042	35.251	-4.749	40.000
187.140	-13.327	52.204	38.877	-4.623	43.500
399.570	-8.084	43.462	35.378	-10.622	46.000
600.360	-4.053	34.414	30.361	-15.639	46.000
800.180	-1.714	40.502	38.787	-7.213	46.000
960.230	0.354	38.360	38.714	-15.286	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
189.080	-13.533	55.583	42.050	-1.450	43.500
399.570	-8.084	51.886	43.802	-2.198	46.000
514.030	-5.805	37.034	31.229	-14.771	46.000
700.270	-3.046	36.932	33.886	-12.114	46.000
800.180	-1.714	40.095	38.380	-7.620	46.000
960.230	0.354	40.603	40.957	-13.043	54.000
Vertical					
79.470	-15.522	52.700	37.177	-2.823	40.000
187.140	-13.327	51.999	38.672	-4.828	43.500
399.570	-8.084	42.245	34.161	-11.839	46.000
724.520	-2.577	39.645	37.068	-8.932	46.000
800.180	-1.714	43.418	41.703	-4.297	46.000
960.230	0.354	38.281	38.635	-15.365	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
79.470	-15.522	46.318	30.795	-9.205	40.000
189.080	-13.533	55.352	41.819	-1.681	43.500
399.570	-8.084	51.185	43.101	-2.899	46.000
600.360	-4.053	36.842	32.789	-13.211	46.000
800.180	-1.714	43.817	42.102	-3.898	46.000
960.230	0.354	40.772	41.126	-12.874	54.000
Vertical					
50.370	-10.947	47.907	36.960	-3.040	40.000
190.050	-13.631	52.889	39.258	-4.242	43.500
399.570	-8.084	41.862	33.778	-12.222	46.000
600.360	-4.053	33.789	29.736	-16.264	46.000
800.180	-1.714	39.758	38.043	-7.957	46.000
960.230	0.354	37.312	37.666	-16.334	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBμV	dBμV/m	dB	dBμV/m
Horizontal					
188.110	-13.430	55.603	42.173	-1.327	43.500
399.570	-8.084	50.699	42.615	-3.385	46.000
600.360	-4.053	36.191	32.138	-13.862	46.000
720.640	-2.652	36.173	33.522	-12.478	46.000
800.180	-1.714	41.660	39.945	-6.055	46.000
960.230	0.354	40.501	40.855	-13.145	54.000
Vertical					
39.700	-11.167	47.105	35.937	-4.063	40.000
189.080	-13.533	52.492	38.959	-4.541	43.500
399.570	-8.084	42.969	34.885	-11.115	46.000
600.360	-4.053	33.676	29.623	-16.377	46.000
800.180	-1.714	39.362	37.647	-8.353	46.000
960.230	0.354	36.162	36.516	-17.484	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
189.080	-13.533	55.301	41.768	-1.732	43.500
399.570	-8.084	51.404	43.320	-2.680	46.000
480.080	-6.353	41.105	34.752	-11.248	46.000
700.270	-3.046	35.813	32.767	-13.233	46.000
800.180	-1.714	42.135	40.420	-5.580	46.000
960.230	0.354	40.080	40.434	-13.566	54.000
Vertical					
56.190	-11.671	49.710	38.039	-1.961	40.000
188.110	-13.430	52.032	38.602	-4.898	43.500
399.570	-8.084	41.207	33.123	-12.877	46.000
600.360	-4.053	33.127	29.074	-16.926	46.000
800.180	-1.714	41.799	40.084	-5.916	46.000
960.230	0.354	36.895	37.249	-16.751	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
56.190	-11.671	49.923	38.252	-1.748	40.000
188.110	-13.430	52.032	38.602	-4.898	43.500
399.570	-8.084	50.891	42.807	-3.193	46.000
660.500	-3.606	35.538	31.932	-14.068	46.000
800.180	-1.714	41.799	40.084	-5.916	46.000
960.230	0.354	38.621	38.975	-15.025	54.000
Vertical					
41.640	-11.023	47.293	36.270	-3.730	40.000
188.110	-13.430	52.121	38.691	-4.809	43.500
399.570	-8.084	43.022	34.938	-11.062	46.000
600.360	-4.053	34.492	30.439	-15.561	46.000
800.180	-1.714	41.895	40.180	-5.820	46.000
960.230	0.354	36.346	36.700	-17.300	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
_ Adapter: ATM020-W050U
Test Date : 2017/11/24

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
188.110	-13.430	55.148	41.718	-1.782	43.500
399.570	-8.084	52.730	44.646	-1.354	46.000
600.360	-4.053	37.301	33.248	-12.752	46.000
720.640	-2.652	37.063	34.412	-11.588	46.000
800.180	-1.714	40.986	39.271	-6.729	46.000
960.230	0.354	39.905	40.259	-13.741	54.000
Vertical					
56.190	-11.671	49.271	37.600	-2.400	40.000
188.110	-13.430	52.249	38.819	-4.681	43.500
399.570	-8.084	43.617	35.533	-10.467	46.000
600.360	-4.053	34.316	30.263	-15.737	46.000
800.180	-1.714	41.720	40.005	-5.995	46.000
960.230	0.354	37.511	37.865	-16.135	54.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
148.087	-11.165	43.092	31.927	-11.573	43.500
346.304	-9.295	48.549	39.254	-6.746	46.000
488.290	-6.216	33.959	27.743	-18.257	46.000
644.333	-3.786	28.747	24.961	-21.039	46.000
772.261	-1.927	28.452	26.526	-19.474	46.000
900.188	-0.318	29.143	28.825	-17.175	46.000
Vertical					
124.188	-12.990	33.313	20.323	-23.177	43.500
245.087	-12.188	40.303	28.115	-17.885	46.000
436.275	-7.187	36.225	29.038	-16.962	46.000
613.406	-3.974	28.696	24.722	-21.278	46.000
762.420	-1.996	28.843	26.847	-19.153	46.000
925.493	-0.043	28.187	28.144	-17.856	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
135.435	-11.872	52.119	40.247	-3.253	43.500
235.246	-12.603	47.913	35.310	-10.690	46.000
406.754	-7.911	43.658	35.747	-10.253	46.000
562.797	-4.935	32.281	27.346	-18.654	46.000
711.812	-2.824	33.302	30.479	-15.521	46.000
846.768	-1.016	29.803	28.788	-17.212	46.000
Vertical					
145.275	-11.262	47.239	35.978	-7.522	43.500
297.101	-10.456	41.737	31.281	-14.719	46.000
425.029	-7.461	40.317	32.857	-13.143	46.000
552.957	-5.169	32.091	26.922	-19.078	46.000
716.029	-2.741	35.466	32.725	-13.275	46.000
872.072	-0.681	33.891	33.210	-12.790	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
173.391	-11.675	45.632	33.957	-9.543	43.500
308.348	-10.165	38.789	28.625	-17.375	46.000
478.449	-6.380	40.338	33.959	-12.041	46.000
662.609	-3.577	35.940	32.364	-13.636	46.000
776.478	-1.894	29.423	27.528	-18.472	46.000
883.319	-0.536	33.815	33.279	-12.721	46.000
Vertical					
159.333	-10.873	43.383	32.510	-10.990	43.500
364.580	-8.881	44.499	35.619	-10.381	46.000
492.507	-6.146	40.144	33.998	-12.002	46.000
648.551	-3.761	37.112	33.351	-12.649	46.000
804.594	-1.648	30.708	29.060	-16.940	46.000
946.580	0.180	29.623	29.803	-16.197	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz) _ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
152.304	-11.044	43.500	32.456	-11.044	43.500
294.290	-10.549	41.508	30.960	-15.040	46.000
478.449	-6.380	40.338	33.959	-12.041	46.000
641.522	-3.802	33.948	30.146	-15.854	46.000
769.449	-1.946	29.553	27.607	-18.393	46.000
918.464	-0.121	30.042	29.921	-16.079	46.000
Vertical					
159.333	-10.873	43.895	33.022	-10.478	43.500
371.609	-8.721	44.029	35.308	-10.692	46.000
492.507	-6.146	40.144	33.998	-12.002	46.000
655.580	-3.675	35.543	31.868	-14.132	46.000
783.507	-1.843	29.999	28.156	-17.844	46.000
883.319	-0.536	33.815	33.279	-12.721	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
152.304	-11.044	43.500	32.456	-11.044	43.500
357.551	-9.038	44.055	35.017	-10.983	46.000
527.652	-5.590	36.920	31.329	-14.671	46.000
648.551	-3.761	37.112	33.351	-12.649	46.000
762.420	-1.996	30.300	28.304	-17.696	46.000
890.348	-0.445	32.649	32.204	-13.796	46.000
Vertical					
166.362	-11.084	45.804	34.720	-8.780	43.500
371.609	-8.721	44.029	35.308	-10.692	46.000
534.681	-5.481	35.174	29.693	-16.307	46.000
662.609	-3.577	35.940	32.364	-13.636	46.000
776.478	-1.894	29.885	27.990	-18.010	46.000
883.319	-0.536	33.815	33.279	-12.721	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
159.333	-10.873	43.895	33.022	-10.478	43.500
287.261	-10.752	39.941	29.189	-16.811	46.000
471.420	-6.495	39.240	32.745	-13.255	46.000
627.464	-3.889	31.024	27.134	-18.866	46.000
769.449	-1.946	29.553	27.607	-18.393	46.000
918.464	-0.121	30.042	29.921	-16.079	46.000
Vertical					
159.333	-10.873	33.899	23.026	-20.474	43.500
357.551	-9.038	44.055	35.017	-10.983	46.000
527.652	-5.590	36.920	31.329	-14.671	46.000
662.609	-3.577	35.940	32.364	-13.636	46.000
783.507	-1.843	29.999	28.156	-17.844	46.000
918.464	-0.121	30.042	29.921	-16.079	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
159.333	-10.873	43.895	33.022	-10.478	43.500
336.464	-9.521	46.001	36.480	-9.520	46.000
506.565	-5.921	38.027	32.106	-13.894	46.000
641.522	-3.802	33.948	30.146	-15.854	46.000
783.507	-1.843	29.999	28.156	-17.844	46.000
932.522	0.032	30.898	30.931	-15.069	46.000
Vertical					
166.362	-11.084	45.804	34.720	-8.780	43.500
301.319	-10.329	41.334	31.005	-14.995	46.000
457.362	-6.727	38.401	31.674	-14.326	46.000
599.348	-4.071	32.673	28.602	-17.398	46.000
741.333	-2.251	30.491	28.240	-17.760	46.000
918.464	-0.121	30.042	29.921	-16.079	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
166.362	-11.084	45.804	34.720	-8.780	43.500
294.290	-10.549	41.508	30.960	-15.040	46.000
443.304	-7.016	39.730	32.714	-13.286	46.000
599.348	-4.071	32.673	28.602	-17.398	46.000
755.391	-2.045	29.946	27.901	-18.099	46.000
911.435	-0.197	30.309	30.112	-15.888	46.000
Vertical					
166.362	-11.084	40.224	29.140	-14.360	43.500
301.319	-10.329	41.334	31.005	-14.995	46.000
492.507	-6.146	40.144	33.998	-12.002	46.000
648.551	-3.761	37.112	33.351	-12.649	46.000
769.449	-1.946	29.553	27.607	-18.393	46.000
932.522	0.032	30.898	30.931	-15.069	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
159.333	-10.873	32.637	21.764	-21.736	43.500
301.319	-10.329	34.434	24.105	-21.895	46.000
471.420	-6.495	39.240	32.745	-13.255	46.000
613.406	-3.974	34.794	30.820	-15.180	46.000
769.449	-1.946	29.553	27.607	-18.393	46.000
911.435	-0.197	30.309	30.112	-15.888	46.000
Vertical					
159.333	-10.873	44.604	33.731	-9.769	43.500
301.319	-10.329	41.334	31.005	-14.995	46.000
485.478	-6.263	38.206	31.943	-14.057	46.000
634.493	-3.846	31.485	27.640	-18.360	46.000
776.478	-1.894	29.885	27.990	-18.010	46.000
925.493	-0.043	30.436	30.393	-15.607	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
166.362	-11.084	45.804	34.720	-8.780	43.500
301.319	-10.329	41.334	31.005	-14.995	46.000
457.362	-6.727	38.401	31.674	-14.326	46.000
592.319	-4.238	32.772	28.534	-17.466	46.000
755.391	-2.045	30.267	28.222	-17.778	46.000
904.406	-0.273	29.912	29.639	-16.361	46.000
Vertical					
152.304	-11.044	43.865	32.821	-10.679	43.500
322.406	-9.840	38.534	28.694	-17.306	46.000
492.507	-6.146	40.144	33.998	-12.002	46.000
634.493	-3.846	31.485	27.640	-18.360	46.000
769.449	-1.946	29.553	27.607	-18.393	46.000
932.522	0.032	30.898	30.931	-15.069	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
152.304	-11.044	43.865	32.821	-10.679	43.500
315.377	-10.001	37.658	27.657	-18.343	46.000
499.536	-6.031	38.040	32.009	-13.991	46.000
641.522	-3.802	33.948	30.146	-15.854	46.000
762.420	-1.996	30.300	28.304	-17.696	46.000
918.464	-0.121	30.042	29.921	-16.079	46.000
Vertical					
152.304	-11.044	45.915	34.871	-8.629	43.500
322.406	-9.840	38.534	28.694	-17.306	46.000
478.449	-6.380	40.338	33.959	-12.041	46.000
599.348	-4.071	32.673	28.602	-17.398	46.000
748.362	-2.115	29.859	27.745	-18.255	46.000
911.435	-0.197	30.309	30.112	-15.888	46.000

Note:

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

Product : VistaHub Wifi only
Test Item : General Radiated Emission
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
_ Adapter: ATM036T-A050
Test Date : 2017/11/28

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBµV	dBµV/m	dB	dBµV/m
Horizontal					
159.333	-10.873	44.820	33.947	-9.553	43.500
322.406	-9.840	38.898	29.058	-16.942	46.000
499.536	-6.031	39.473	33.442	-12.558	46.000
634.493	-3.846	31.485	27.640	-18.360	46.000
790.536	-1.790	32.123	30.334	-15.666	46.000
939.551	0.107	30.394	30.501	-15.499	46.000
Vertical					
166.362	-11.084	45.804	34.720	-8.780	43.500
329.435	-9.681	42.610	32.930	-13.070	46.000
492.507	-6.146	40.144	33.998	-12.002	46.000
655.580	-3.675	35.543	31.868	-14.132	46.000
776.478	-1.894	29.885	27.990	-18.010	46.000
939.551	0.107	30.394	30.501	-15.499	46.000

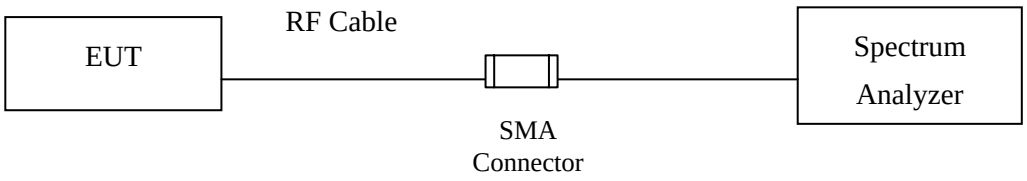
Note:

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

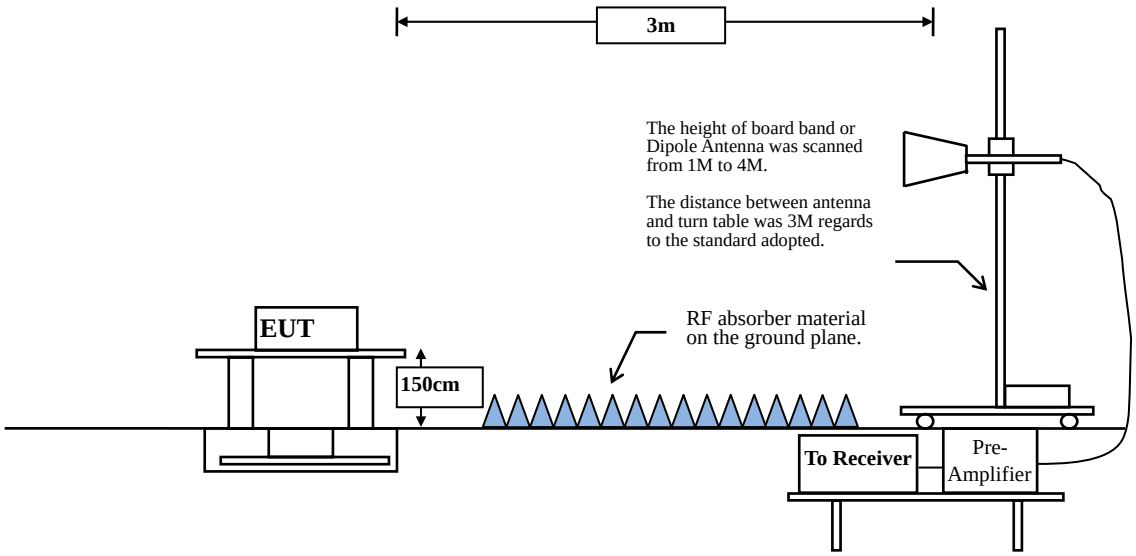
6. Band Edge

6.1. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



6.2. Limits

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

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

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

Remarks : 1. RF Voltage (dBμV) = 20 log RF Voltage (uV)

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

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

6.3. Test Procedure

The EUT is placed on a turn table which is 1.5 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

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

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated measurement.

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

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.

RBW and VBW Parameter setting:

According to KDB 789033 section II.G.5 Procedure for Unwanted Maximum Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW ≥ 3MHz.

According to KDB 789033 section II.G.6 Procedures for Average Unwanted Emissions Measurements above 1000 MHz.

RBW = 1MHz.

VBW = 10Hz, when duty cycle ≥ 98 %

VBW ≥ 1/T, when duty cycle < 98 %

(T refers to the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.)

2.4GHz band	Duty Cycle (%)	T (ms)	1/T (Hz)	VBW (Hz)
802.11a	100	--	--	10
802.11n20	100	--	--	10
802.11n40	100	--	--	10

Note: Duty Cycle Refer to Section 9

6.4. Uncertainty

Conducted: ±1.23dB

Radiated:

Horizontal polarization：1-18GHz: ±3.77dB

Vertical polarization：1-18GHz : ±3.83dB

6.5. Test Result of Band Edge

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2017/11/15

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5148.986	18.331	53.624	71.955	74.00	54.00	Pass
36 (Peak)	5150.000	18.335	51.583	69.917	74.00	54.00	Pass
36 (Peak)	5177.681	18.395	91.886	110.282	--	--	--
36 (Average)	5150.000	18.335	33.557	51.891	74.00	54.00	Pass
36 (Average)	5177.246	18.394	82.394	100.788	--	--	--

Figure Channel 36: Horizontal (Peak)

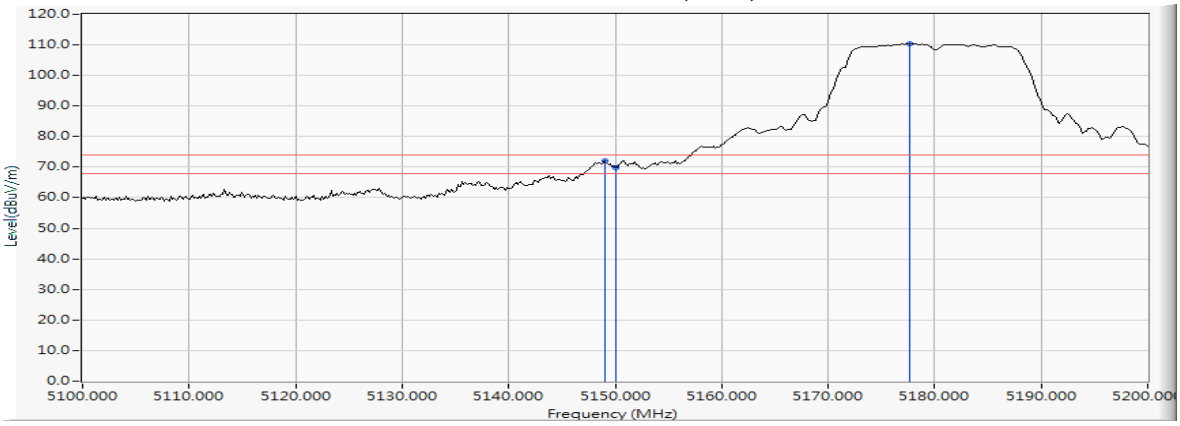
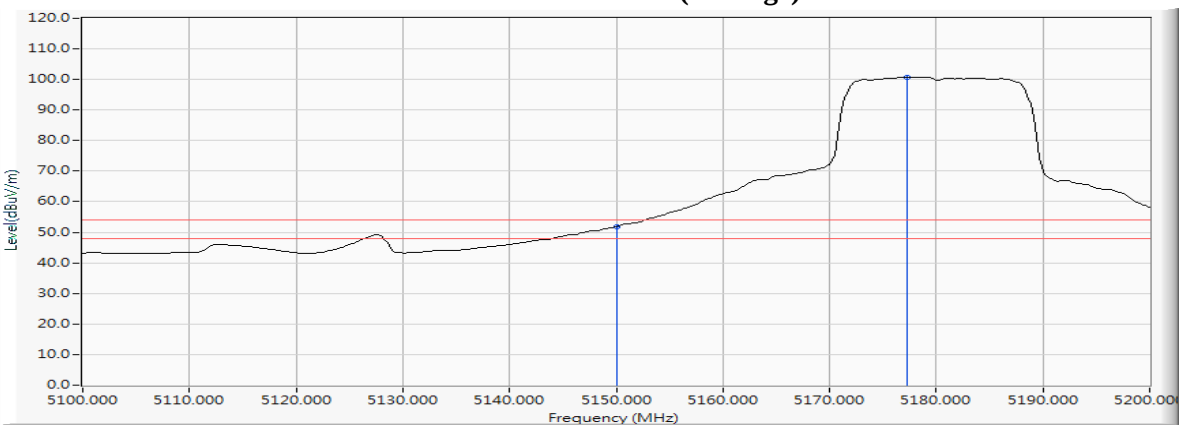


Figure Channel 36: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)
Test Date : 2017/11/15

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5149.130	18.331	45.804	64.135	74.00	54.00	Pass
36 (Peak)	5150.000	18.335	43.772	62.106	74.00	54.00	Pass
36 (Peak)	5177.681	18.395	82.727	101.123	--	--	--
36 (Average)	5150.000	18.335	25.306	43.640	74.00	54.00	Pass
36 (Average)	5177.246	18.394	73.449	91.843	--	--	--

Figure Channel 36: Vertical (Peak)

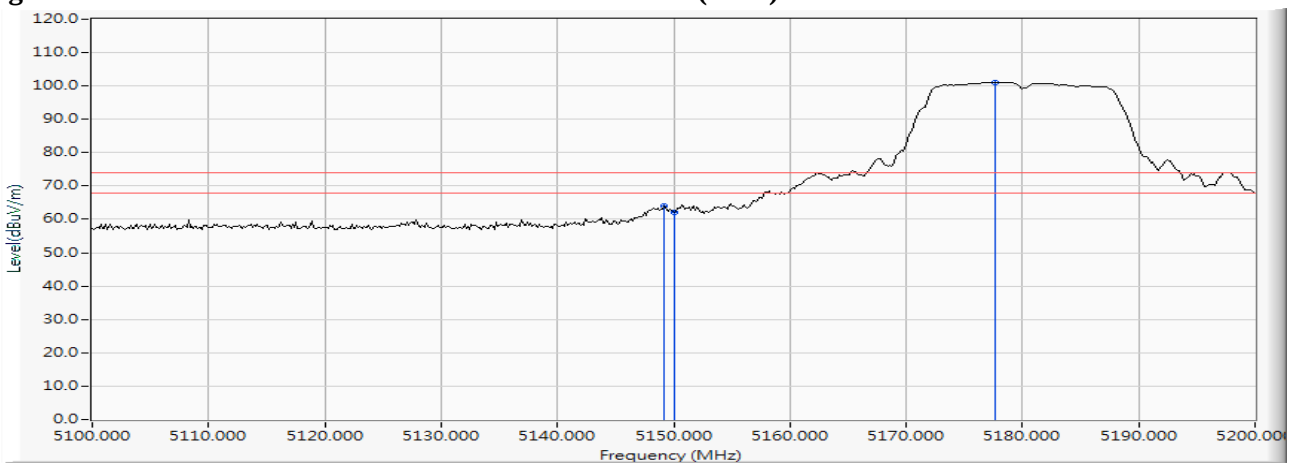
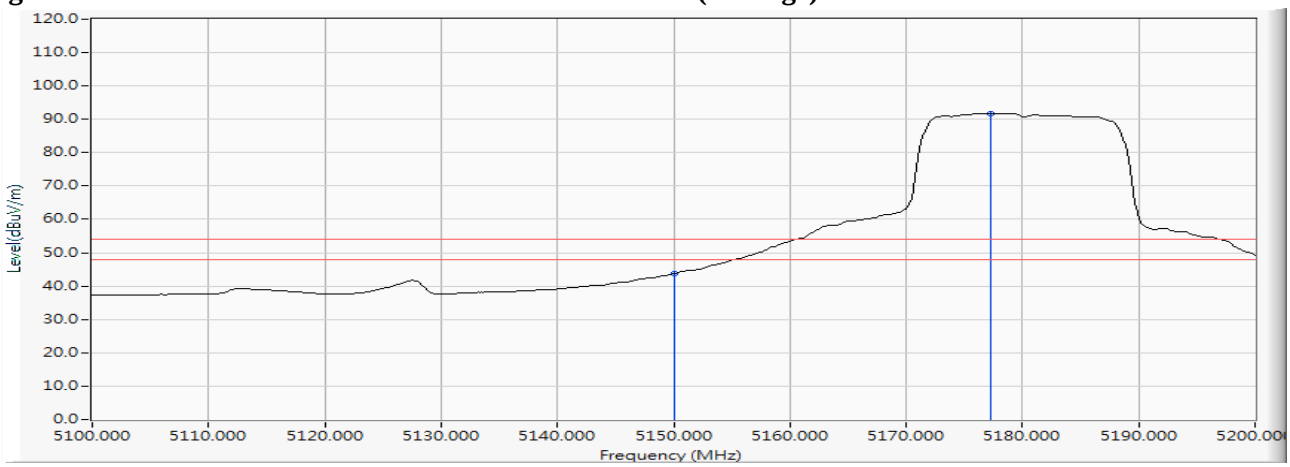


Figure Channel 36: Vertical (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2017/11/15

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5321.159	18.746	95.713	114.459	--	--	--
64 (Peak)	5350.000	18.833	53.327	72.160	74.00	54.00	Pass
64 (Average)	5319.130	18.741	86.080	104.821	--	--	--
64 (Average)	5350.000	18.833	33.694	52.527	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

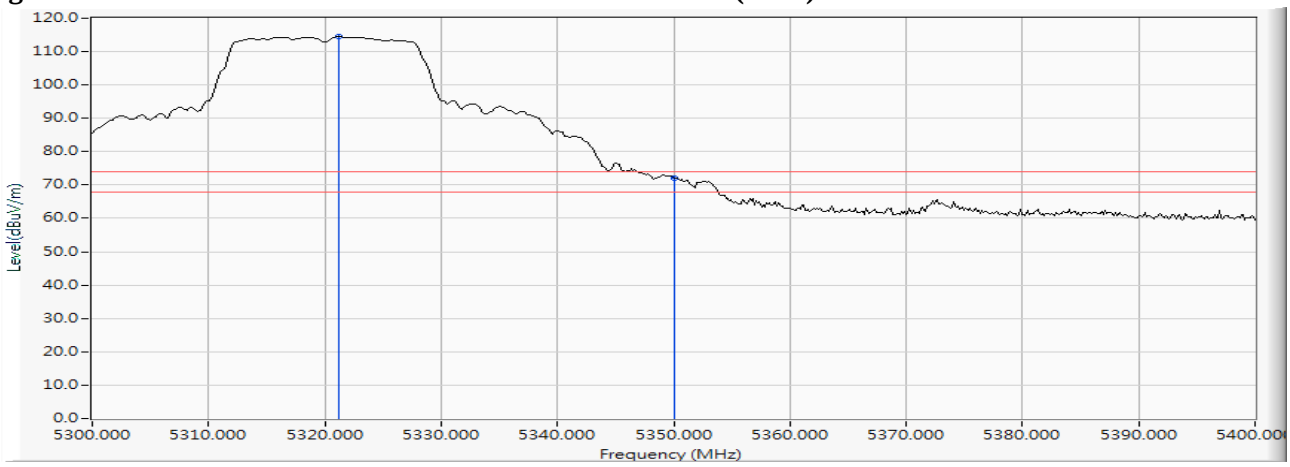
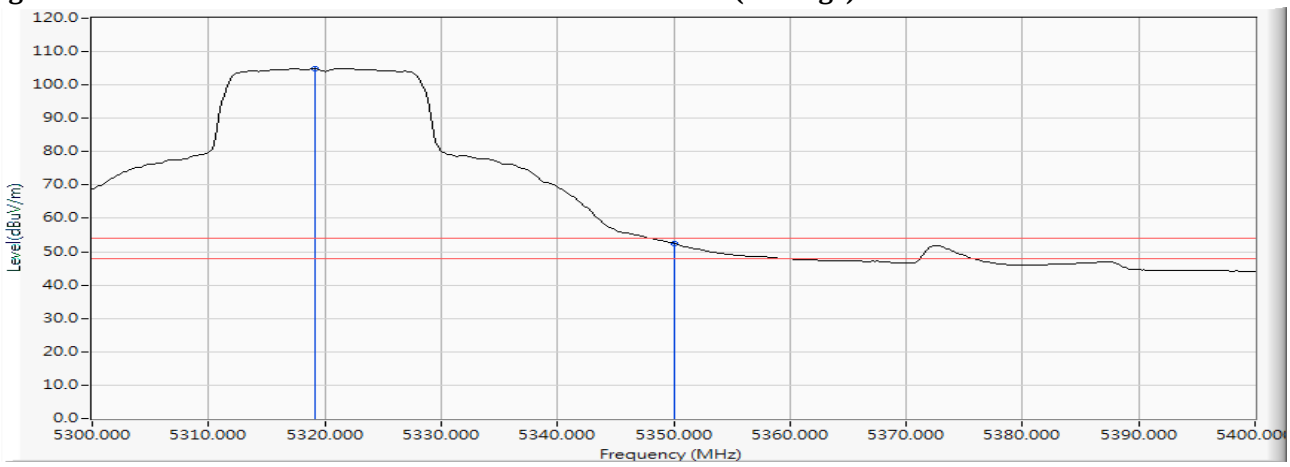


Figure Channel 64: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)
Test Date : 2017/11/15

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5316.667	18.736	86.510	105.246	--	--	--
64 (Peak)	5350.000	18.833	44.923	63.756	74.00	54.00	Pass
64 (Peak)	5350.725	18.834	45.154	63.988	74.00	54.00	Pass
64 (Average)	5317.101	18.736	77.125	95.862	--	--	--
64 (Average)	5350.000	18.833	25.134	43.967	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

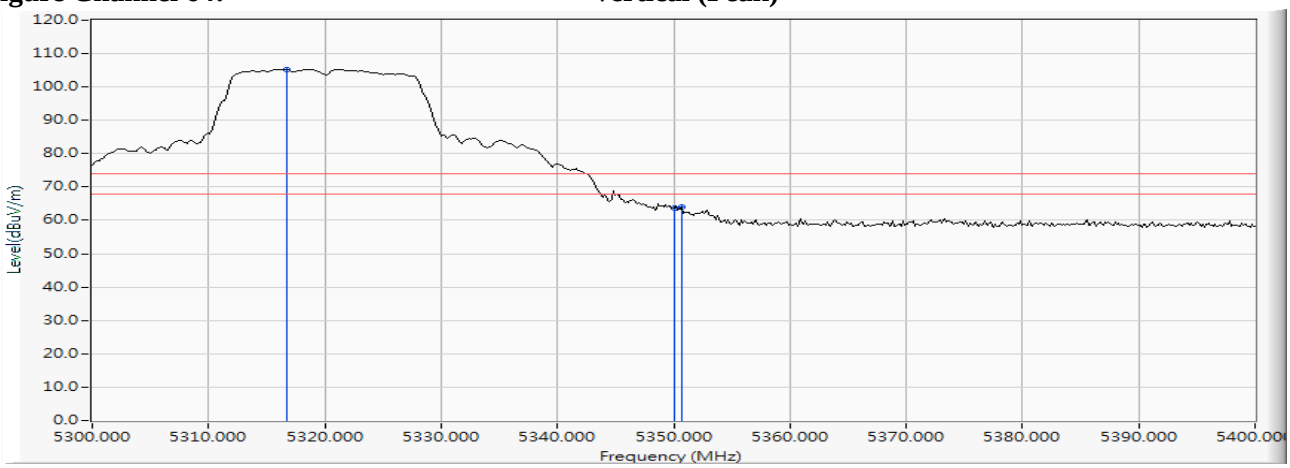
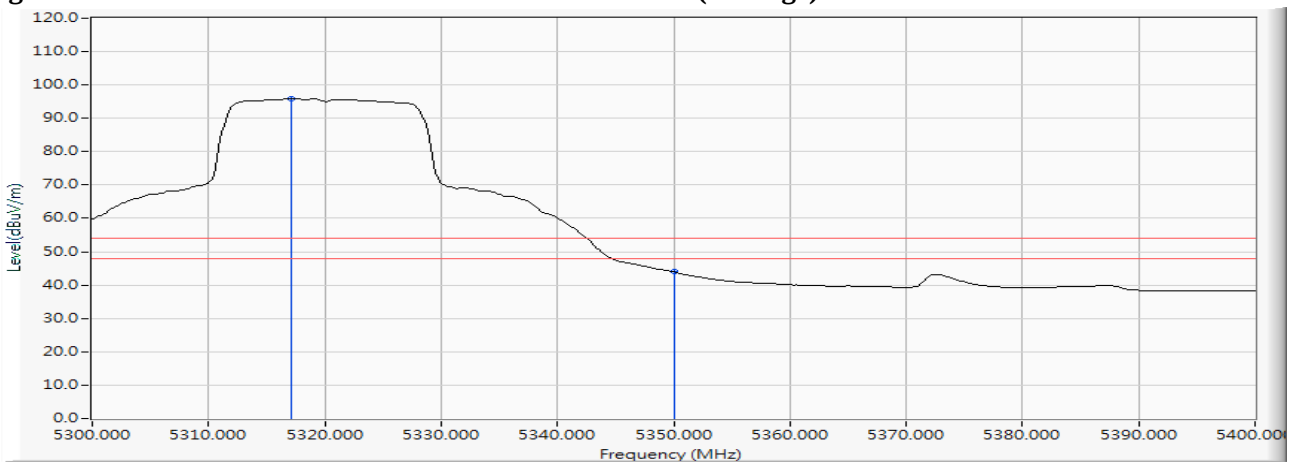


Figure Channel 64: Vertical (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2017/11/15

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5458.986	19.096	44.784	63.880	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	42.926	62.023	74.00	54.00	Pass
100 (Peak)	5502.464	19.195	89.868	109.063	--	--	--
100 (Average)	5447.681	19.056	30.701	49.757	74.00	54.00	Pass
100 (Average)	5460.000	19.097	26.791	45.888	74.00	54.00	Pass
100 (Average)	5498.406	19.192	80.853	100.045	--	--	--

Figure Channel 100: Horizontal (Peak)

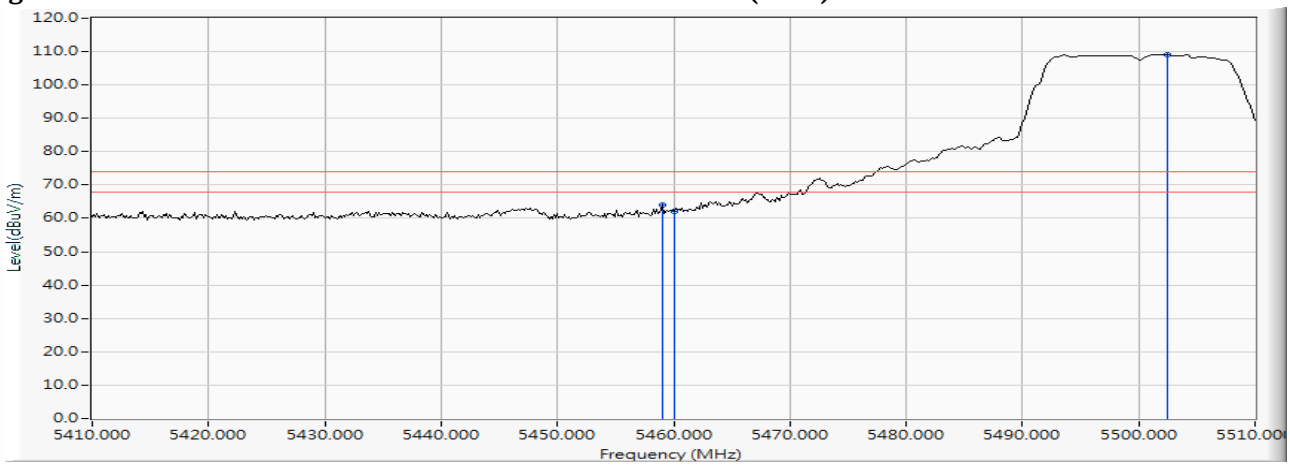
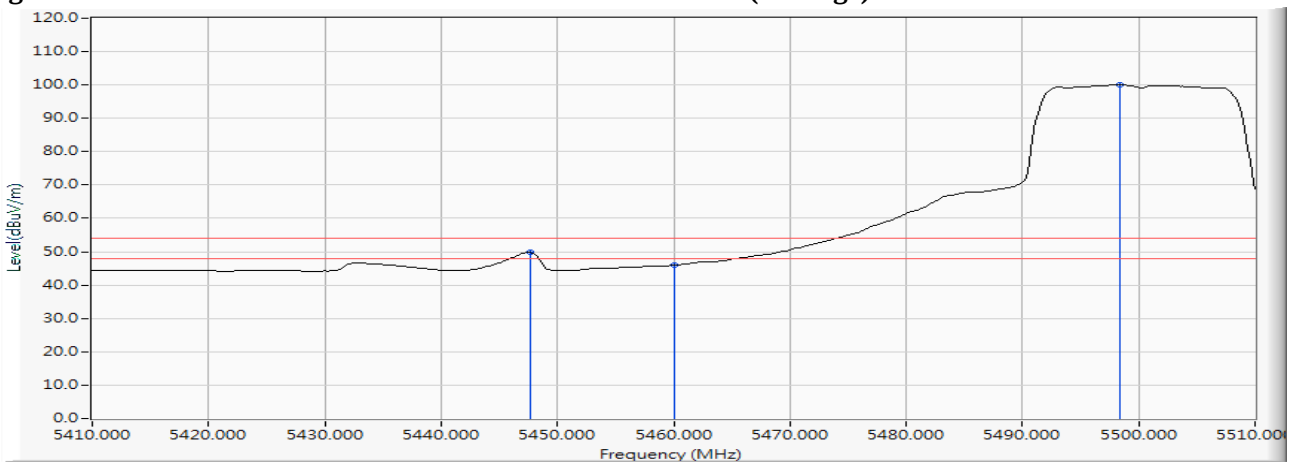


Figure Channel 100: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2017/11/15

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5435.652	19.018	41.715	60.732	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	40.649	59.746	74.00	54.00	Pass
100 (Peak)	5504.058	19.195	81.423	100.618	--	--	--
100 (Average)	5447.536	19.056	23.045	42.101	74.00	54.00	Pass
100 (Average)	5460.000	19.097	20.066	39.163	74.00	54.00	Pass
100 (Average)	5502.029	19.194	72.171	91.365	--	--	--

Figure Channel 100: Vertical (Peak)

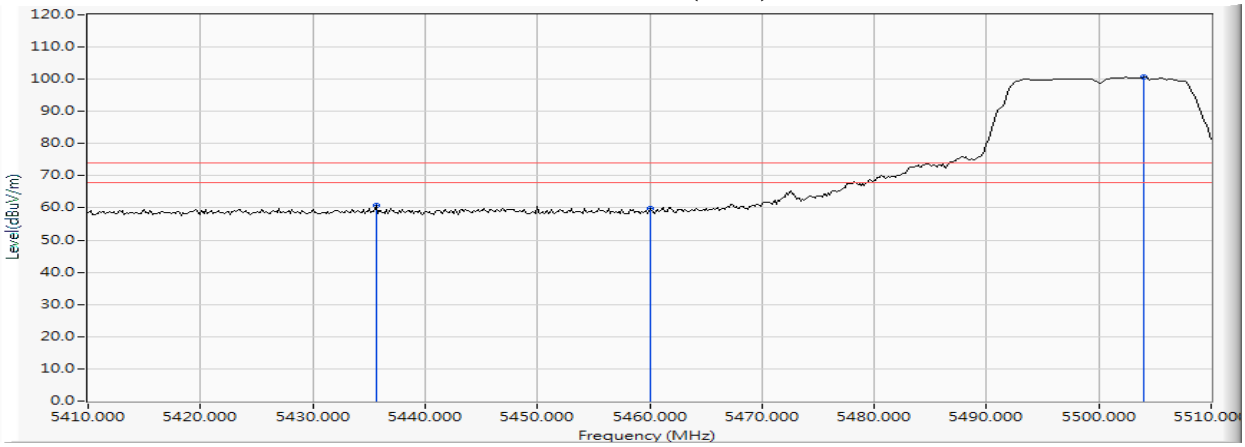
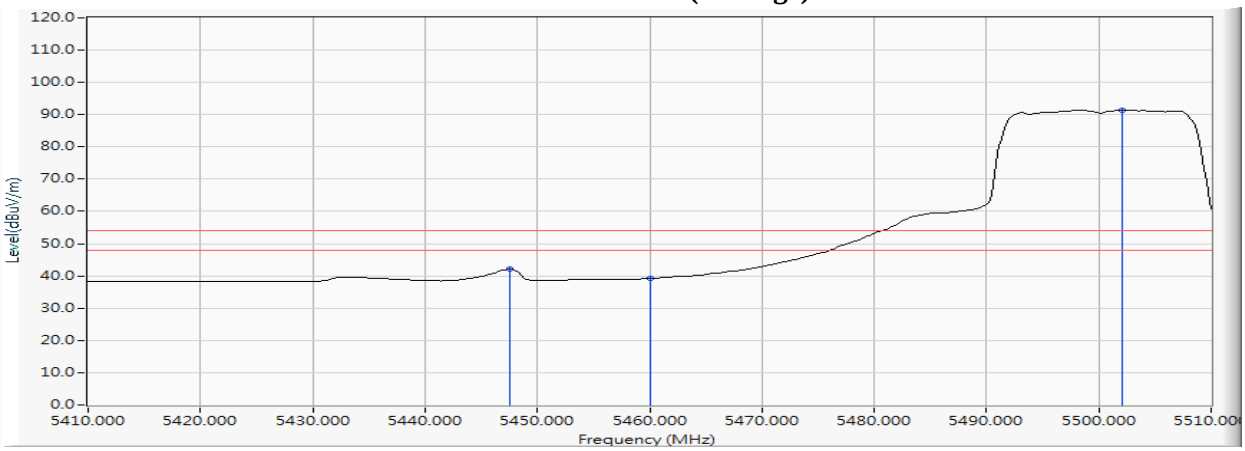


Figure Channel 100: Vertical (Average)



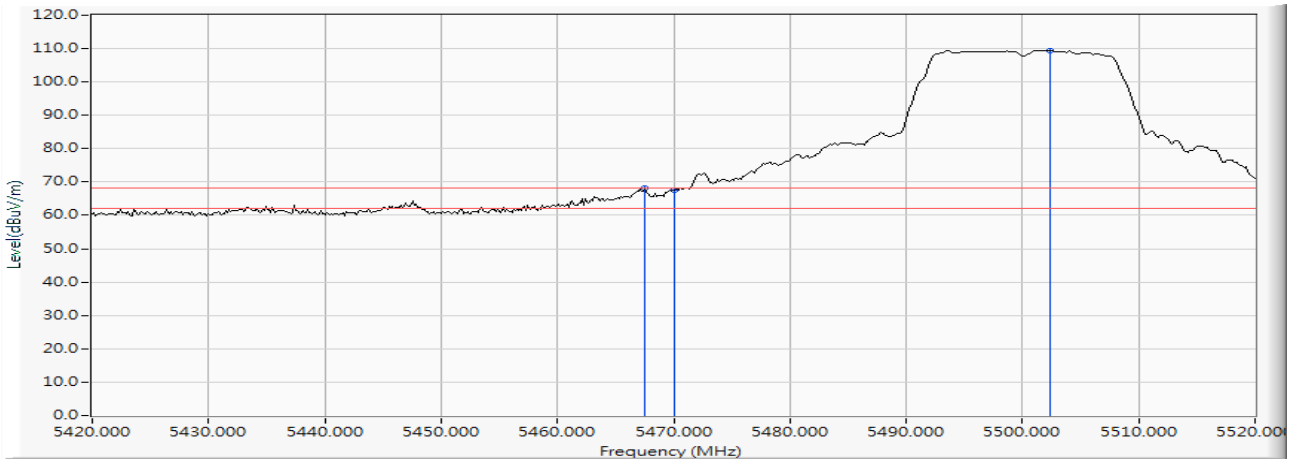
Note:

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

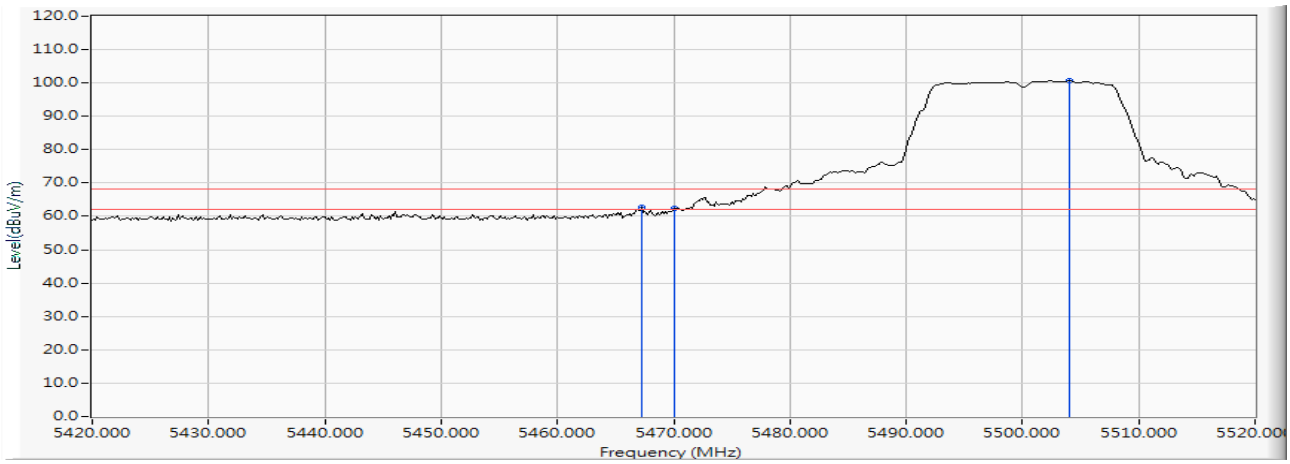
Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)
Test Date : 2017/11/15

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5467.536	19.107	49.002	68.109	-0.111	68.220	Pass
Horizontal	5470.000	19.110	48.433	67.543	-0.677	68.220	Pass
Horizontal	5502.319	19.194	90.182	109.377	--	--	--



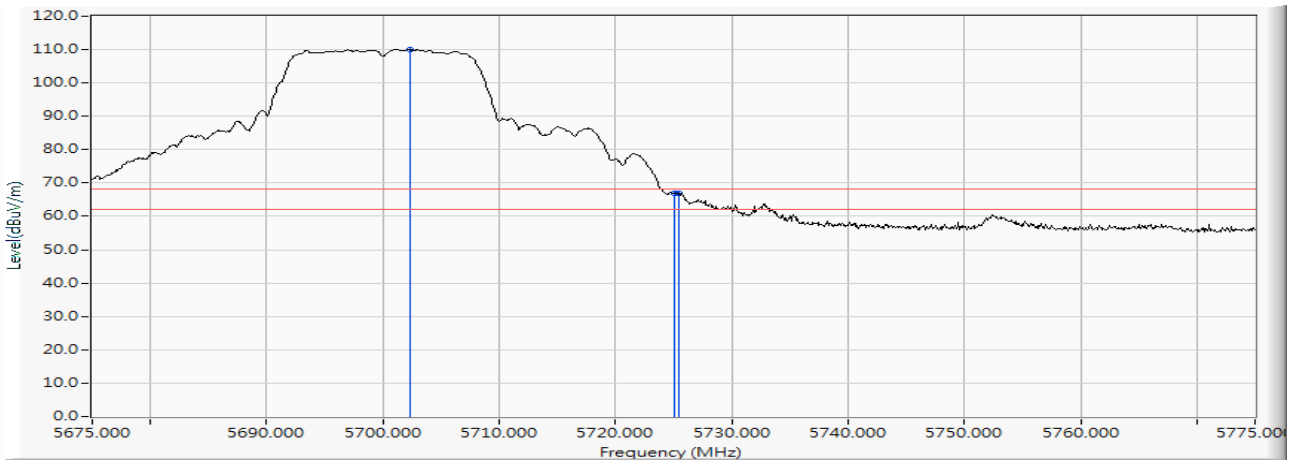
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5467.246	19.106	43.498	62.604	-5.616	68.220	Pass
Vertical	5470.000	19.110	43.262	62.372	-5.848	68.220	Pass
Vertical	5504.058	19.195	81.439	100.634	--	--	--



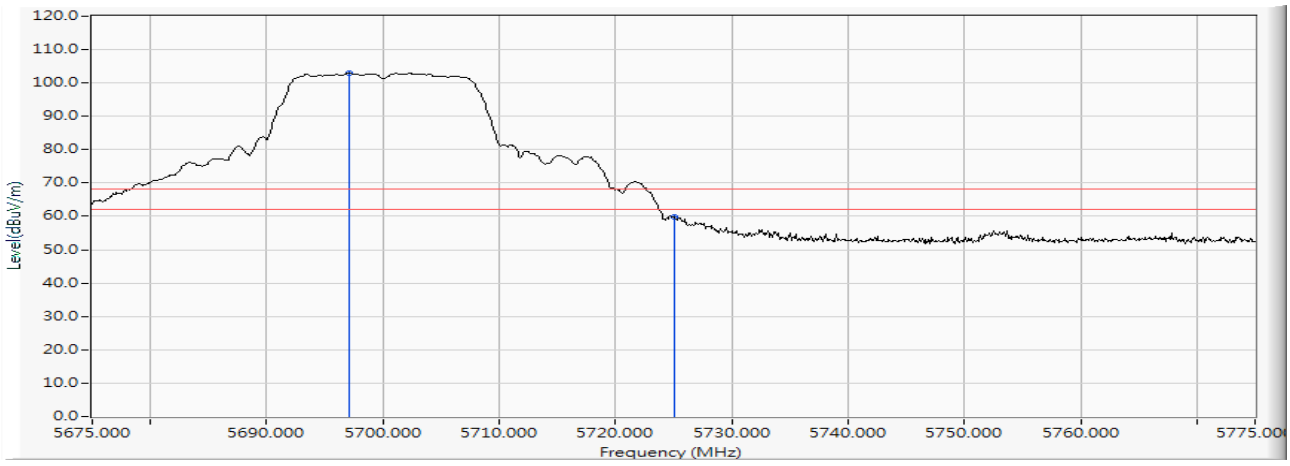
Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5702.300	19.665	90.349	110.013	--	--	--
Horizontal	5725.000	19.725	47.058	66.783	-1.437	68.220	Pass
Horizontal	5725.400	19.726	47.295	67.021	-1.199	68.220	Pass



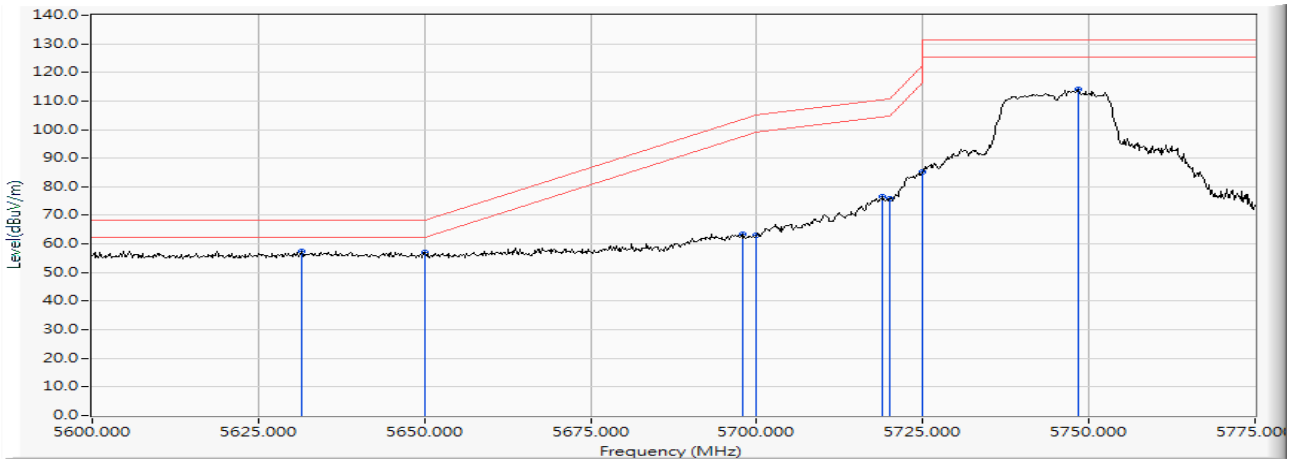
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Result
Vertical	5697.100	19.652	83.218	102.870	--	--	--
Vertical	5725.000	19.725	40.213	59.938	-8.282	68.220	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

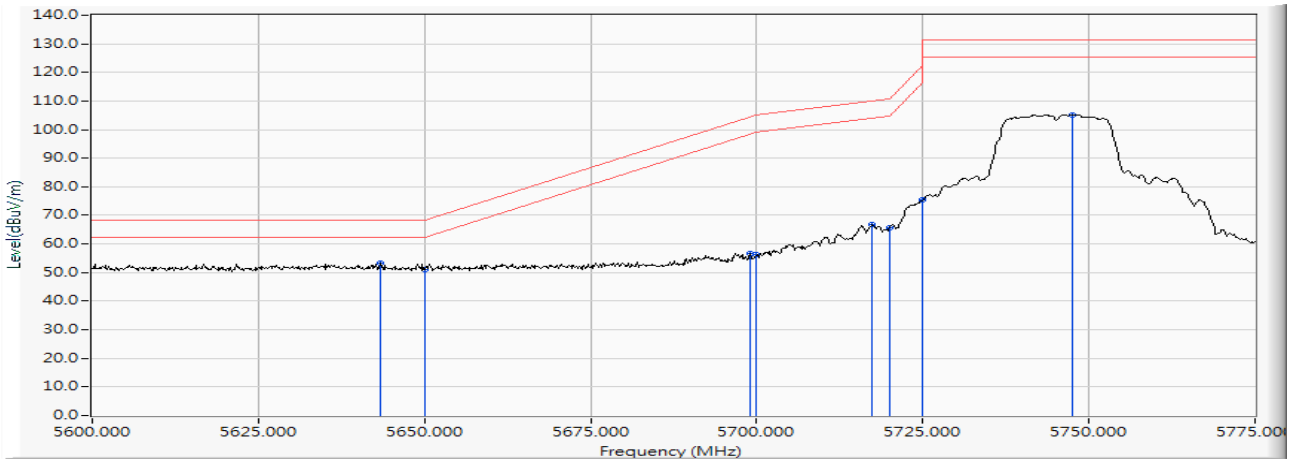
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5631.500	19.494	37.954	57.448	-10.772	68.220	Pass
Horizontal	5650.000	19.535	37.449	56.985	-11.235	68.220	Pass
Horizontal	5697.825	19.653	43.833	63.487	-40.104	103.591	Pass
Horizontal	5700.000	19.659	43.579	63.238	-41.962	105.200	Pass
Horizontal	5719.000	19.709	56.691	76.399	-34.121	110.520	Pass
Horizontal	5720.000	19.711	56.159	75.870	-34.930	110.800	Pass
Horizontal	5725.000	19.725	65.449	85.174	-37.026	122.200	Pass
Horizontal	5748.400	19.769	94.195	113.965	--	--	--



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

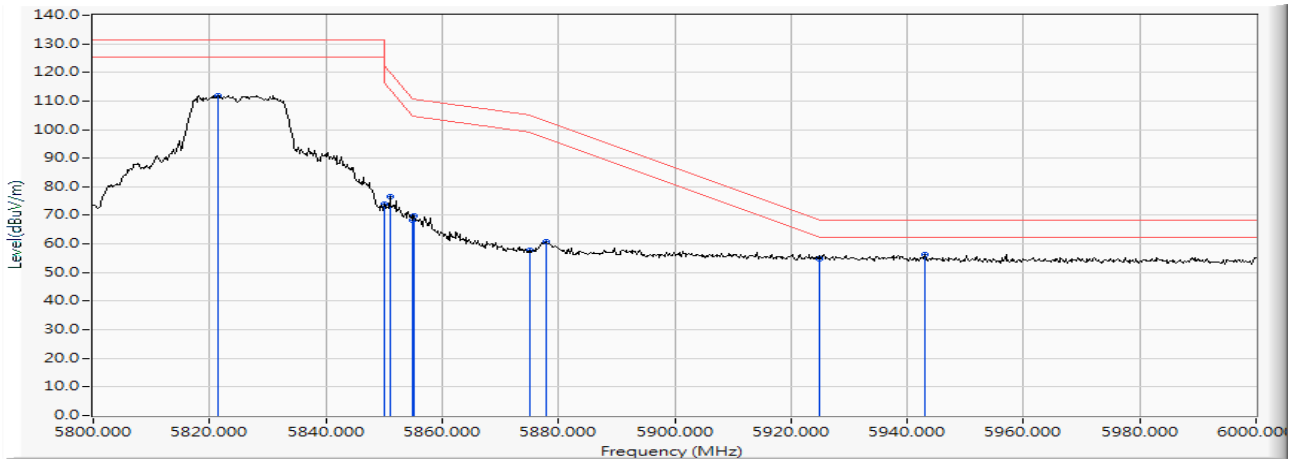
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Vertical	5643.400	19.520	33.806	53.326	-14.894	68.220	Pass
Vertical	5650.000	19.535	31.430	50.966	-17.254	68.220	Pass
Vertical	5699.050	19.657	37.032	56.689	-47.808	104.497	Pass
Vertical	5700.000	19.659	36.509	56.168	-49.032	105.200	Pass
Vertical	5717.425	19.704	47.116	66.820	-43.259	110.079	Pass
Vertical	5720.000	19.711	45.900	65.611	-45.189	110.800	Pass
Vertical	5725.000	19.725	55.619	75.344	-46.856	122.200	Pass
Vertical	5747.525	19.768	85.503	105.271	--	--	--



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

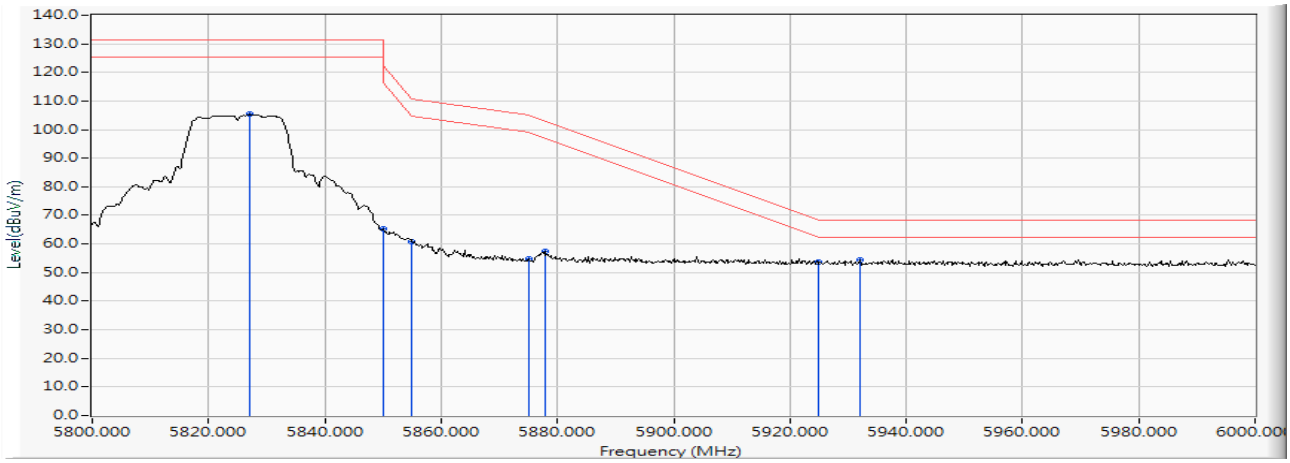
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Margin (dB)	Limit (dBµV/m)	Result
Horizontal	5821.400	19.929	91.974	111.903	--	--	--
Horizontal	5850.000	19.992	54.060	74.052	-48.148	122.200	Pass
Horizontal	5851.000	19.994	56.507	76.501	-43.419	119.920	Pass
Horizontal	5855.000	20.003	48.247	68.249	-42.551	110.800	Pass
Horizontal	5855.200	20.003	49.868	69.870	-40.874	110.744	Pass
Horizontal	5875.000	20.048	37.897	57.944	-47.256	105.200	Pass
Horizontal	5877.800	20.054	40.926	60.980	-42.148	103.128	Pass
Horizontal	5925.000	20.181	34.612	54.794	-13.406	68.200	Pass
Horizontal	5943.000	20.222	36.140	56.363	-11.837	68.200	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Result
Vertical	5827.200	19.945	85.337	105.282	--	--	--
Vertical	5850.000	19.992	45.264	65.256	-56.944	122.200	Pass
Vertical	5855.000	20.003	40.856	60.858	-49.942	110.800	Pass
Vertical	5875.000	20.048	34.717	54.764	-50.436	105.200	Pass
Vertical	5877.800	20.054	37.333	57.387	-45.741	103.128	Pass
Vertical	5925.000	20.181	33.455	53.637	-14.563	68.200	Pass
Vertical	5932.000	20.197	34.136	54.333	-13.867	68.200	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
36 (Peak)	5150.000	18.335	54.309	72.643	74.00	54.00	Pass
36 (Peak)	5178.406	18.397	91.853	110.251	--	--	--
36 (Average)	5150.000	18.335	34.353	52.687	74.00	54.00	Pass
36 (Average)	5176.957	18.393	81.091	99.484	--	--	--

Figure Channel 36: Horizontal (Peak)

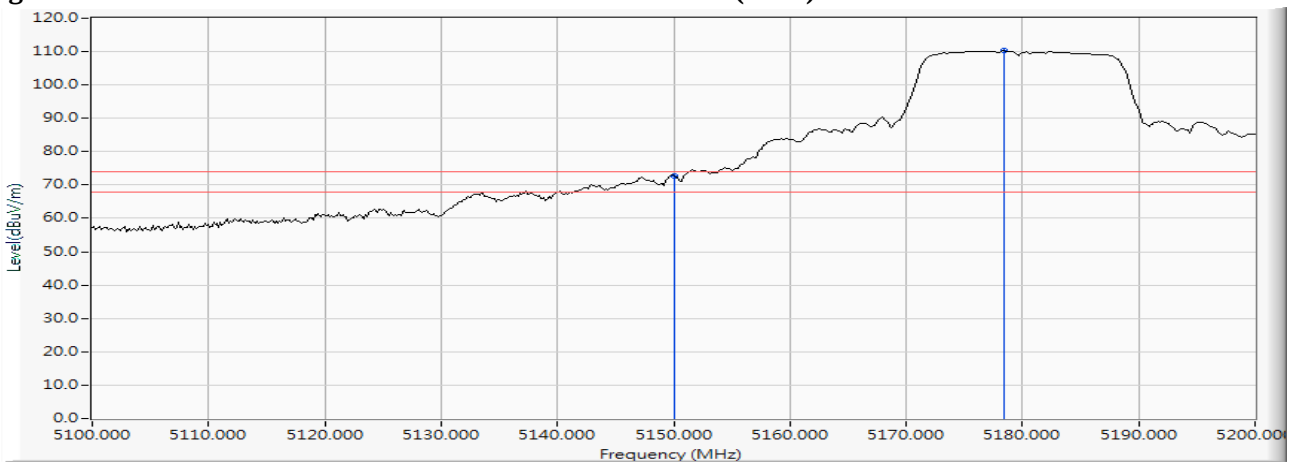
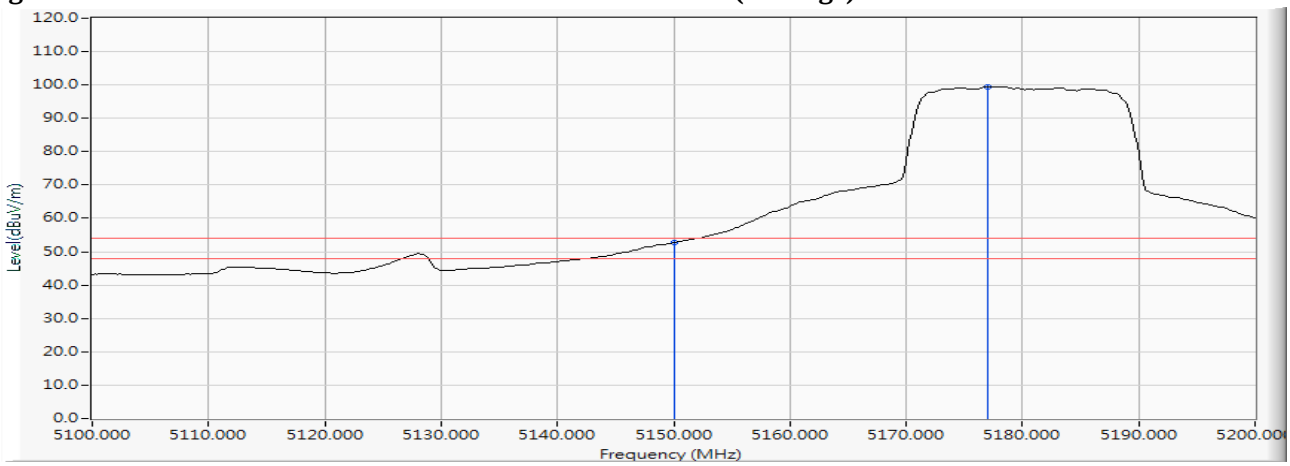


Figure Channel 36: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
36 (Peak)	5146.812	18.323	43.658	61.981	74.00	54.00	Pass
36 (Peak)	5150.000	18.335	43.057	61.391	74.00	54.00	Pass
36 (Peak)	5178.841	18.398	82.770	101.169	--	--	--
36 (Average)	5150.000	18.335	26.991	45.325	74.00	54.00	Pass
36 (Average)	5177.681	18.395	72.776	91.172	--	--	--

Figure Channel 36: Vertical (Peak)

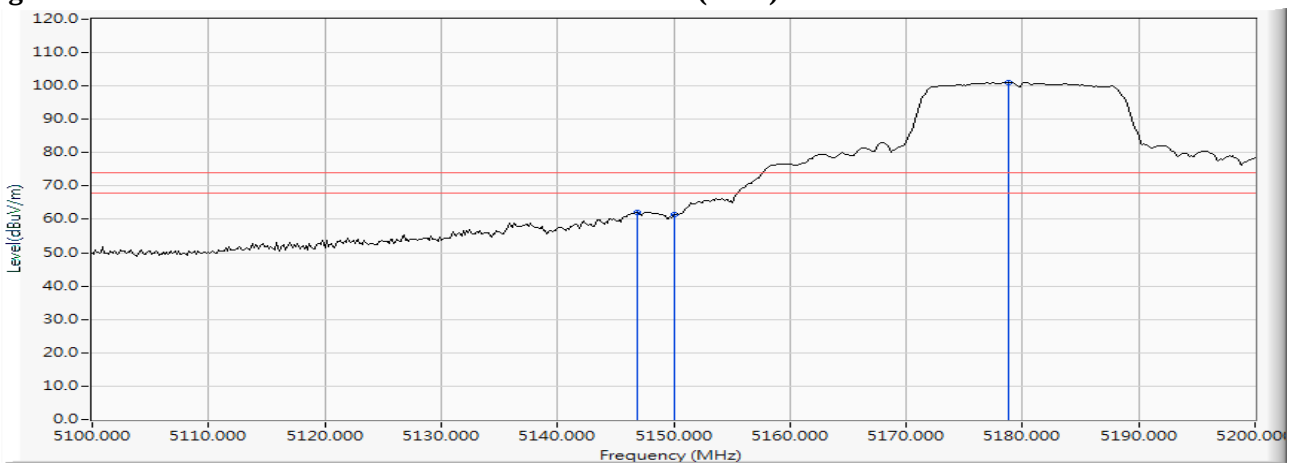
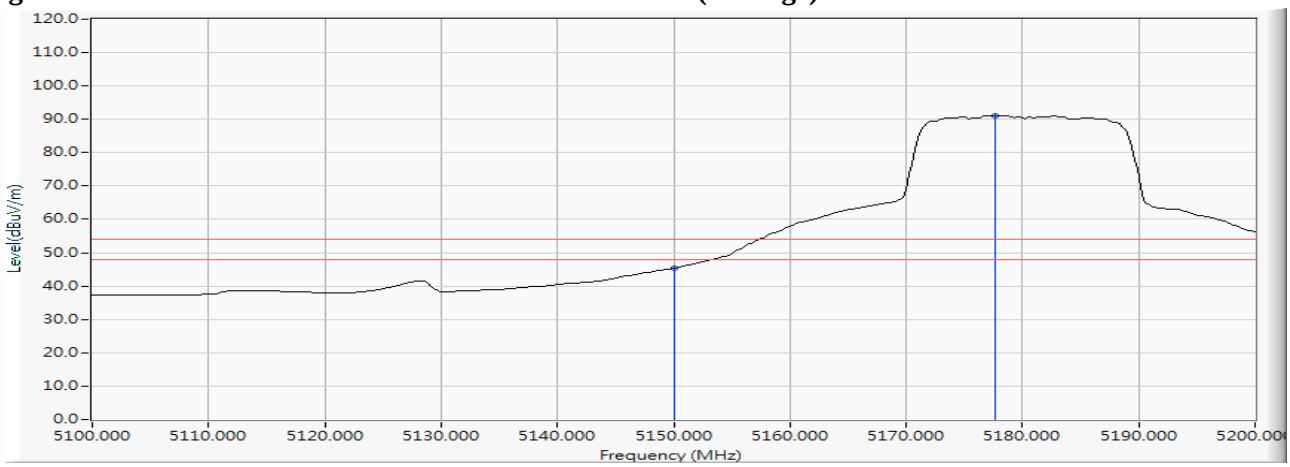


Figure Channel 36: Vertical (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5322.464	18.749	95.524	114.273	--	--	--
64 (Peak)	5350.000	18.833	50.862	69.695	74.00	54.00	Pass
64 (Peak)	5353.188	18.837	53.293	72.130	74.00	54.00	Pass
64 (Average)	5323.188	18.751	85.097	103.847	--	--	--
64 (Average)	5350.000	18.833	30.928	49.761	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

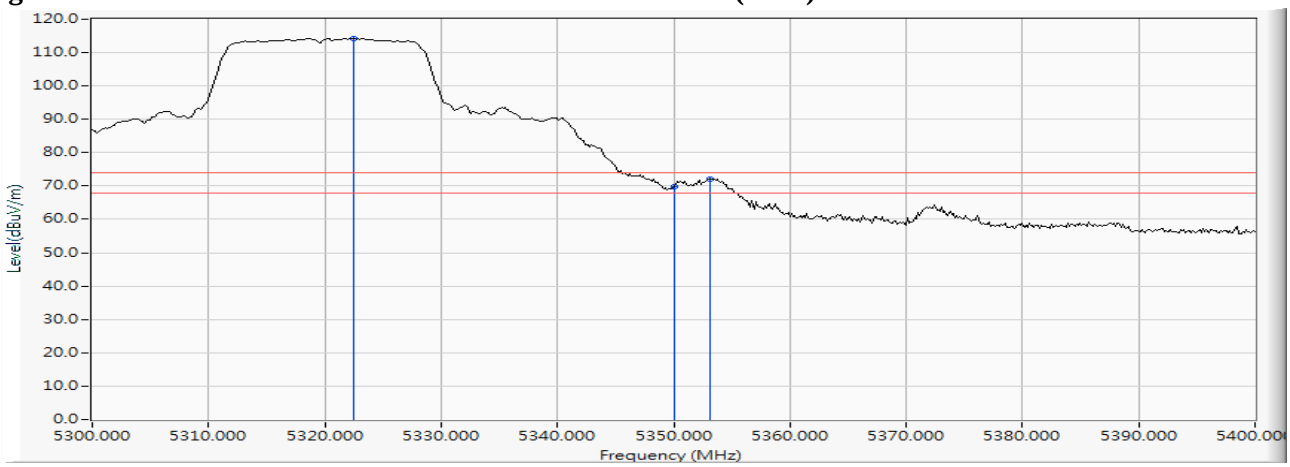
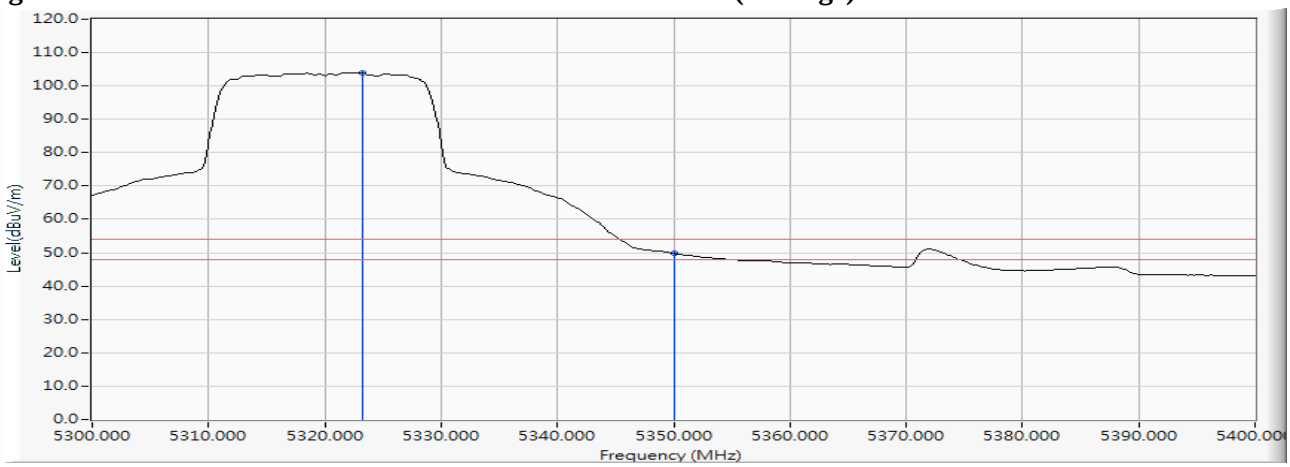


Figure Channel 64: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
64 (Peak)	5320.435	18.744	87.376	106.120	--	--	--
64 (Peak)	5350.000	18.833	48.617	67.450	74.00	54.00	Pass
64 (Peak)	5351.594	18.836	51.151	69.986	74.00	54.00	Pass
64 (Average)	5321.594	18.747	76.532	95.279	--	--	--
64 (Average)	5350.000	18.833	25.054	43.887	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

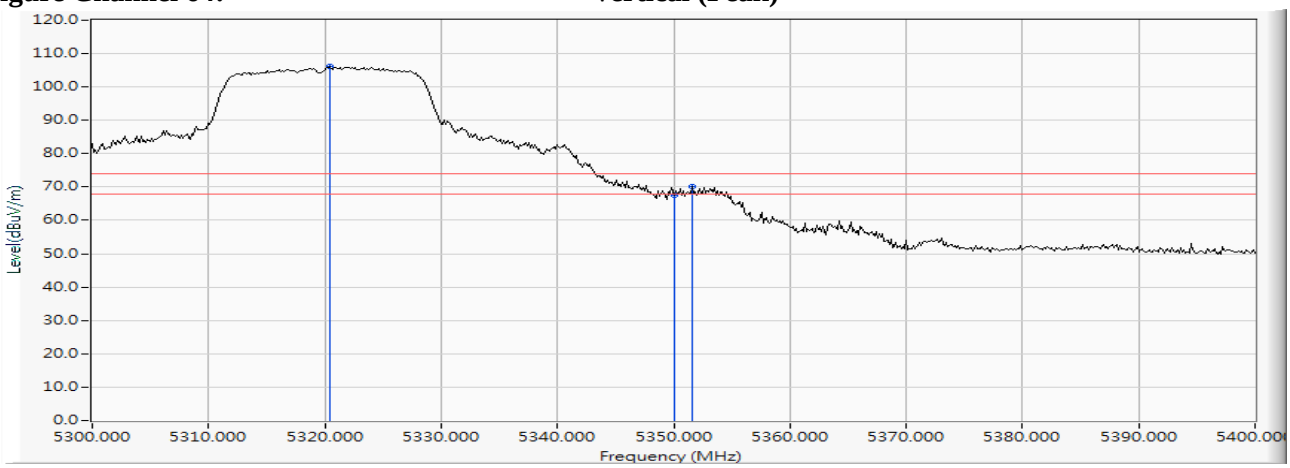
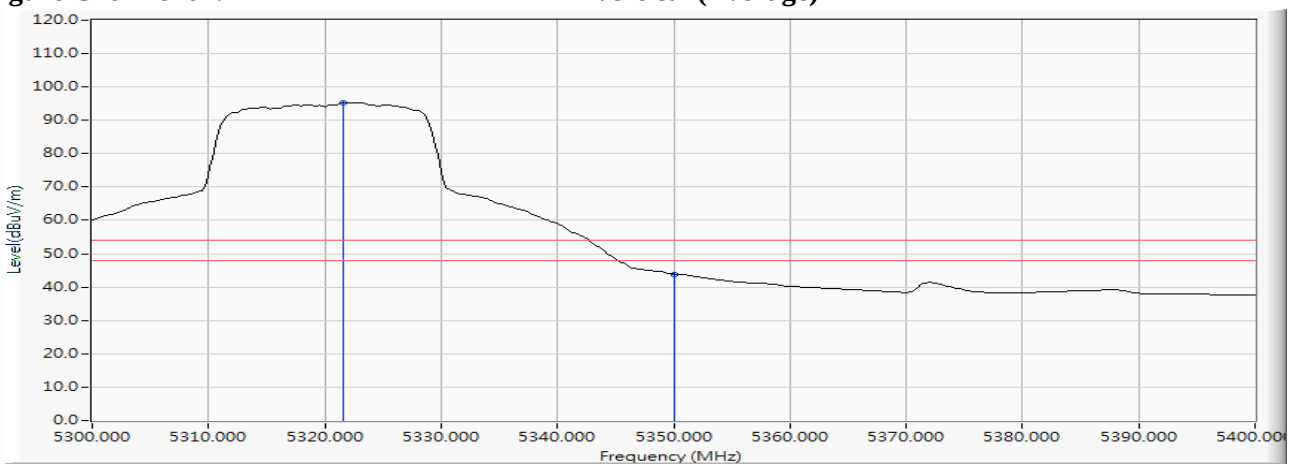


Figure Channel 64: Vertical (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5457.826	19.095	53.068	72.162	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	52.085	71.182	74.00	54.00	Pass
100 (Peak)	5500.290	19.194	94.292	113.486	--	--	--
100 (Average)	5448.116	19.058	33.481	52.539	74.00	54.00	Pass
100 (Average)	5460.000	19.097	31.636	50.733	74.00	54.00	Pass
100 (Average)	5498.696	19.193	82.756	101.948	--	--	--

Figure Channel 100: Horizontal (Peak)

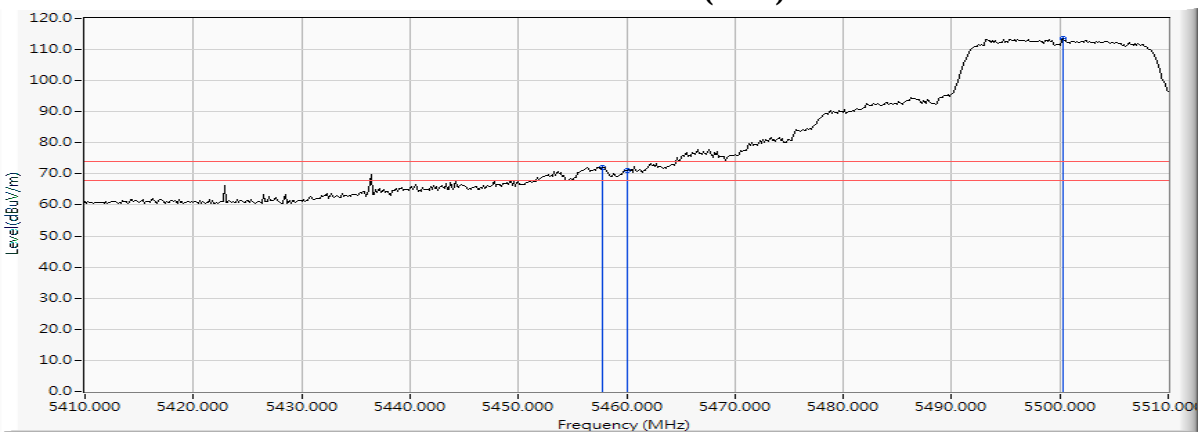
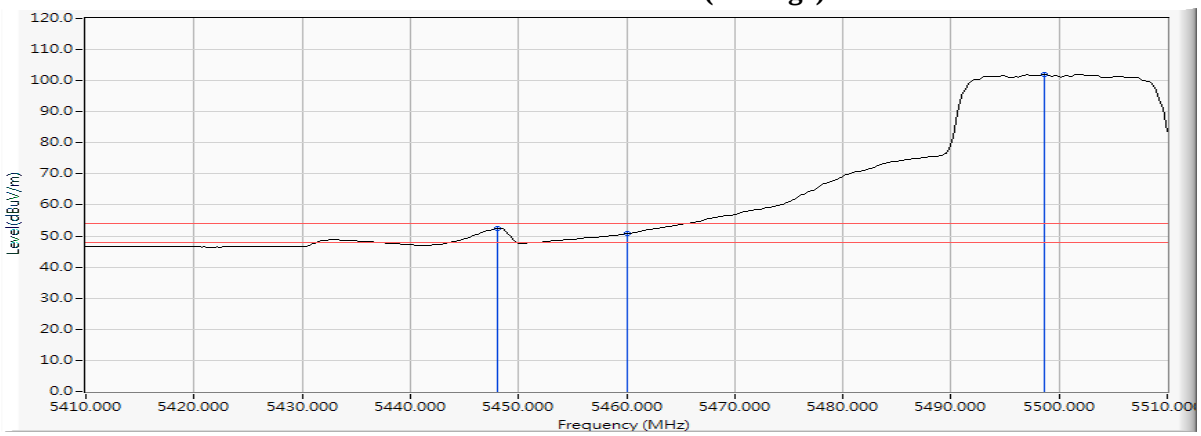


Figure Channel 100: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
100 (Peak)	5457.536	19.095	40.778	59.872	74.00	54.00	Pass
100 (Peak)	5460.000	19.097	40.487	59.584	74.00	54.00	Pass
100 (Peak)	5502.464	19.195	84.956	104.151	--	--	--
100 (Average)	5448.261	19.059	23.761	42.820	74.00	54.00	Pass
100 (Average)	5460.000	19.097	22.658	41.755	74.00	54.00	Pass
100 (Average)	5503.333	19.194	75.315	94.510	--	--	--

Figure Channel 100: Vertical (Peak)

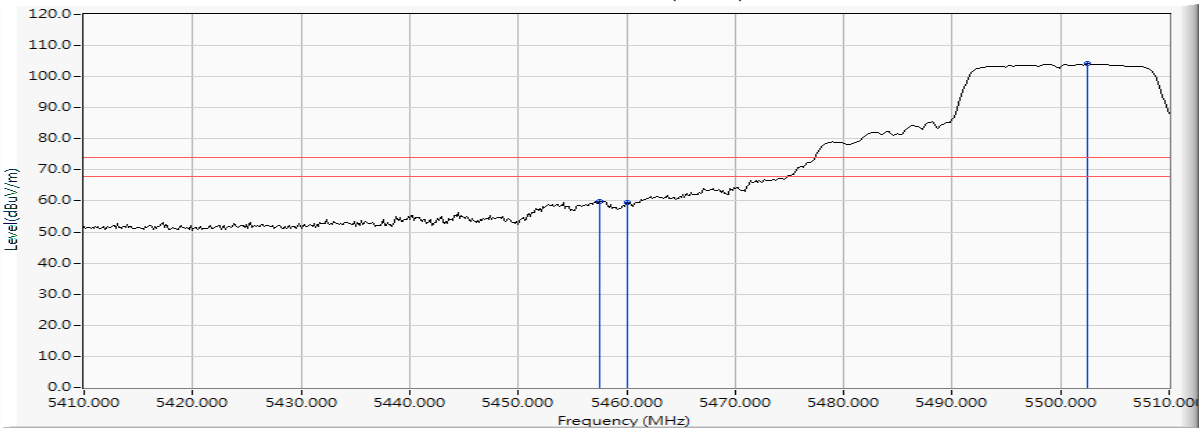
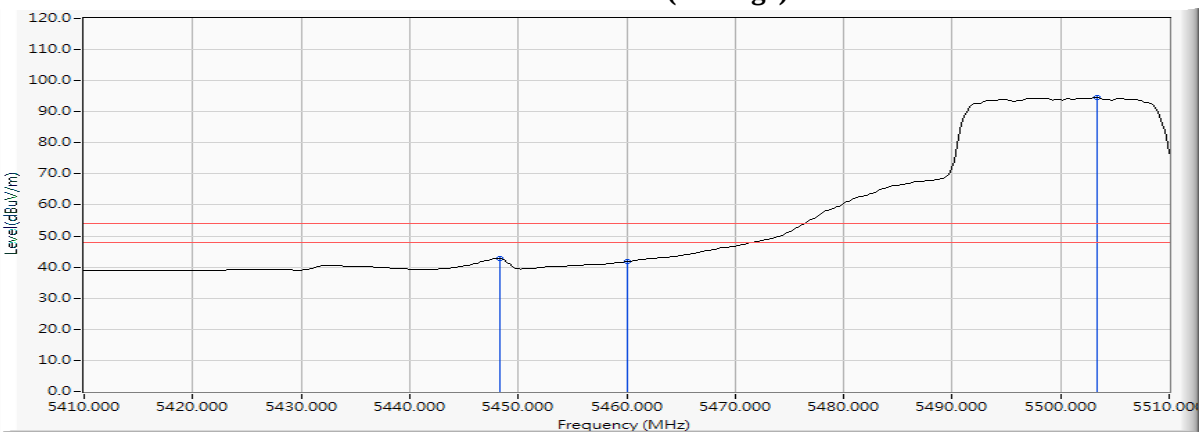


Figure Channel 100: Vertical (Average)



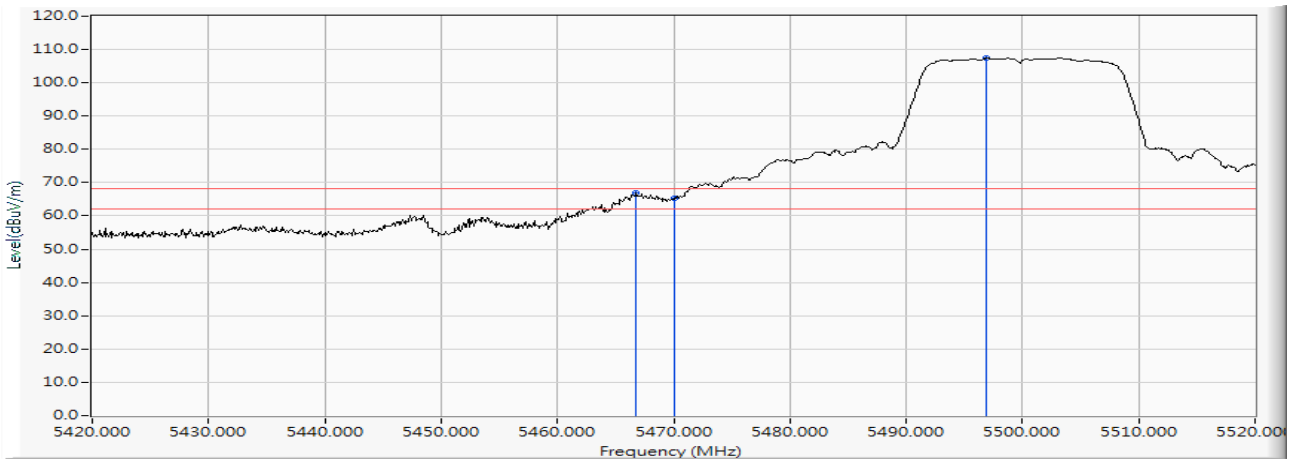
Note:

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

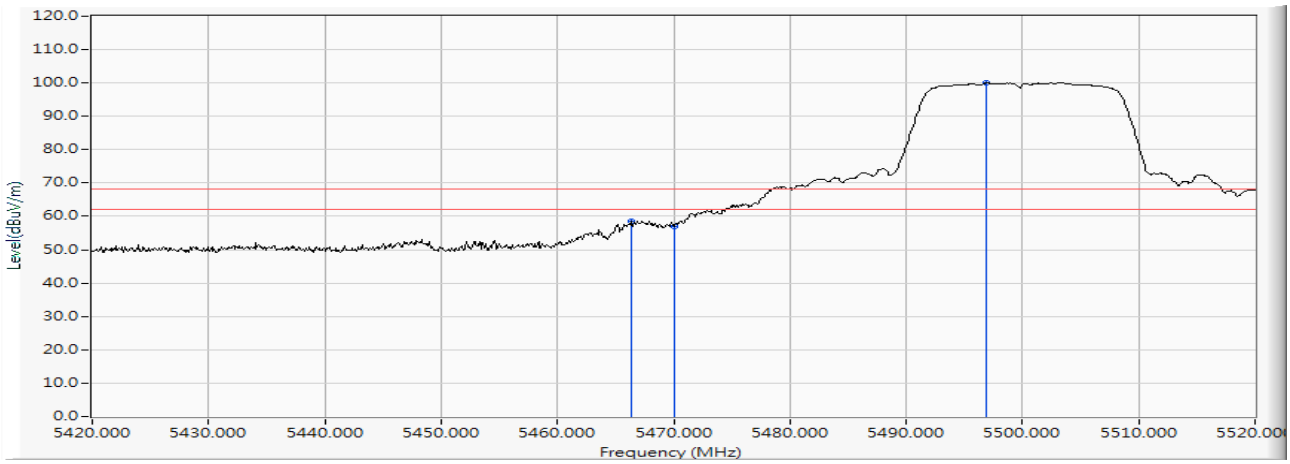
Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5466.800	19.107	47.711	66.817	-1.403	68.220	Pass
Horizontal	5470.000	19.110	46.117	65.227	-2.993	68.220	Pass
Horizontal	5496.900	19.191	88.326	107.517	--	--	--



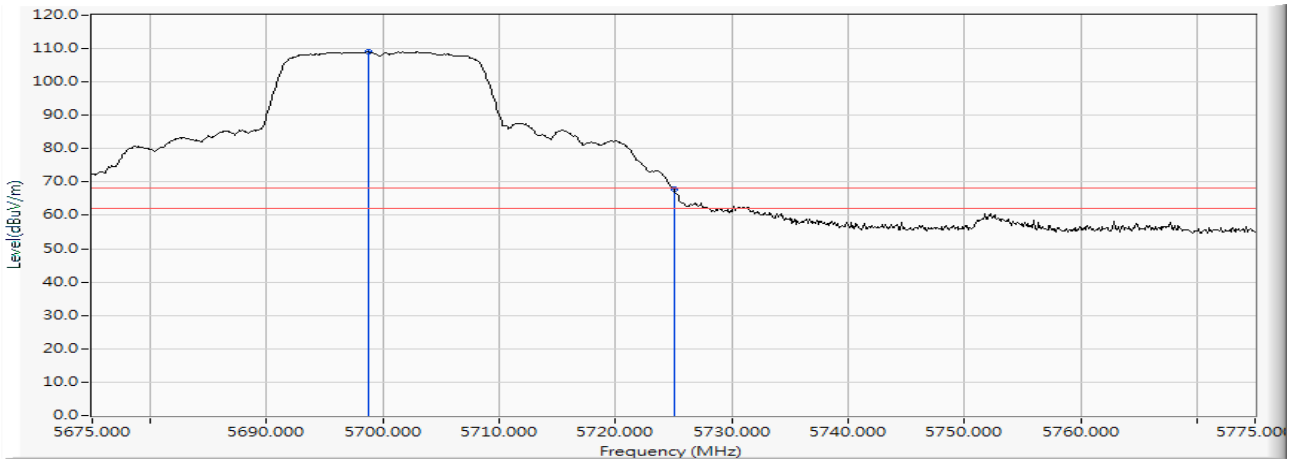
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5466.400	19.105	39.602	58.707	-9.513	68.220	Pass
Vertical	5470.000	19.110	37.865	56.975	-11.245	68.220	Pass
Vertical	5496.900	19.191	80.916	100.107	--	--	--



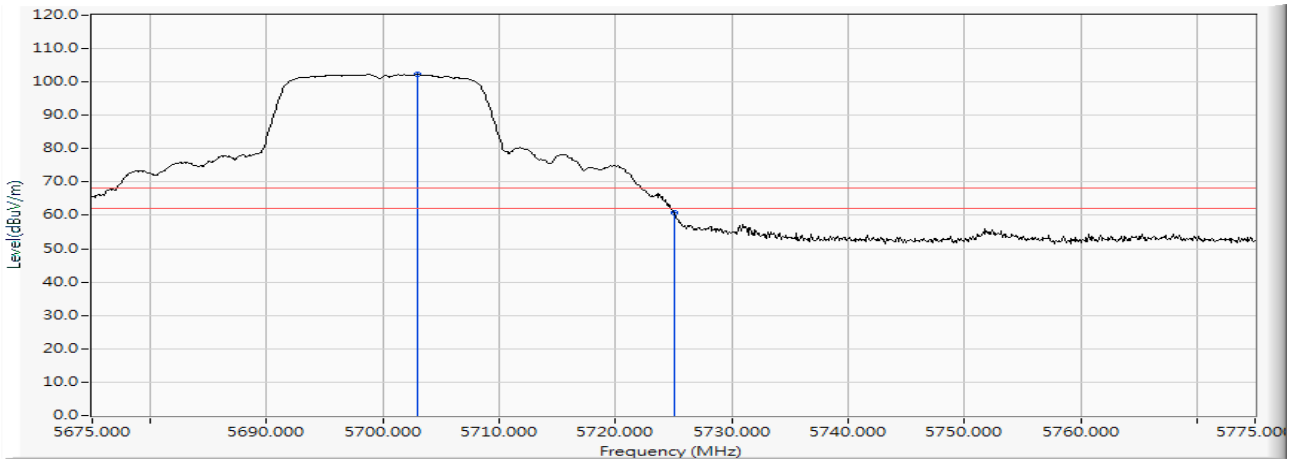
Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5698.700	19.656	89.353	109.009	--	--	--
Horizontal	5725.000	19.725	48.188	67.913	-0.307	68.220	Pass



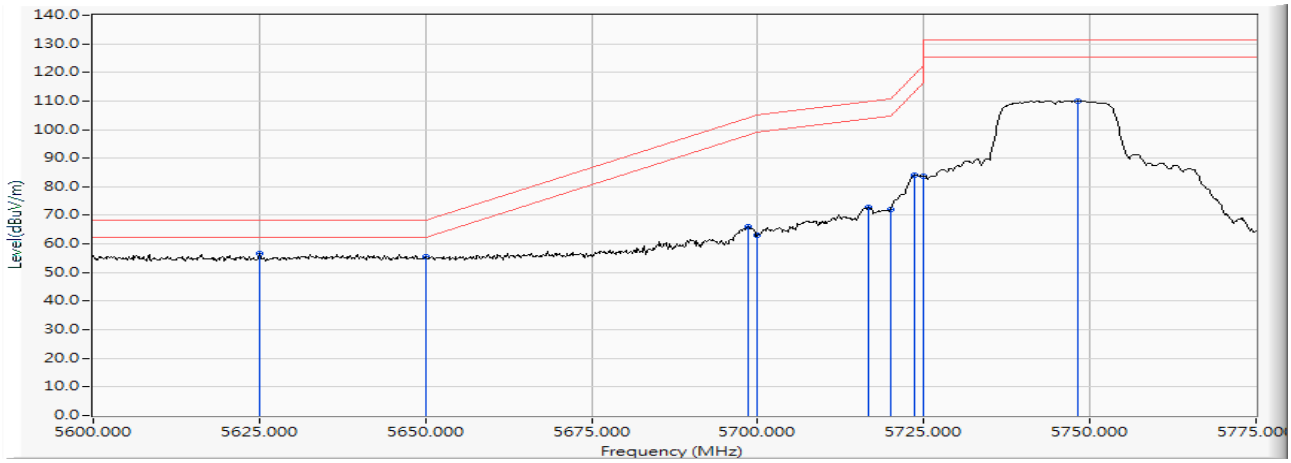
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5703.000	19.666	82.562	102.228	--	--	--
Vertical	5725.000	19.725	40.981	60.706	-7.514	68.220	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

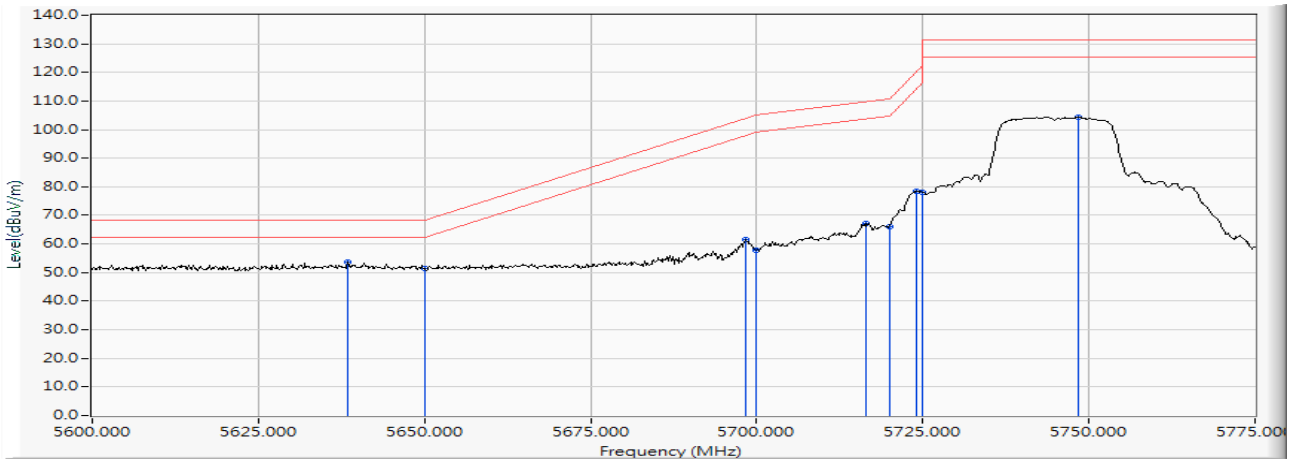
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5625.025	19.479	37.103	56.582	-11.638	68.220	Pass
Horizontal	5650.000	19.535	35.922	55.458	-12.762	68.220	Pass
Horizontal	5698.525	19.655	46.433	66.088	-38.021	104.109	Pass
Horizontal	5700.000	19.659	43.355	63.014	-42.186	105.200	Pass
Horizontal	5716.725	19.701	53.141	72.843	-37.040	109.883	Pass
Horizontal	5720.000	19.711	52.493	72.204	-38.596	110.800	Pass
Horizontal	5723.550	19.721	64.177	83.898	-34.996	118.894	Pass
Horizontal	5725.000	19.725	63.957	83.682	-38.518	122.200	Pass
Horizontal	5748.225	19.769	90.338	110.108	--	--	--



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

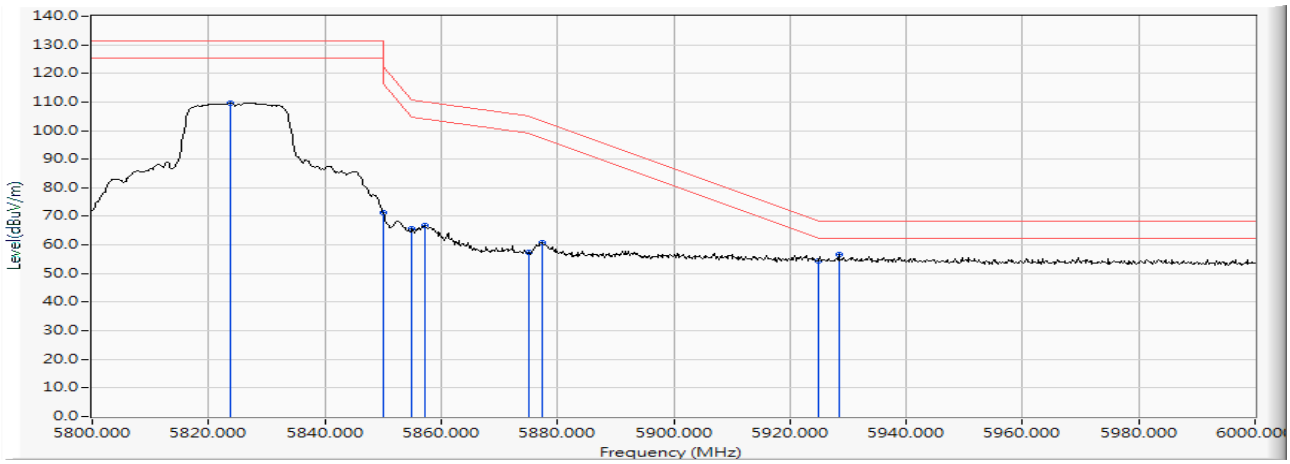
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5638.500	19.509	33.986	53.495	-14.725	68.220	Pass
Vertical	5650.000	19.535	31.794	51.330	-16.890	68.220	Pass
Vertical	5698.350	19.655	41.760	61.415	-42.565	103.980	Pass
Vertical	5700.000	19.659	38.156	57.815	-47.385	105.200	Pass
Vertical	5716.550	19.701	47.626	67.327	-42.507	109.834	Pass
Vertical	5720.000	19.711	46.347	66.058	-44.742	110.800	Pass
Vertical	5724.075	19.722	58.786	78.509	-41.582	120.091	Pass
Vertical	5725.000	19.725	58.281	78.006	-44.194	122.200	Pass
Vertical	5748.400	19.769	84.487	104.257	--	--	--



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

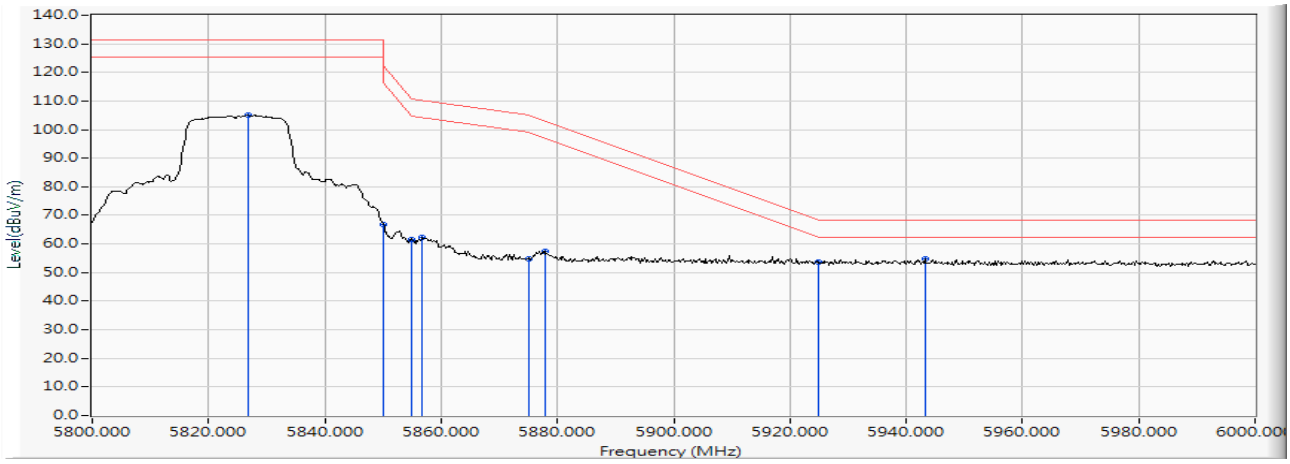
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5823.800	19.935	89.699	109.635	--	--	--
Horizontal	5850.000	19.992	51.476	71.468	-50.732	122.200	Pass
Horizontal	5855.000	20.003	45.703	65.705	-45.095	110.800	Pass
Horizontal	5857.200	20.007	46.979	66.986	-43.198	110.184	Pass
Horizontal	5875.000	20.048	37.440	57.487	-47.713	105.200	Pass
Horizontal	5877.400	20.053	40.823	60.876	-42.548	103.424	Pass
Horizontal	5925.000	20.181	34.320	54.502	-13.698	68.200	Pass
Horizontal	5928.400	20.189	36.417	56.607	-11.593	68.200	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5826.800	19.945	85.025	104.969	--	--	--
Vertical	5850.000	19.992	46.638	66.630	-55.570	122.200	Pass
Vertical	5855.000	20.003	41.461	61.463	-49.337	110.800	Pass
Vertical	5856.800	20.006	42.229	62.235	-48.061	110.296	Pass
Vertical	5875.000	20.048	34.764	54.811	-50.389	105.200	Pass
Vertical	5878.000	20.054	37.418	57.473	-45.507	102.980	Pass
Vertical	5925.000	20.181	33.636	53.818	-14.382	68.200	Pass
Vertical	5943.200	20.224	34.457	54.680	-13.520	68.200	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)	Result
38 (Peak)	5150.000	18.335	50.280	68.614	74.00	54.00	Pass
38 (Peak)	5187.826	18.424	82.556	100.980	--	--	--
38 (Average)	5150.000	18.335	35.534	53.868	74.00	54.00	Pass
38 (Average)	5195.072	18.433	72.966	91.399	--	--	--

Figure Channel 38: Horizontal (Peak)

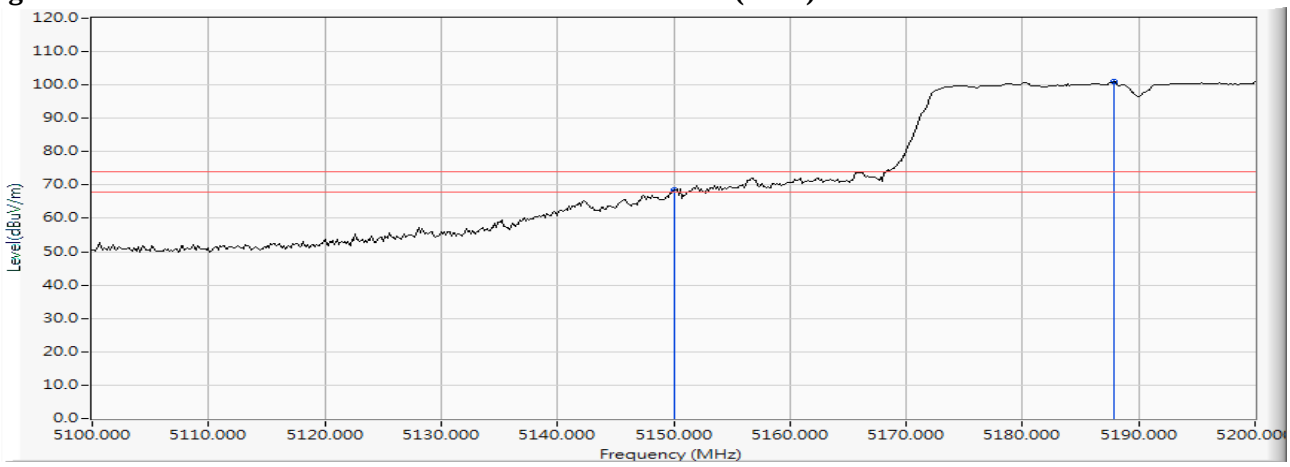
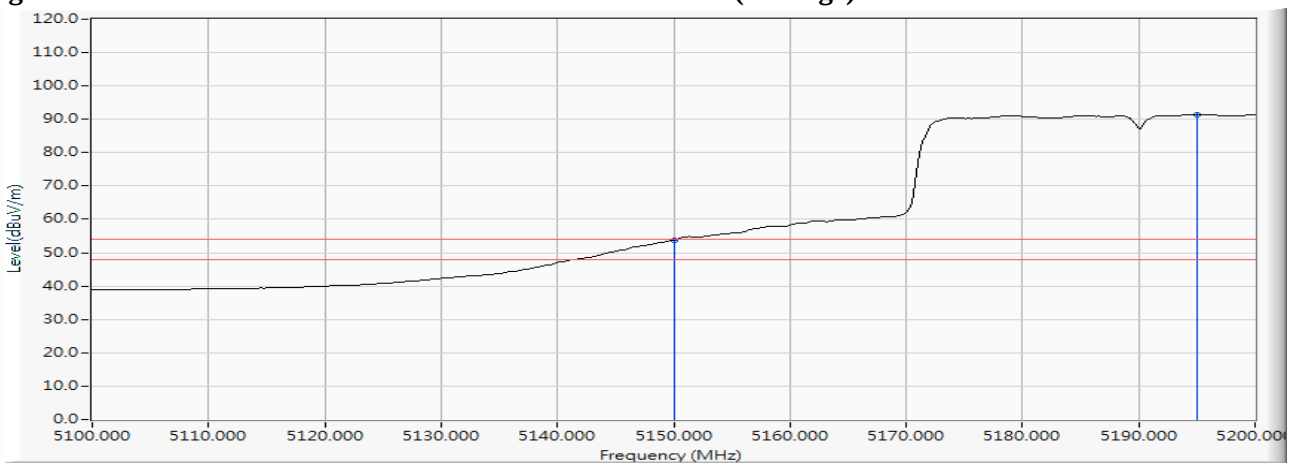


Figure Channel 38: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Average Limit (dBµV/m)	Result
38 (Peak)	5150.000	18.335	48.576	66.910	74.00	54.00	Pass
38 (Peak)	5200.000	18.439	78.084	96.523	--	--	--
38 (Average)	5150.000	18.335	34.024	52.358	74.00	54.00	Pass
38 (Average)	5195.217	18.433	67.995	86.428	--	--	--

Figure Channel 38: Vertical (Peak)

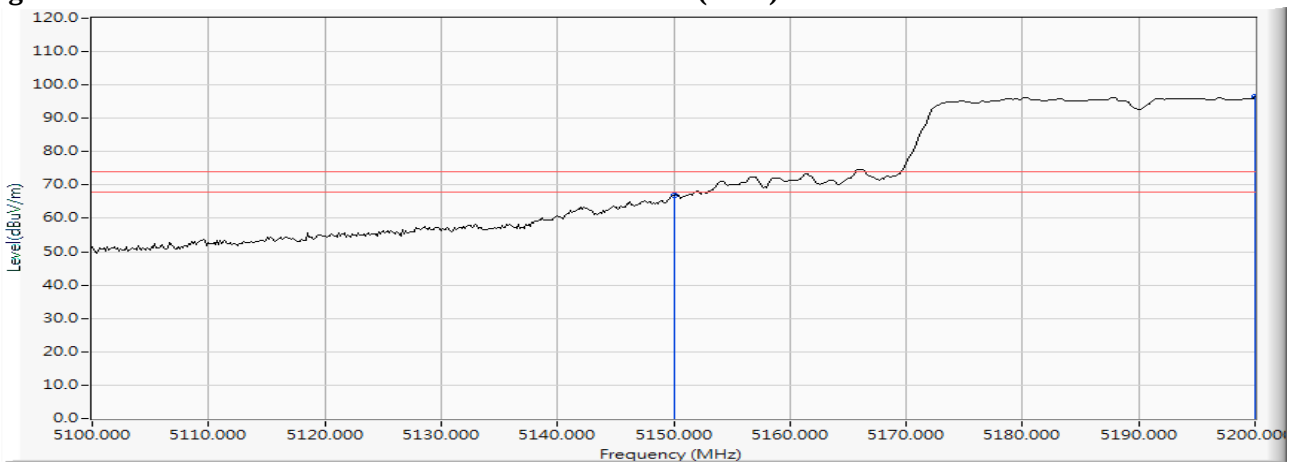
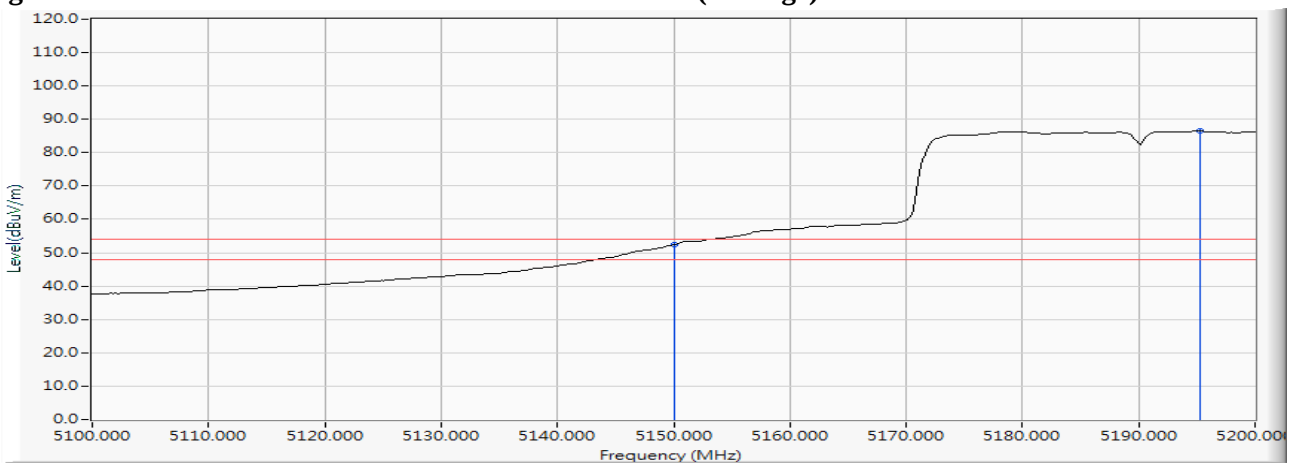


Figure Channel 38: Vertical (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5320.145	18.744	86.599	105.343	--	--	--
62 (Peak)	5350.000	18.833	46.900	65.733	74.00	54.00	Pass
62 (Peak)	5354.203	18.838	48.016	66.854	74.00	54.00	Pass
62 (Average)	5320.870	18.745	76.303	95.048	--	--	--
62 (Average)	5350.000	18.833	33.058	51.891	74.00	54.00	Pass

Figure Channel 62: Horizontal (Peak)

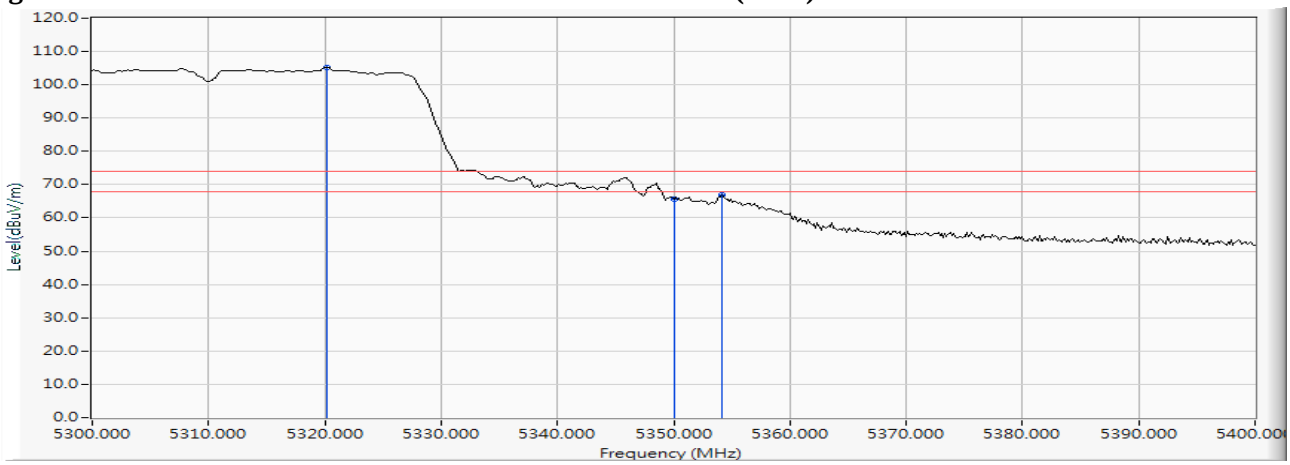
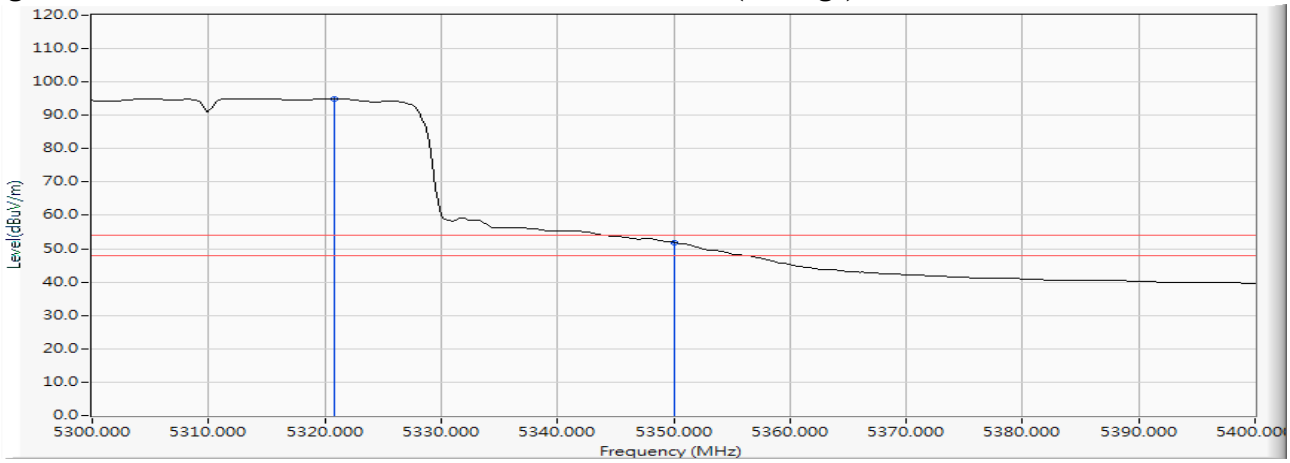


Figure Channel 62: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
62 (Peak)	5320.145	18.744	81.054	99.798	--	--	--
62 (Peak)	5350.000	18.833	47.818	66.651	74.00	54.00	Pass
62 (Peak)	5353.913	18.837	48.612	67.450	74.00	54.00	Pass
62 (Average)	5304.493	18.707	71.023	89.730	--	--	--
62 (Average)	5350.000	18.833	32.915	51.748	74.00	54.00	Pass

Figure Channel 62: Vertical (Peak)

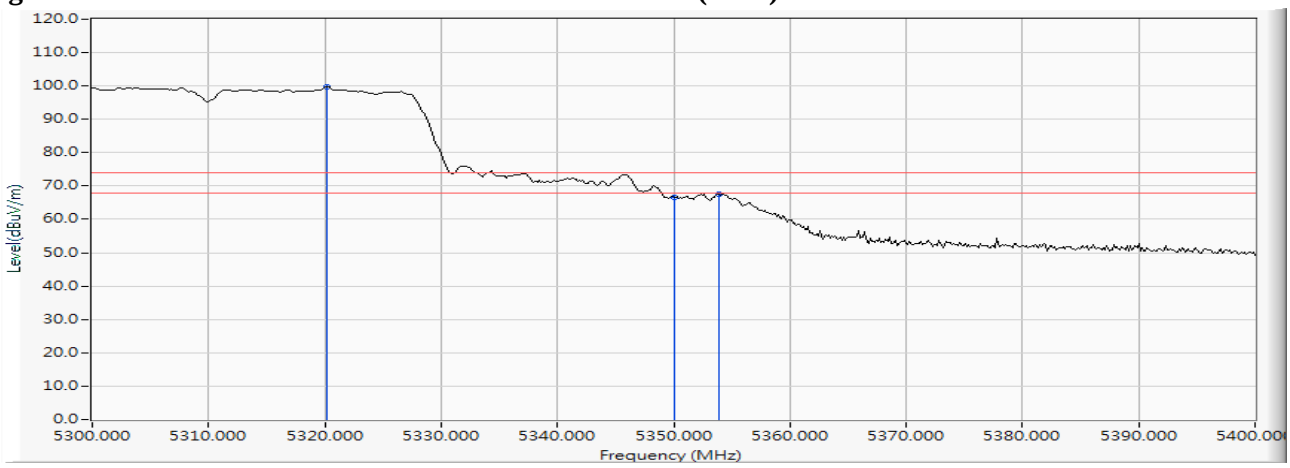
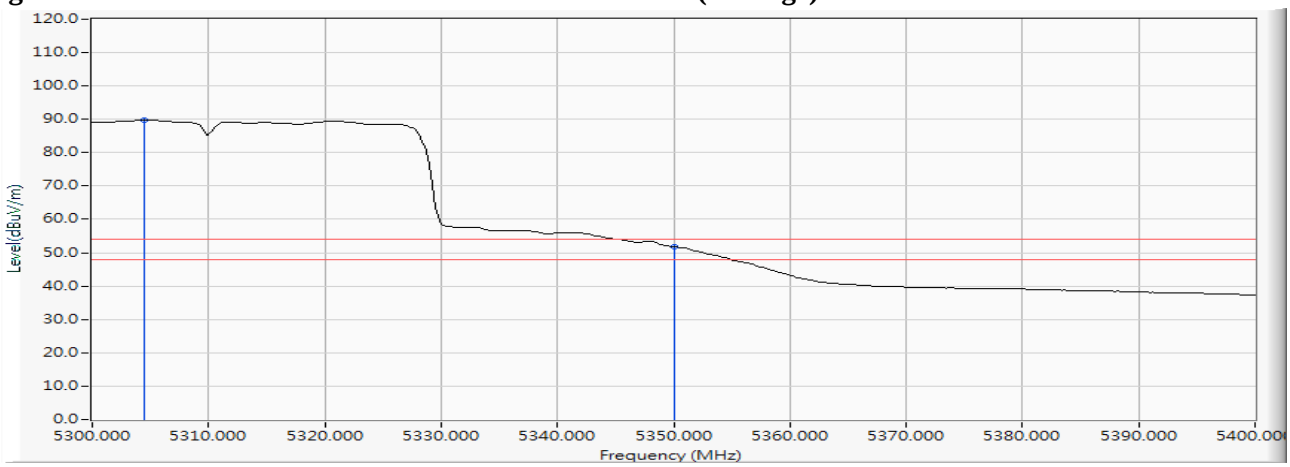


Figure Channel 62: Vertical (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBµV)	Emission Level (dBµV/m)	Peak Limit (dBµV/m)	Arerage Limit (dBµV/m)	Result
102 (Peak)	5460.000	19.097	50.735	69.832	74.00	54.00	Pass
102 (Peak)	5500.290	19.194	86.187	105.381	--	--	--
102 (Average)	5460.000	19.097	33.401	52.498	74.00	54.00	Pass
102 (Average)	5499.130	19.192	75.332	94.525	--	--	--

Figure Channel 102: Horizontal (Peak)

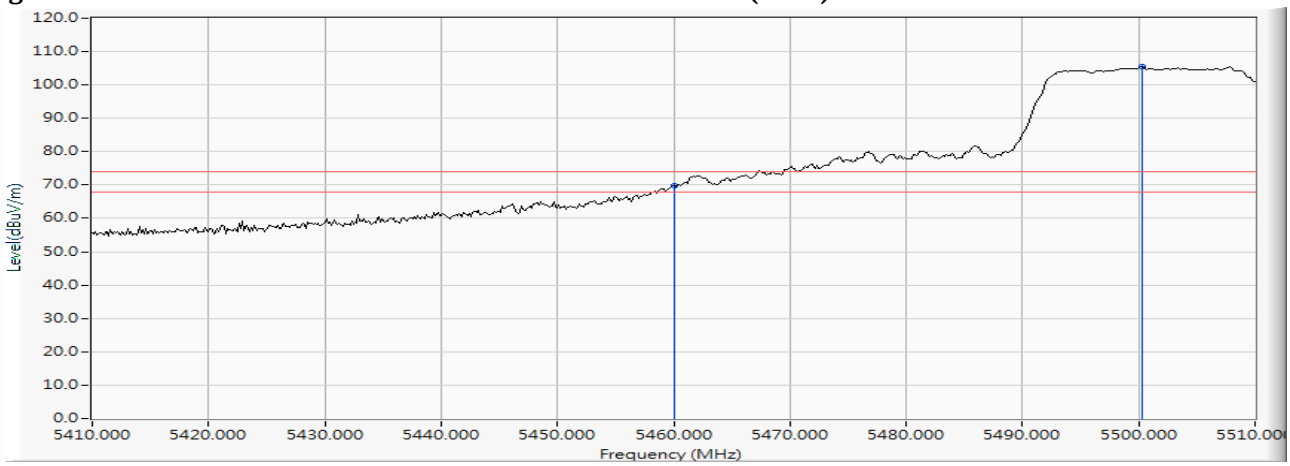
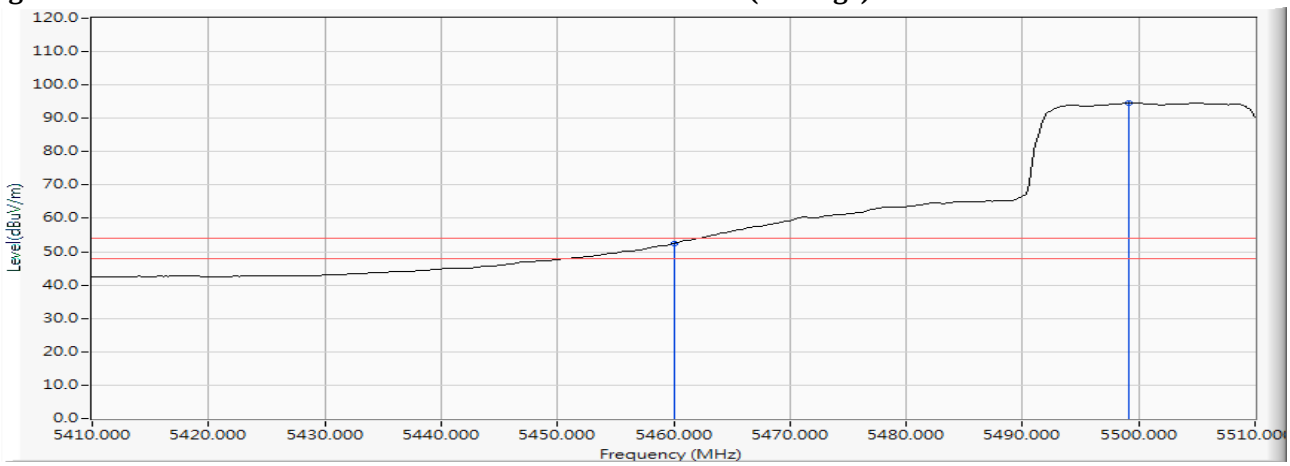


Figure Channel 102: Horizontal (Average)



Note:

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

Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2017/11/16

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Emission Level (dBμV/m)	Peak Limit (dBμV/m)	Arerage Limit (dBμV/m)	Result
102 (Peak)	5459.710	19.097	53.339	72.436	74.00	54.00	Pass
102 (Peak)	5460.000	19.097	52.050	71.147	74.00	54.00	Pass
102 (Peak)	5499.275	19.193	83.228	102.421	--	--	--
102 (Average)	5460.000	19.097	33.354	52.451	74.00	54.00	Pass
102 (Average)	5504.638	19.196	71.748	90.943	--	--	--

Figure Channel 102: Vertical (Peak)

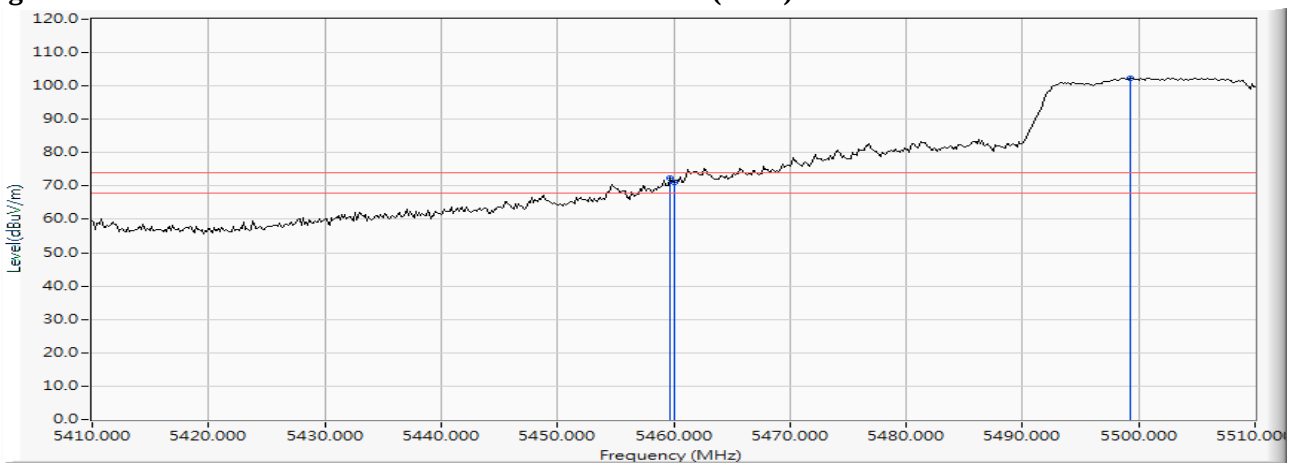
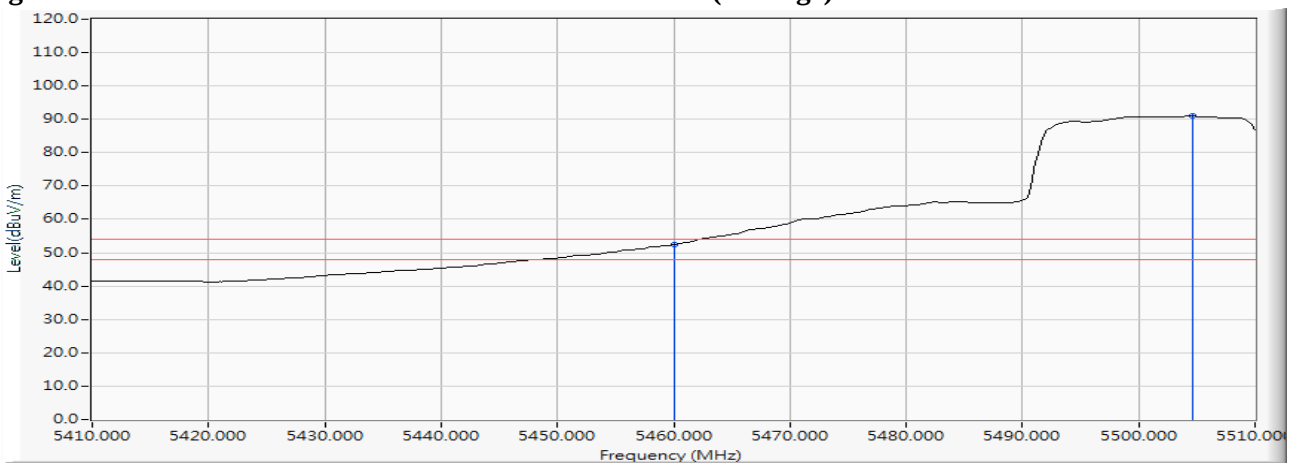


Figure Channel 102: Vertical (Average)



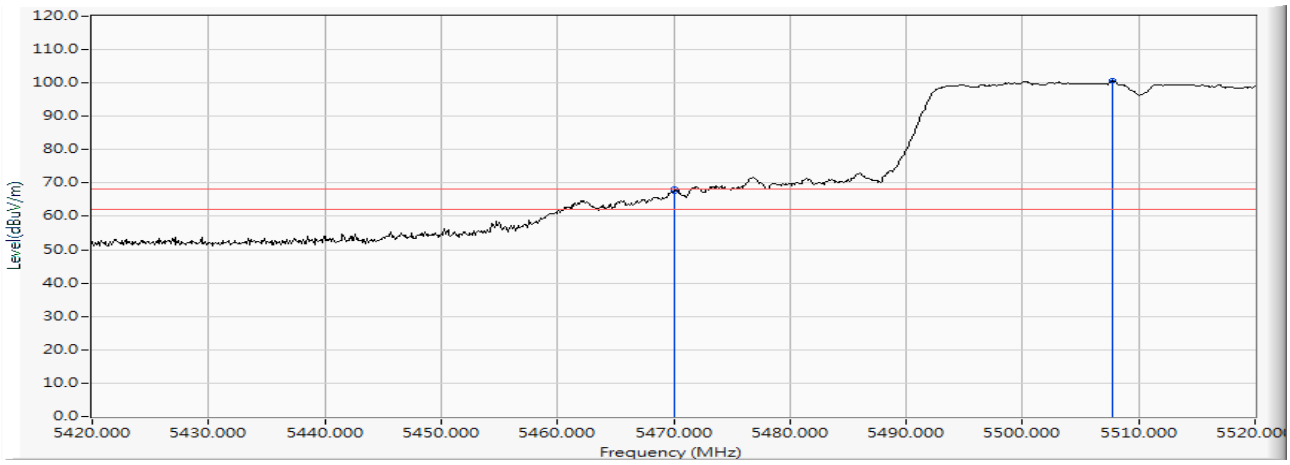
Note:

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

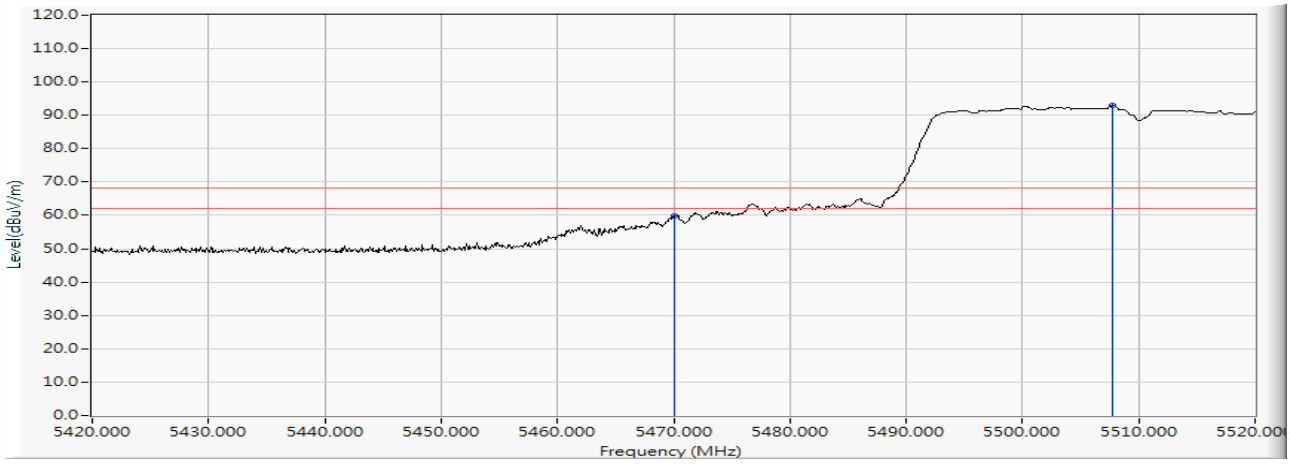
Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5470.000	19.110	48.558	67.668	-0.552	68.220	Pass
Horizontal	5470.100	19.110	49.003	68.113	-0.107	68.220	Pass
Horizontal	5507.700	19.197	81.369	100.566	--	--	--



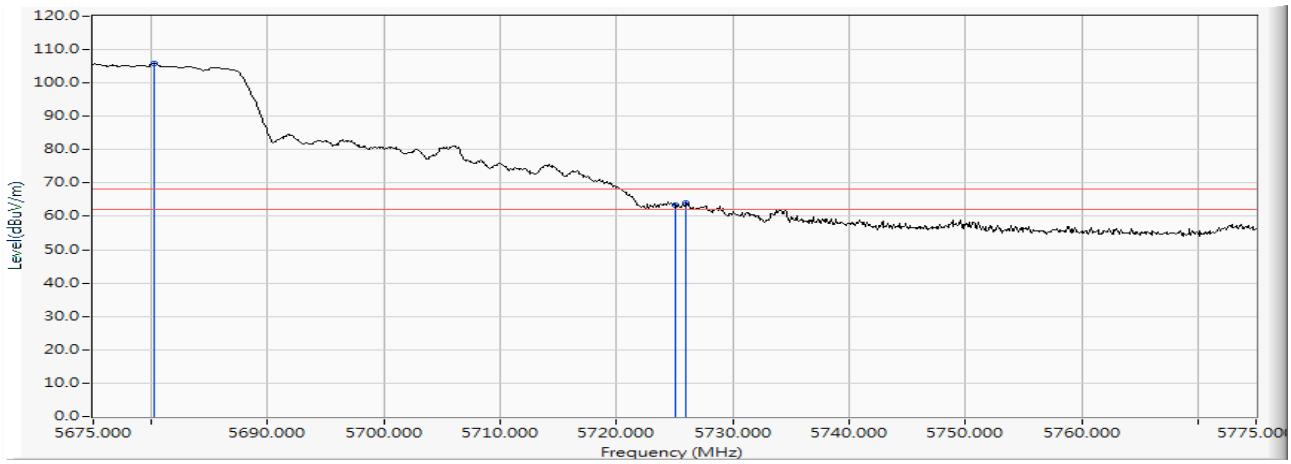
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5470.000	19.110	40.839	59.949	-8.271	68.220	Pass
Vertical	5507.800	19.196	73.639	92.836	--	--	--



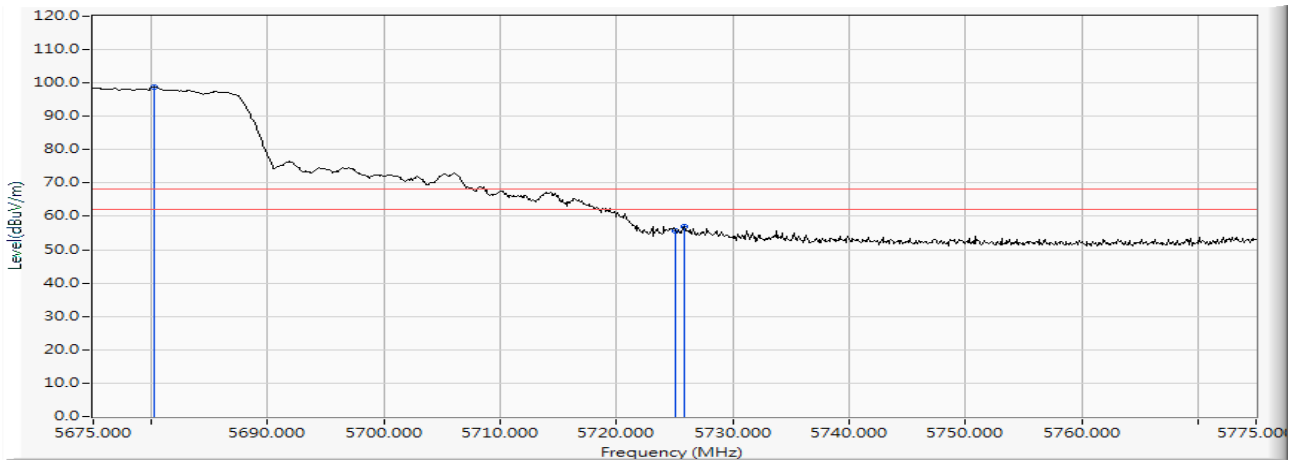
Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5680.200	19.603	86.318	105.921	--	--	--
Horizontal	5725.000	19.725	43.512	63.237	-4.983	68.220	Pass
Horizontal	5726.000	19.728	44.147	63.875	-4.345	68.220	Pass



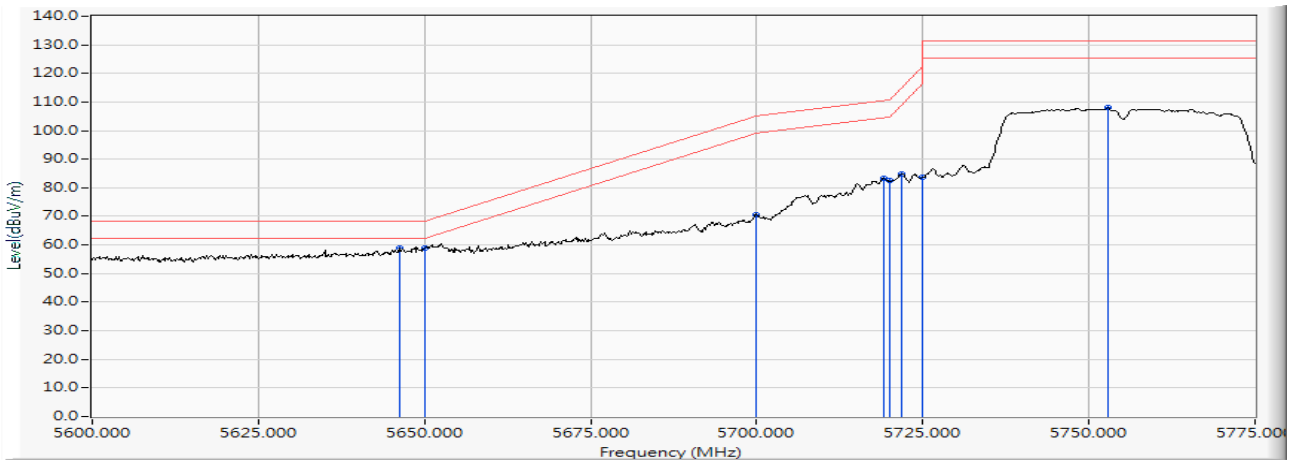
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5680.300	19.603	79.316	98.919	--	--	--
Vertical	5725.000	19.725	36.016	55.741	-12.479	68.220	Pass
Vertical	5725.800	19.727	37.339	57.066	-11.154	68.220	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

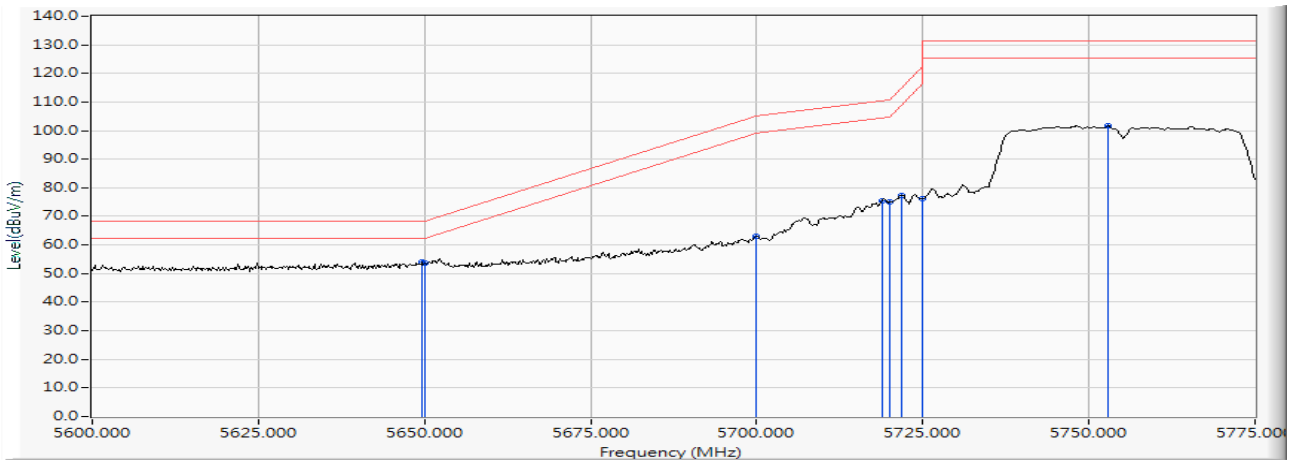
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5646.200	19.526	39.538	59.065	-9.155	68.220	Pass
Horizontal	5650.000	19.535	39.225	58.761	-9.459	68.220	Pass
Horizontal	5700.000	19.659	50.930	70.589	-34.611	105.200	Pass
Horizontal	5719.175	19.709	63.676	83.384	-27.185	110.569	Pass
Horizontal	5720.000	19.711	62.682	82.393	-28.407	110.800	Pass
Horizontal	5721.800	19.716	65.257	84.973	-29.931	114.904	Pass
Horizontal	5725.000	19.725	63.905	83.630	-38.570	122.200	Pass
Horizontal	5752.775	19.780	88.250	108.030	--	--	--



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5755MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

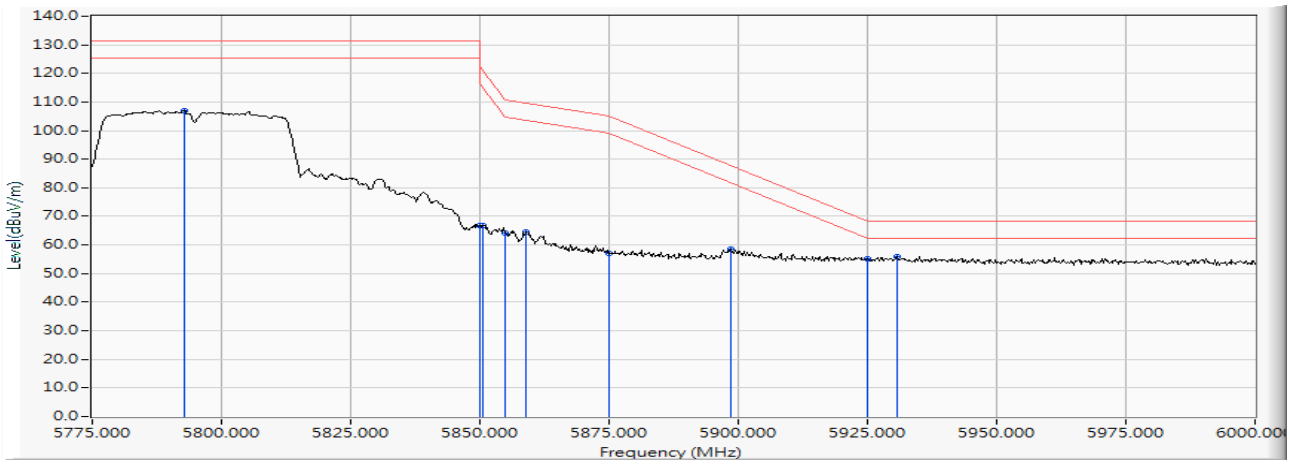
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5649.700	19.535	34.634	54.169	-14.051	68.220	Pass
Vertical	5650.000	19.535	33.955	53.491	-14.729	68.220	Pass
Vertical	5700.000	19.659	43.391	63.050	-42.150	105.200	Pass
Vertical	5718.825	19.707	55.917	75.624	-34.847	110.471	Pass
Vertical	5720.000	19.711	55.308	75.019	-35.781	110.800	Pass
Vertical	5721.800	19.716	57.760	77.476	-37.428	114.904	Pass
Vertical	5725.000	19.725	56.554	76.279	-45.921	122.200	Pass
Vertical	5752.950	19.781	81.944	101.724	--	--	--



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5795MHz)
Test Date : 2017/11/17

RF Radiated Measurement:

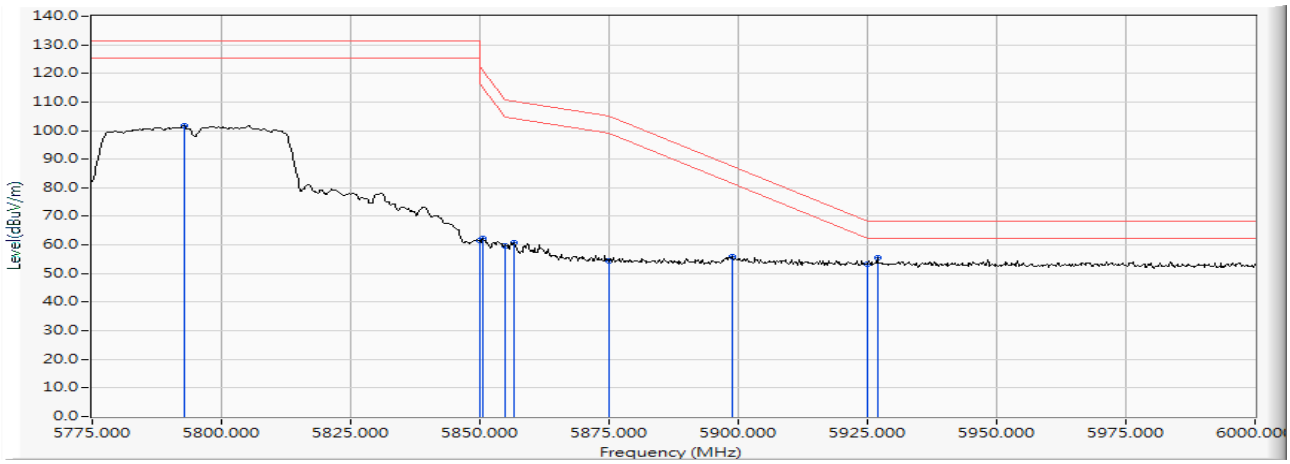
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Horizontal	5792.775	19.874	87.240	107.114	--	--	--
Horizontal	5850.000	19.992	46.779	66.771	-55.429	122.200	Pass
Horizontal	5850.600	19.994	46.945	66.938	-53.894	120.832	Pass
Horizontal	5855.000	20.003	44.099	64.101	-46.699	110.800	Pass
Horizontal	5858.925	20.011	44.734	64.745	-44.956	109.701	Pass
Horizontal	5875.000	20.048	37.006	57.053	-48.147	105.200	Pass
Horizontal	5898.525	20.101	38.491	58.592	-29.200	87.792	Pass
Horizontal	5925.000	20.181	35.035	55.217	-12.983	68.200	Pass
Horizontal	5930.700	20.195	35.628	55.823	-12.377	68.200	Pass



Product : VistaHub Wifi only
Test Item : Band Edge Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5795MHz)
Test Date : 2017/11/17

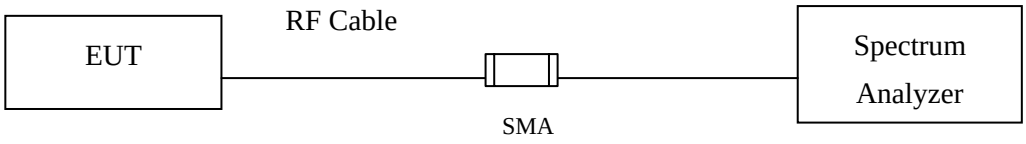
RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBm)	Measure Level (dBm/m)	Margin (dB)	Limit (dBm/m)	Result
Vertical	5792.775	19.874	81.914	101.788	--	--	--
Vertical	5850.000	19.992	41.481	61.473	-60.727	122.200	Pass
Vertical	5850.600	19.994	42.183	62.176	-58.656	120.832	Pass
Vertical	5855.000	20.003	39.804	59.806	-50.994	110.800	Pass
Vertical	5856.675	20.005	40.653	60.659	-49.672	110.331	Pass
Vertical	5875.000	20.048	34.403	54.450	-50.750	105.200	Pass
Vertical	5898.750	20.101	35.713	55.815	-31.810	87.625	Pass
Vertical	5925.000	20.181	33.165	53.347	-14.853	68.200	Pass
Vertical	5926.875	20.186	35.375	55.561	-12.639	68.200	Pass



7. Occupied Bandwidth

7.1. Test Setup



7.2. Limits

For the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz

7.3. .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.

7.4. Uncertainty

±671.83Hz

7.5. Test Result of Occupied Bandwidth

Product : VistaHub Wifi only
Test Item : Occupied Bandwidth Data
Test Mode : Mode 1: Transmit (802.11a-6Mbps)
Test Date : 2017/11/24

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	16450	>500	Pass
157	5785	16450	>500	Pass
165	5825	16400	>500	Pass

Figure Channel 149:

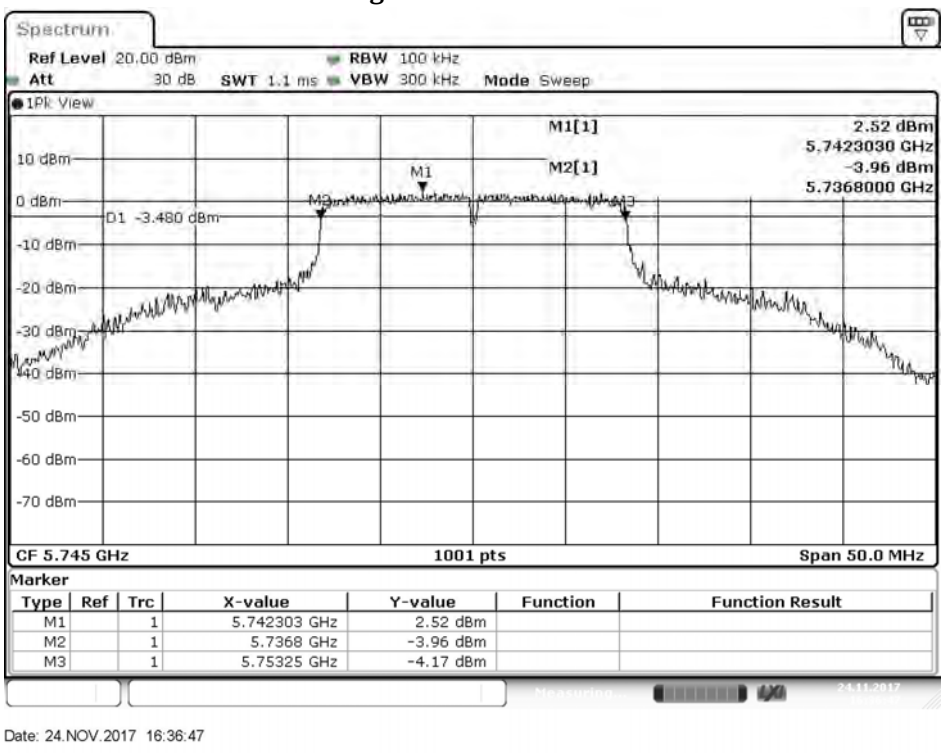
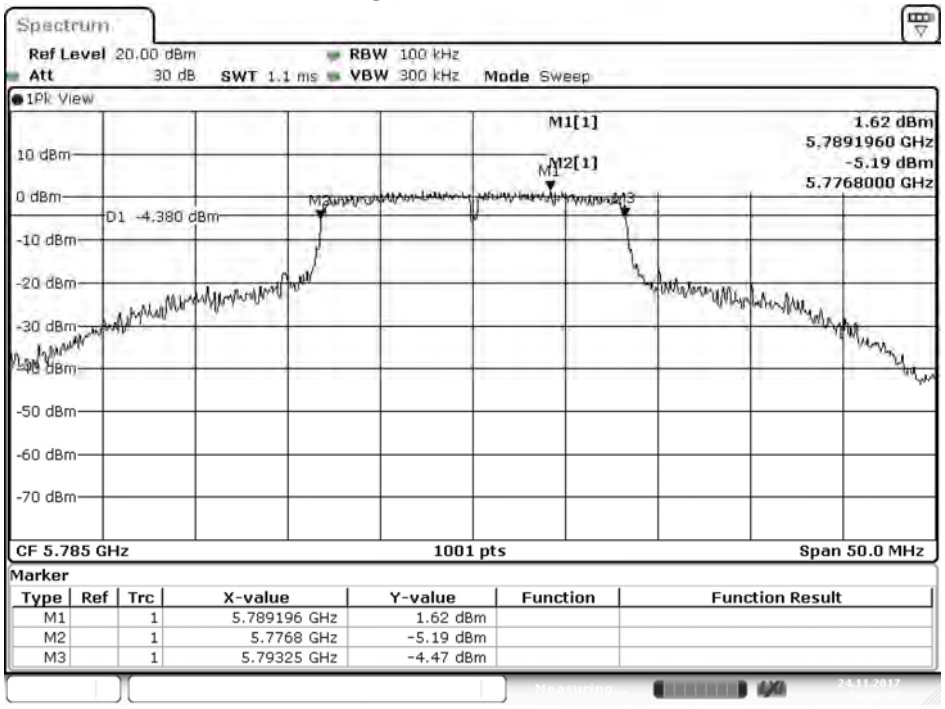
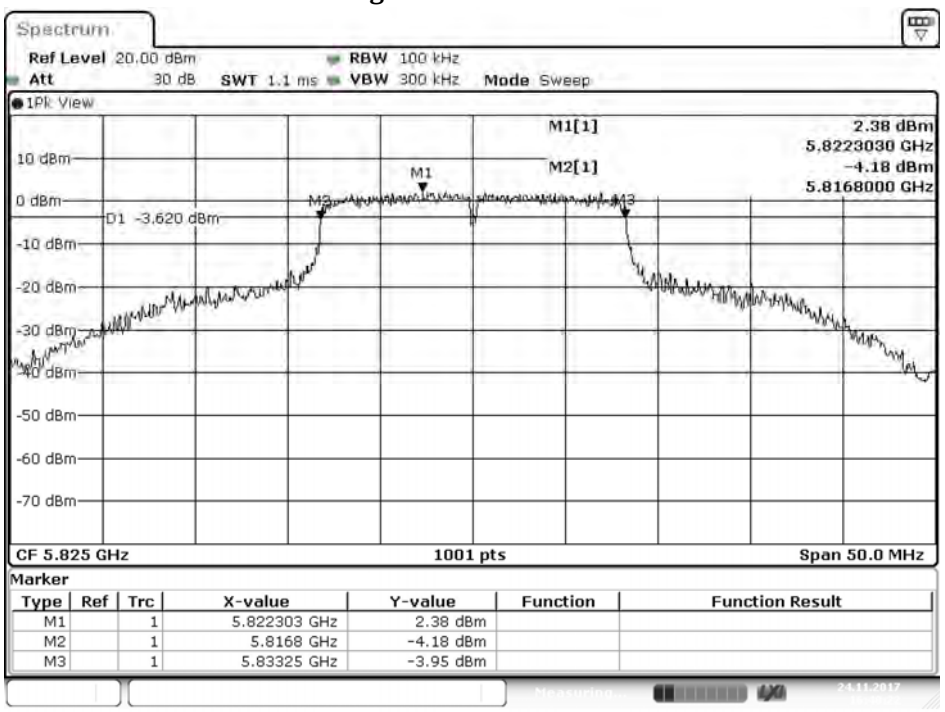


Figure Channel 157:



Date: 24.NOV.2017 16:38:07

Figure Channel 165:



Date: 24.NOV.2017 16:40:22

Product : VistaHub Wifi only
Test Item : Occupied Bandwidth Data
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)
Test Date : 2017/11/24

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745	17650	>500	Pass
157	5785	17700	>500	Pass
165	5825	17650	>500	Pass

Figure Channel 149:

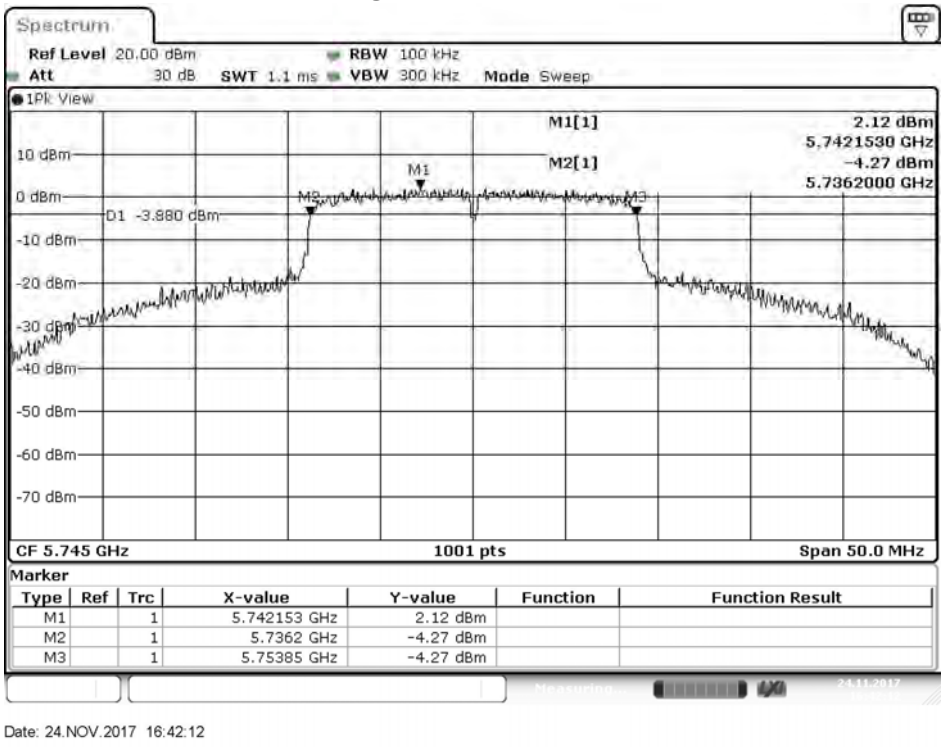
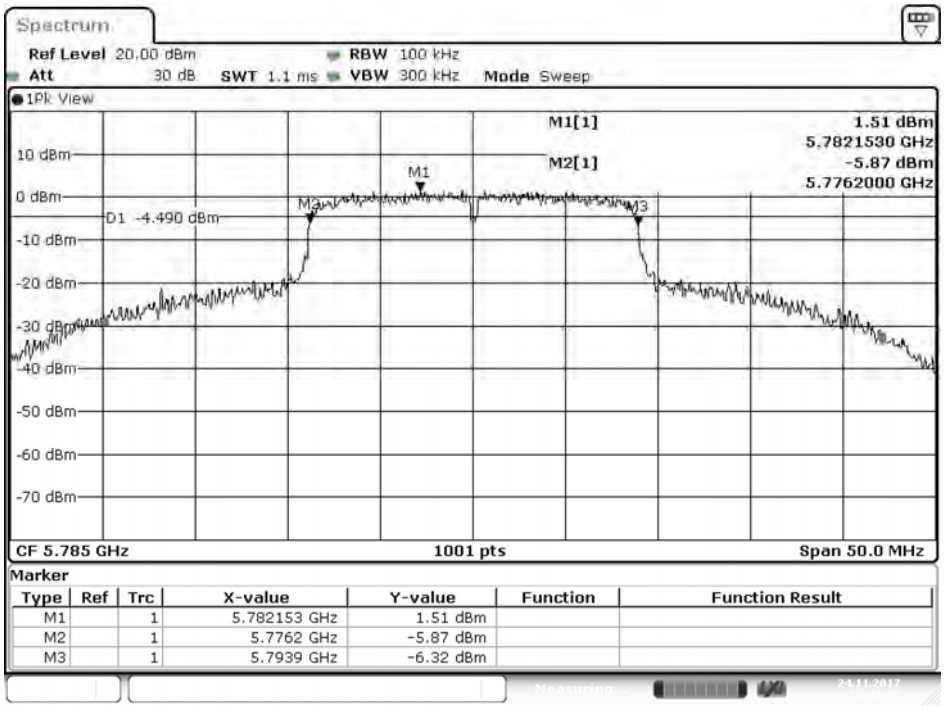
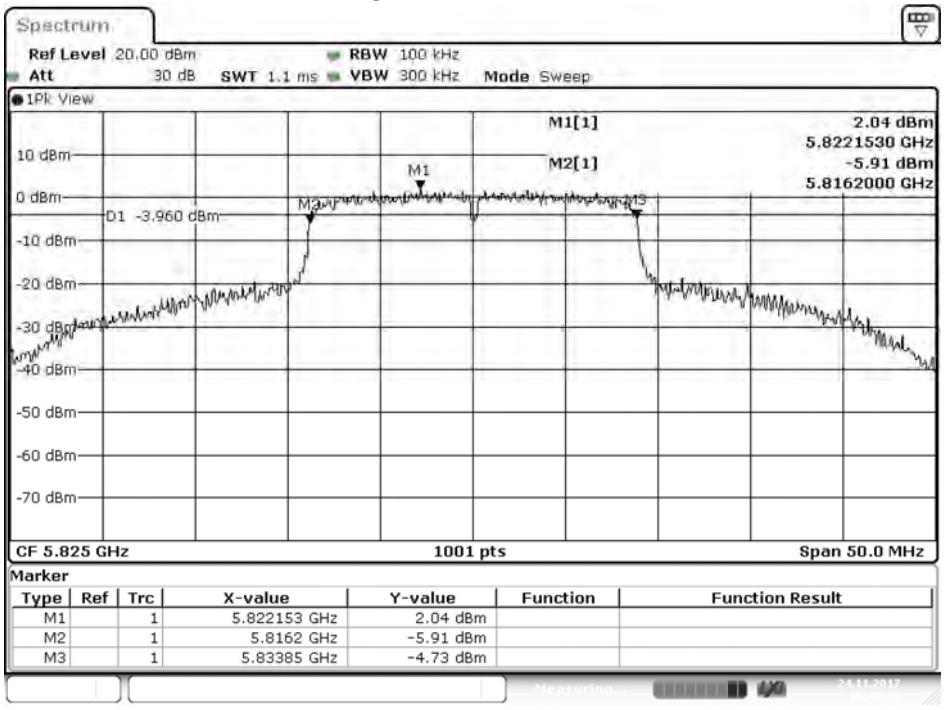


Figure Channel 157:



Date: 24.NOV.2017 16:43:59

Figure Channel 165:



Date: 24.NOV.2017 16:45:19

Product : VistaHub Wifi only
Test Item : Occupied Bandwidth Data
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)
Test Date : 2017/11/24

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755	36500	>500	Pass
159	5795	36500	>500	Pass

Figure Channel 151:

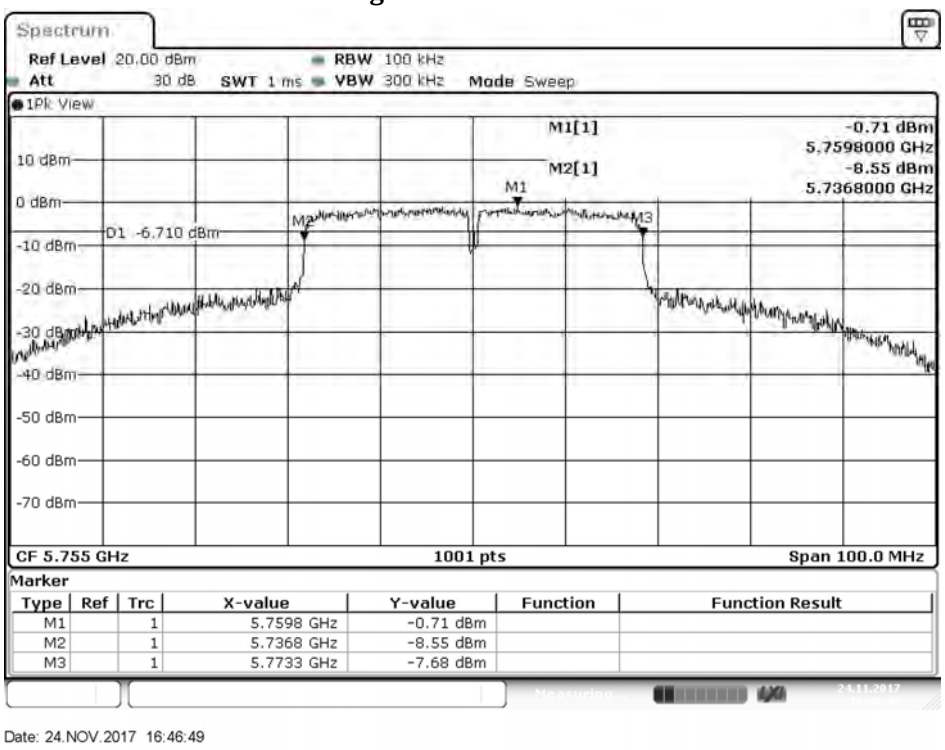
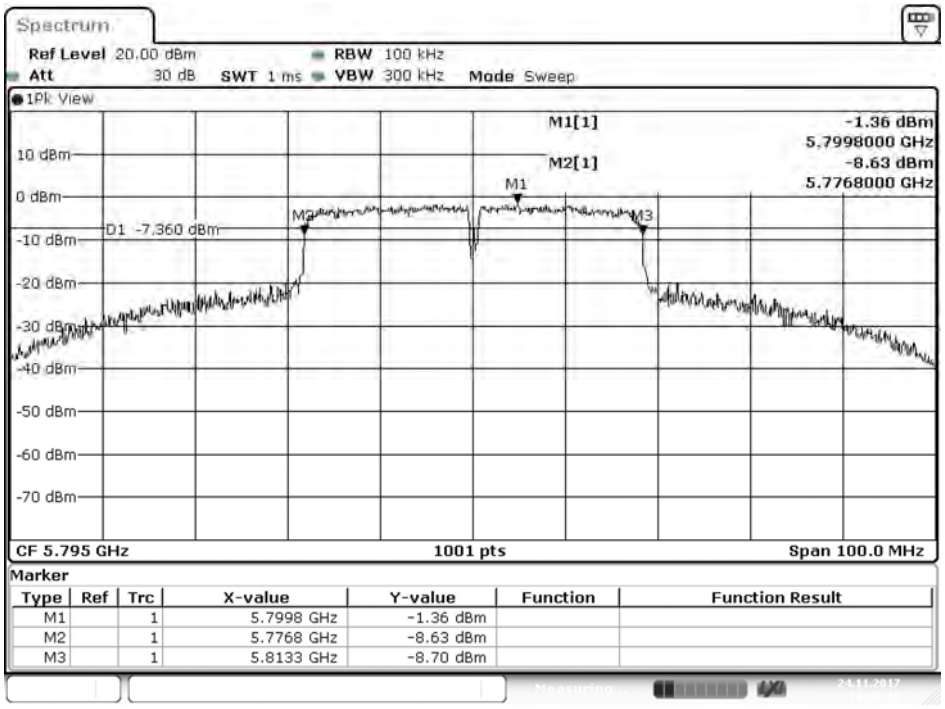
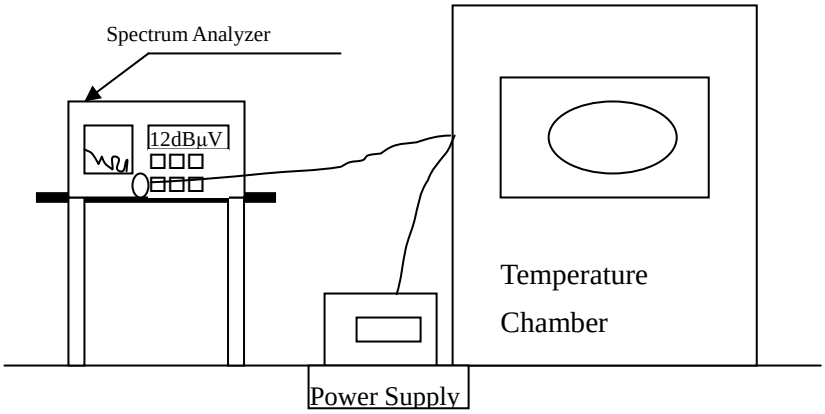


Figure Channel 159:



8. Frequency Stability

8.1. Test Setup



8.2. Limits

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified

8.3. 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.

8.4. Uncertainty

±671.83Hz

8.5. Test Result of Frequency Stability

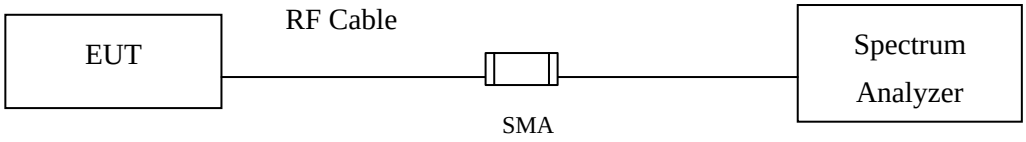
Product : VistaHub Wifi only
Test Item : Frequency Stability
Test Mode : Carrier Wave
Test Date : 2017/11/15

Temp./ Voltage	Frequency	Startup		2 minutes		5 minutes		10 minutes	
	(MHz)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50℃ 120V	5180	5179.990	-0.000193	5179.993	-0.0001351	5179.990	-0.0001931	5179.990	-0.0001931
	5220	5219.990	-0.000192	5219.990	-0.0001916	5219.990	-0.0001916	5219.990	-0.0001916
	5580	5579.990	-0.000179	5579.990	-0.0001792	5579.990	-0.0001792	5579.990	-0.0001792
	5785	5784.990	-0.000173	5784.991	-0.0001556	5784.990	-0.0001729	5784.990	-0.0001729
40℃ 120V	5180	5179.992	-0.000154	5179.990	-0.0001931	5179.992	-0.0001544	5179.992	-0.0001544
	5220	5219.990	-0.000192	5219.990	-0.0001916	5219.990	-0.0001916	5219.990	-0.0001916
	5580	5579.990	-0.000179	5579.991	-0.0001613	5579.994	-0.0001075	5579.994	-0.0001075
	5785	5784.991	-0.000156	5784.991	-0.0001556	5784.991	-0.0001556	5784.991	-0.0001556
30℃ 120V	5180	5179.992	-0.000154	5179.992	-0.0001544	5179.992	-0.0001544	5179.992	-0.0001544
	5220	5219.990	-0.000192	5219.990	-0.0001916	5219.990	-0.0001916	5219.990	-0.0001916
	5580	5579.990	-0.000179	5579.990	-0.0001792	5579.990	-0.0001792	5579.990	-0.0001792
	5785	5784.991	-0.000156	5784.991	-0.0001556	5784.991	-0.0001556	5784.991	-0.0001556
20℃ 120V	5180	5179.990	-0.000193	5179.990	-0.0001931	5179.990	-0.0001931	5179.990	-0.0001931
	5220	5219.990	-0.000192	5219.990	-0.0001916	5219.990	-0.0001916	5219.990	-0.0001916
	5580	5579.990	-0.000179	5579.996	-0.0000717	5579.990	-0.0001792	5579.990	-0.0001792
	5785	5784.990	-0.000173	5784.996	-0.0000691	5784.990	-0.0001729	5784.990	-0.0001729
10℃ 120V	5180	5179.960	-0.000772	5179.970	-0.0005792	5179.960	-0.0007722	5179.960	-0.0007722
	5220	5219.990	-0.000192	5219.990	-0.0001916	5219.990	-0.0001916	5219.990	-0.0001916
	5580	5579.997	-0.000054	5579.995	-0.0000896	5579.997	-0.0000538	5579.997	-0.0000538
	5785	5784.995	-0.000086	5784.992	-0.0001383	5784.995	-0.0000864	5784.995	-0.0000864
0℃ 120V	5180	5179.997	-0.000058	5179.971	-0.0005598	5179.997	-0.0000579	5179.970	-0.0005792
	5220	5219.980	-0.000383	5219.980	-0.0003831	5219.990	-0.0001916	5219.976	-0.0004598
	5580	5579.970	-0.000538	5579.970	-0.0005376	5579.970	-0.0005376	5579.970	-0.0005376
	5785	5784.960	-0.000691	5784.960	-0.0006914	5784.960	-0.0006914	5784.960	-0.0006914
-10℃ 120V	5180	5179.973	-0.000521	5179.973	-0.0005212	5179.973	-0.0005212	5179.998	-0.0000386
	5220	5219.973	-0.000517	5219.975	-0.0004789	5219.975	-0.0004789	5219.974	-0.0004981
	5580	5579.973	-0.000484	5579.975	-0.0004480	5579.974	-0.0004660	5579.975	-0.0004480
	5785	5784.975	-0.000432	5784.975	-0.0004322	5784.980	-0.0003544	5784.980	-0.0003544
	5180	5179.990	-0.000193	5179.992	-0.0001622	5179.990	-0.0001931	5179.990	-0.0001931

-20℃ 120V	**5220**	5219.975	-0.000479	5219.960	-0.0007663	5219.940	-0.0011494	5219.930	-0.0013410
	5580	5579.970	-0.000538	5579.976	-0.0004301	5579.976	-0.0004301	5579.976	-0.0004301
	5785	5784.980	-0.000346	5784.980	-0.0003457	5784.980	-0.0003457	5784.978	-0.0003803
-30℃ 120V	**5180**	5179.990	-0.000193	5179.996	-0.0000734	5179.997	-0.0000579	5179.997	-0.0000579
	5220	5219.975	-0.000479	5219.995	-0.0000958	5219.990	-0.0001916	5219.990	-0.0001916
	5580	5579.970	-0.000538	5579.970	-0.0005376	5579.970	-0.0005376	5579.970	-0.0005376
	5785	5784.960	-0.000691	5784.960	-0.0006914	5784.960	-0.0006914	5784.960	-0.0006914
20℃ 102V	**5180**	5179.994	-0.000116	5179.941	-0.0011390	5179.994	-0.0001158	5179.970	-0.0005792
	5220	5219.973	-0.000517	5219.992	-0.0001533	5219.993	-0.0001341	5219.970	-0.0005747
	5580	5579.920	-0.001434	5579.970	-0.0005376	5579.970	-0.0005376	5579.973	-0.0004839
	5785	5784.970	-0.000519	5784.960	-0.0006914	5784.960	-0.0006914	5784.950	-0.0008643
20℃ 138V	**5180**	5179.960	-0.000772	5179.951	-0.0009460	5179.960	-0.0007722	5179.994	-0.0001158
	5220	5219.972	-0.000536	5219.993	-0.0001341	5219.996	-0.0000766	5219.995	-0.0000958
	5580	5579.970	-0.000538	5579.996	-0.0000717	5579.997	-0.0000538	5579.994	-0.0001075
	5785	5784.973	-0.000467	5784.991	-0.0001556	5784.960	-0.0006914	5784.993	-0.0001210
Limit		± 0.02%							

9. Duty Cycle

9.1. Test Setup



9.2. Test Procedure

The EUT was setup according to ANSI C63.10 2013; tested according to NII test procedure of KDB789033 for compliance to FCC 47CFR 15.407 requirements.

9.3. Uncertainty

± 2.31msec

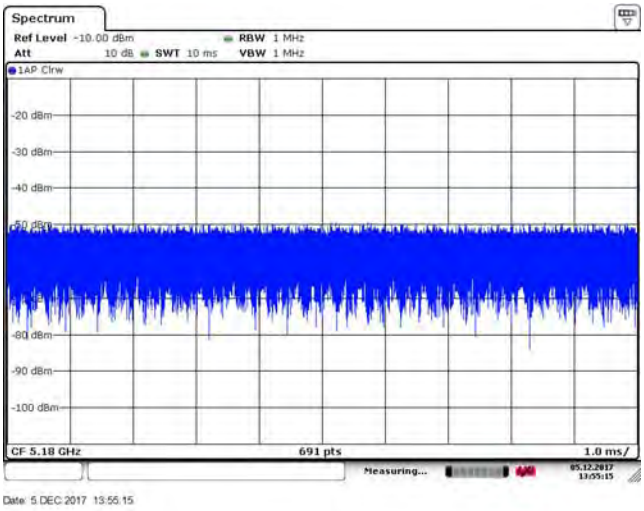
9.4. Test Result of Duty Cycle

Product : VistaHub Wifi only
Test Item : Duty Cycle
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

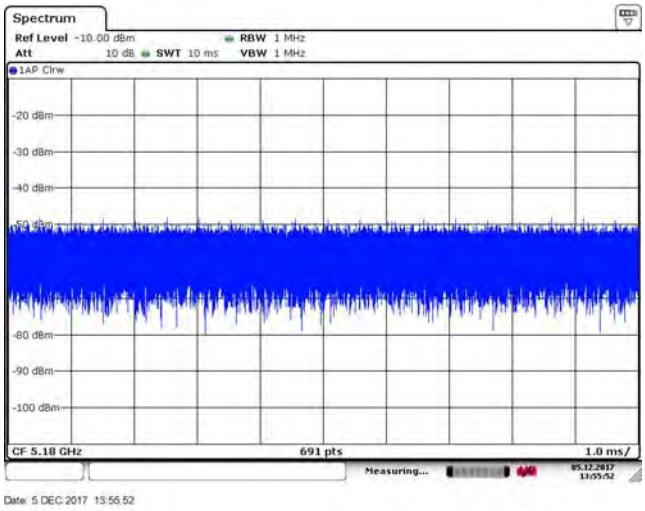
Duty Cycle Formula:
Duty Cycle = Ton / (Ton + Toff)
Duty Factor = 10 Log (1/Duty Cycle)
Results:

Mode	Ton (ms)	Ton + Toff (ms)	Duty Cycle (%)	Duty Factor (dB)
802.11 a	10	10	100	0
802.11 n20	10	10	100	0
802.11 n40	10	10	100	0

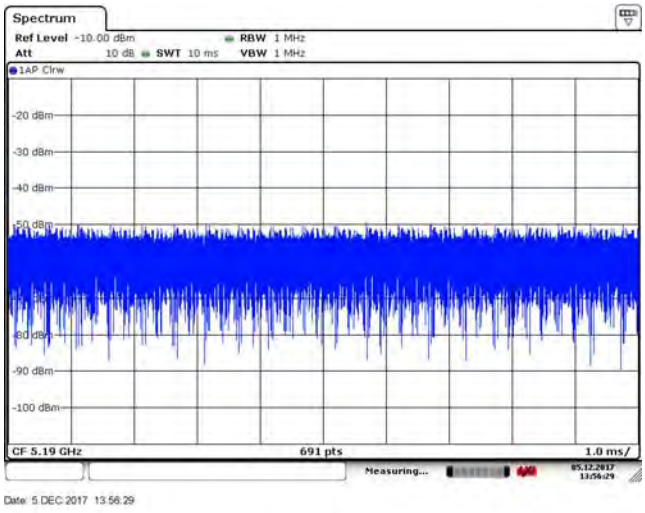
802.11a



802.11n20



802.11n40



10. EMI Reduction Method During Compliance Testing

No modification was made during testing.