FCC Test Report

Product Name	OTT BOX
Model No	SB520
FCC ID	JCK-SB5204KOTTBK

Applicant	Giga Byte Technology Co Ltd
Address	No.6, Bau Chiang Road,Hsin-Tien,Taipei Hsien,Taiwan

Date of Receipt	Aug. 04, 2015
Issued Date	Sep. 01, 2015
Report No.	1580191R-RFUSP05V00
Report Version	V1.0

Testing Laboratory
3023

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

Issued Date: Sep. 01, 2015
Report No.: 1580191R-RFUSP05V00

Product Name	OTT BOX
Applicant	Giga Byte Technology Co Ltd
Address	No.6, Bau Chiang Road,Hsin-Tien,Taipei Hsien,Taiwan
Manufacturer	GIGA-BYTE TECHNOLOGY CO., LTD
Model No.	SB520
FCC ID.	JCK-SB5204KOTTBK
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	GIGABYTE
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2014 ANSI C63.4: 2014, ANSI C63.10: 2013 789033 D02 General UNII Test Procedures New Rules v01
Test Result	Complied

Documented By : Joanne Lin

(Senior Adm. Specialist / Joanne Lin)

Tested By : Ivan Chuang

(Assistant Engineer / Ivan Chuang)

Approved By :

(Director / Vincent Lin)

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Attachment 1: EUT Test Photographs
Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	OTT BOX
Trade Name	GIGABYTE
FCC ID.	JCK-SB5204KOTTBK
Model No.	SB520
Frequency Range	802.11a/n-20MHz: 5180-5320MHz, 5500-5700MHz, 5745-5825MHz 802.11n-40MHz: 5190-5310MHz, 5510-5670MHz 802.11ac-20MHz: 5720MHz, 802.11ac-40MHz: 5710MHz 802.11ac-80MHz: 5210-5290MHz, 5530-5690MHz, 5775MHz
Number of Channels	802.11a/n-20MHz: 21; 802.11n-40MHz: 7 802.11ac-20MHz: 1, 802.11ac-40MHz: 1, 802.11ac-80MHz: 5
Data Rate	802.11a: 6 - 54Mbps 802.11n: up to 150Mbps 802.11ac-80MHz: up to 433.3MHz
Channel Control	Auto
Type of Modulation	802.11a/n/ac:OFDM, BPSK, QPSK, 16QAM, 64QAM, 256QAM
Antenna type	PIFA Antenna
Antenna Gain	Refer to the table “Antenna List”
Remote control	1set
HDMI Cable	Shielded, 1.2m
IR Cable	Non-Shielded, 1.8m
Power Adapter	MFR: APD, M/N: WB-18D12R Input: AC 100-240V~50-60Hz, 0.5A Max Output: 12V⎓1.5A Cable Out: Non-Shielded, 1.5m, with one ferrite core bonded.

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	ACON	APP6P-701316	PIFA	3.54dBi For 5.15~5.25GHz 3.50dBi for 5.25~5.35GHz 3.41dBi for 5.47~5.725GHz 3.52dBi for 5.725~5.825GHz

Note: The antenna of EUT is conform to FCC 15.203

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz
Channel 52:	5260 MHz	Channel 56:	5280 MHz	Channel 60:	5300 MHz	Channel 64:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 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 134:	5670 MHz		

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

Channel	Frequency
Channel 144:	5720 MHz

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

Channel	Frequency
Channel 142:	5710 MHz

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

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

Note:

1. This device is a OTT BOX with a built-in WLAN and Bluetooth transceiver, this report for WLAN.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11a is chain A)
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps、802.11n-20BW is 7.2Mbps、802.11n-40BW is 15Mbps and 802.11ac(80M-BW) is 32.5 Mbps)
5. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.
6. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

Test Mode	Mode 1: Transmit (802.11a-6Mbps) Mode 2: Transmit (802.11n-20BW 7.2Mbps) Mode 3: Transmit (802.11n-40BW 15Mbps) Mode 4: Transmit (802.11ac-20BW-7.2Mbps) Mode 5: Transmit (802.11ac-40BW-15Mbps) Mode 6: Transmit (802.11ac-80BW-32.5Mbps)

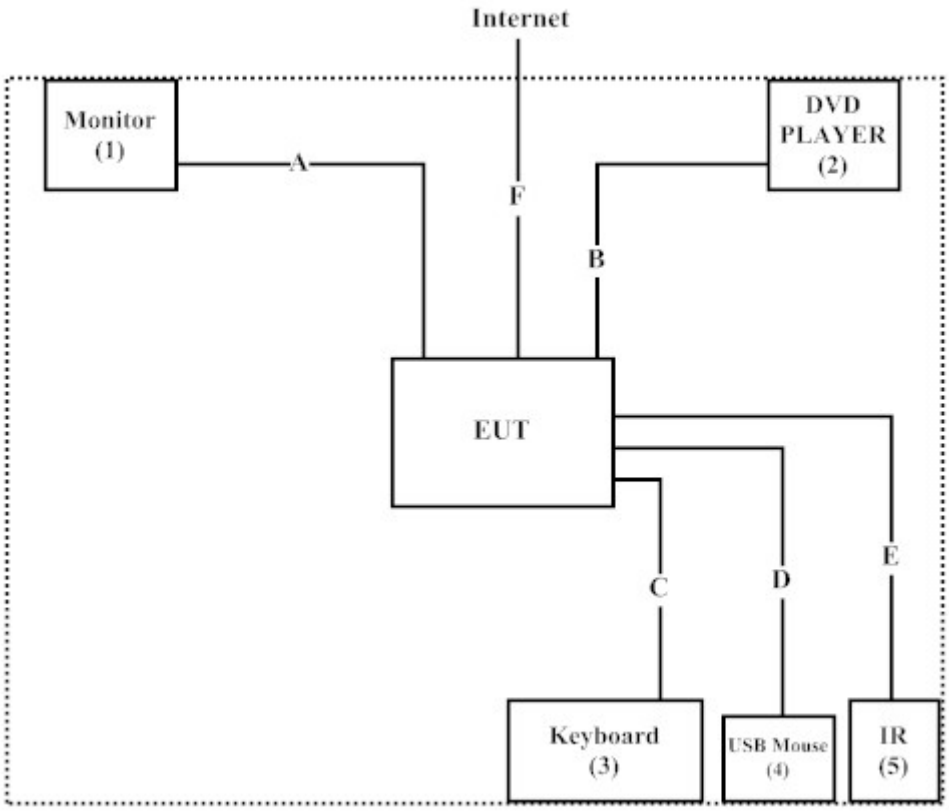
1.3. Tested System Datails

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	Monitor	Dell	2407WFPb	CN-0FC255-46633-67T-047S	Non-Shielded, 1.8m
2	DVD PLAYER	Panasonic	DVD-S97	VC6GG001022R	Non-Shielded, 1.8m
3	Keyboard	DELL	SK-8115	MY-0DJ325-71619-6A3-1911	N/A
4	USB Mouse	DELL	M056U0A	F0Y01YEQ	N/A
5	IR	Always Tai Lai CO.,LTD.	Y001-0572	N/A	N/A

Signal Cable Type		Signal cable Description
A	HDMI Cable	Shielded, 1.2m
B	OPTICAL Cable	Non-Shielded, 1.8m
C	USB Cable	Shielded, 1.8m, with one ferrite core bonded.
D	USB Cable	Shielded, 1.8m
E	IR Cable	Non-Shielded, 1.8m
F	RJ-45 Cable	Non-Shielded, 3m

1.4. Configuration of tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown on 1.4
(2) Execute “Ampak RF Test Tool V5.2” program on the EUT.
(3) Configure the test mode, the test channel, and the data rate.
(4) Start the continuous transmission.
(5) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

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

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

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

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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

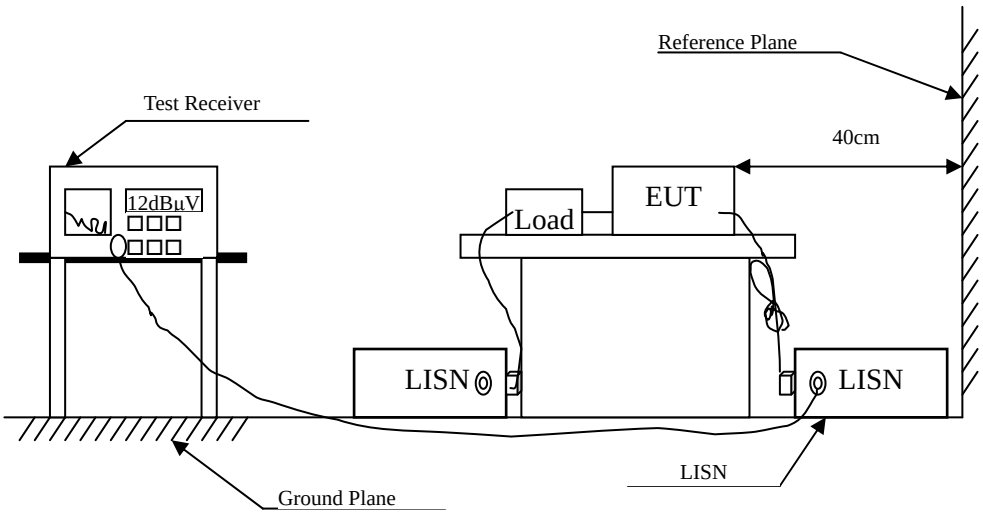
2.1. Test Equipment

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

Note:

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

2.2. Test Setup



2.3. Limits

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

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

2.4. Test Procedure

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

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5210MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 1					
Quasi-Peak					
0.189	9.650	31.590	41.240	-23.646	64.886
0.220	9.652	29.070	38.722	-25.278	64.000
0.259	9.654	23.380	33.034	-29.852	62.886
0.345	9.658	22.000	31.658	-28.771	60.429
0.388	9.661	28.130	37.791	-21.409	59.200
0.642	9.675	14.350	24.025	-31.975	56.000
Average					
0.189	9.650	19.820	29.470	-25.416	54.886
0.220	9.652	18.670	28.322	-25.678	54.000
0.259	9.654	11.550	21.204	-31.682	52.886
0.345	9.658	14.910	24.568	-25.861	50.429
0.388	9.661	22.160	31.821	-17.379	49.200
0.642	9.675	4.570	14.245	-31.755	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 : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5210MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 2					
Quasi-Peak					
0.162	9.658	33.550	43.208	-22.449	65.657
0.181	9.659	30.780	40.439	-24.675	65.114
0.209	9.661	27.550	37.211	-27.103	64.314
0.259	9.664	20.780	30.444	-32.442	62.886
0.310	9.656	15.410	25.066	-36.363	61.429
0.384	9.660	17.960	27.620	-31.694	59.314
Average					
0.162	9.658	18.910	28.568	-27.089	55.657
0.181	9.659	16.580	26.239	-28.875	55.114
0.209	9.661	12.550	22.211	-32.103	54.314
0.259	9.664	8.120	17.784	-35.102	52.886
0.310	9.656	4.000	13.656	-37.773	51.429
0.384	9.660	10.820	20.480	-28.834	49.314

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 : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5290MHz)

Frequency MHz	Correct Factor dB	Reading Level dBµV	Measurement Level dBµV	Margin dB	Limit dBµV
LINE 1					
Quasi-Peak					
0.162	9.657	35.590	45.247	-20.410	65.657
0.193	9.650	31.510	41.160	-23.611	64.771
0.252	9.653	22.790	32.443	-30.643	63.086
0.384	9.660	26.980	36.640	-22.674	59.314
0.638	9.674	13.990	23.664	-32.336	56.000
1.306	9.721	17.080	26.801	-29.199	56.000
Average					
0.162	9.657	23.900	33.557	-22.100	55.657
0.193	9.650	20.480	30.130	-24.641	54.771
0.252	9.653	10.300	19.953	-33.133	53.086
0.384	9.660	22.120	31.780	-17.534	49.314
0.638	9.674	4.290	13.964	-32.036	46.000
1.306	9.721	12.340	22.061	-23.939	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 : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5290MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 2					
Quasi-Peak					
0.162	9.658	34.280	43.938	-21.719	65.657
0.197	9.660	28.780	38.440	-26.217	64.657
0.224	9.662	25.340	35.002	-28.884	63.886
0.252	9.663	21.460	31.123	-31.963	63.086
0.283	9.664	17.840	27.504	-34.696	62.200
0.322	9.657	15.420	25.077	-36.009	61.086
Average					
0.162	9.658	21.200	30.858	-24.799	55.657
0.197	9.660	14.790	24.450	-30.207	54.657
0.224	9.662	11.720	21.382	-32.504	53.886
0.252	9.663	8.200	17.863	-35.223	53.086
0.283	9.664	5.110	14.774	-37.426	52.200
0.322	9.657	5.390	15.047	-36.039	51.086

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 : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5530MHz)

Frequency MHz	Correct Factor dB	Reading Level dBµV	Measurement Level dBµV	Margin dB	Limit dBµV
LINE 1					
Quasi-Peak					
0.150	9.661	35.530	45.191	-20.809	66.000
0.201	9.650	31.690	41.340	-23.203	64.543
0.263	9.654	23.080	32.734	-30.037	62.771
0.392	9.661	28.010	37.671	-21.415	59.086
0.853	9.686	15.910	25.596	-30.404	56.000
10.607	9.996	28.340	38.336	-21.664	60.000
Average					
0.150	9.661	19.140	28.801	-27.199	56.000
0.201	9.650	20.140	29.790	-24.753	54.543
0.263	9.654	10.410	20.064	-32.707	52.771
0.392	9.661	21.720	31.381	-17.705	49.086
0.853	9.686	10.100	19.786	-26.214	46.000
10.607	9.996	23.700	33.696	-16.304	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 : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5530MHz)

Frequency MHz	Correct Factor dB	Reading Level dBµV	Measurement Level dBµV	Margin dB	Limit dBµV
LINE 2					
Quasi-Peak					
0.158	9.658	35.180	44.838	-20.933	65.771
0.209	9.661	28.150	37.811	-26.503	64.314
0.255	9.663	21.580	31.243	-31.757	63.000
0.357	9.659	15.780	25.439	-34.647	60.086
0.470	9.665	11.320	20.985	-35.872	56.857
0.576	9.671	17.320	26.991	-29.009	56.000
Average					
0.158	9.658	20.590	30.248	-25.523	55.771
0.209	9.661	13.150	22.811	-31.503	54.314
0.255	9.663	7.540	17.203	-35.797	53.000
0.357	9.659	8.060	17.719	-32.367	50.086
0.470	9.665	3.960	13.625	-33.232	46.857
0.576	9.671	11.960	21.631	-24.369	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 : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5775MHz)

Frequency MHz	Correct Factor dB	Reading Level dBµV	Measurement Level dBµV	Margin dB	Limit dBµV
LINE 1					
Quasi-Peak					
0.287	9.703	35.310	45.013	-17.073	62.086
0.505	9.713	21.790	31.503	-24.497	56.000
0.681	9.721	16.570	26.291	-29.709	56.000
0.849	9.728	18.550	28.278	-27.722	56.000
1.002	9.735	14.860	24.595	-31.405	56.000
8.646	9.870	12.470	22.340	-37.660	60.000
Average					
0.287	9.703	33.550	43.253	-8.833	52.086
0.505	9.713	14.780	24.493	-21.507	46.000
0.681	9.721	9.750	19.471	-26.529	46.000
0.849	9.728	12.160	21.888	-24.112	46.000
1.002	9.735	7.470	17.205	-28.795	46.000
8.646	9.870	7.140	17.010	-32.990	50.000

Note:

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

Product : OTT BOX
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5775MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV	Margin dB	Limit dBμV
LINE 2					
Quasi-Peak					
0.181	9.678	35.920	45.598	-19.516	65.114
0.283	9.682	34.430	44.112	-18.088	62.200
0.322	9.684	26.210	35.894	-25.192	61.086
0.443	9.690	20.860	30.550	-27.079	57.629
0.630	9.698	30.410	40.108	-15.892	56.000
8.998	9.880	10.910	20.790	-39.210	60.000
Average					
0.181	9.678	19.880	29.558	-25.556	55.114
0.283	9.682	30.180	39.862	-12.338	52.200
0.322	9.684	17.460	27.144	-23.942	51.086
0.443	9.690	12.440	22.130	-25.499	47.629
0.630	9.698	16.330	26.028	-19.972	46.000
8.998	9.880	5.020	14.900	-35.100	50.000

Note:

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

3. Maximun conducted output power

3.1. Test Equipment

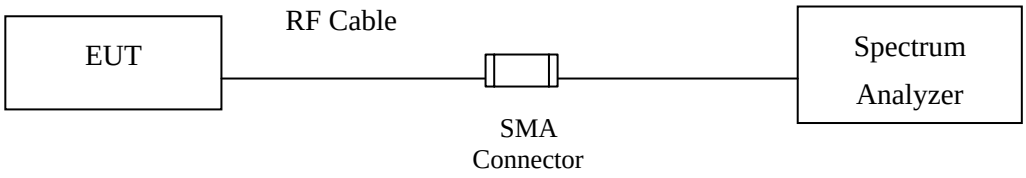
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2015
X	Power Sensor	Anritsu	MA2411B/0738448	Jun., 2015
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2015

Note:

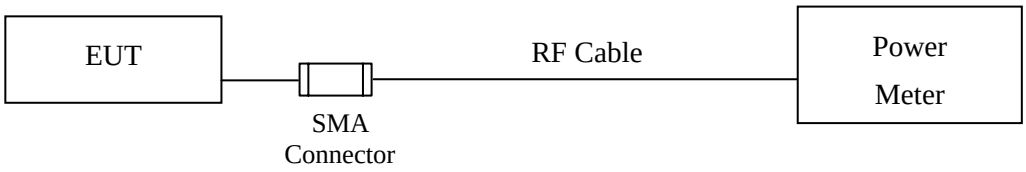
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup

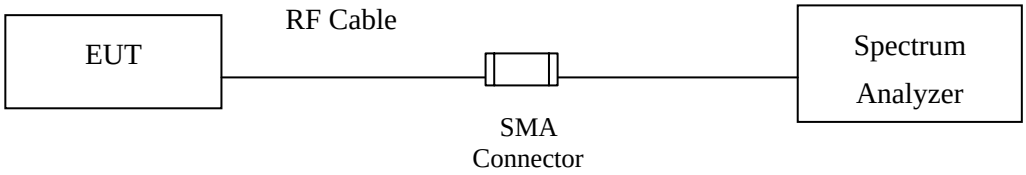
26dBc Occupied Bandwidth



Conduction Power Measurement (for 802.11an)



Conduction Power Measurement (for 802.11ac)



3.3. Limits

3.3.1. For the band 5.15-5.25 GHz,

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

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

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-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.

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

3.3.3. For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point UNII devices operating in

this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

3.4. Test Procedure

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

802.11an (BW≦40MHz) Maximum conducted output power using KDB 789033 section E)3)b) Method PM-G (Measurement using a gated RF average power meter)
Note: the power meter have a video bandwidth that is greater than or equal to the measurement bandwidth, (Anritsu/ MA2411B video bandwidth: 65MHz)

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

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

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Maximum conducted output power

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

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	15.94	--	--	--	--	--	--	--	<24dBm
44	5220	16.08	16.01	15.98	15.76	15.66	15.51	15.46	15.25	<24dBm
48	5240	16.87	--	--	--	--	--	--	--	<24dBm
52	5260	15.99	--	--	--	--	--	--	--	<24dBm
60	5300	16.63	16.59	16.53	16.48	16.41	16.45	16.39	16.33	<24dBm
64	5320	16.56	--	--	--	--	--	--	--	<24dBm
100	5500	17.27	--	--	--	--	--	--	--	<24dBm
116	5580	17.38	17.31	17.33	17.26	17.22	17.24	17.18	17.11	<24dBm
140	5700	16.79	--	--	--	--	--	--	--	<24dBm
149	5745	16.39	--	--	--	--	--	--	--	<30dBm
157	5785	15.96	15.83	15.73	15.65	15.52	15.44	15.3	15.21	<30dBm
165	5825	15.89	--	--	--	--	--	--	--	<30dBm

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

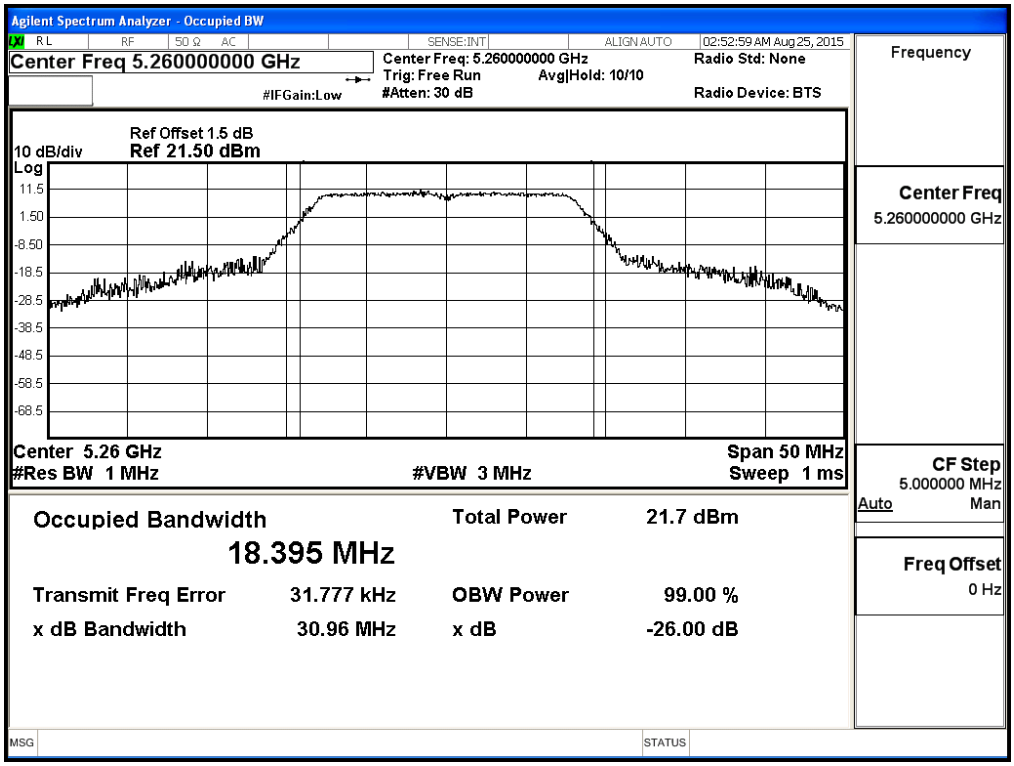
Maximum conducted output power Measurement:

Channel No	Frequency Range (MHz)	26 dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	15.94	24	--
44	5220	--	16.08	24	--
48	5240	--	16.87	24	--
52	5260	18.395	15.99	24	23.65
60	5300	17.160	16.63	24	23.35
64	5320	17.176	16.56	24	23.35
100	5500	17.267	17.27	24	23.37
116	5580	17.205	17.38	24	23.36
140	5700	17.198	16.79	24	23.35
149	5745	--	16.39	30	--
157	5785	--	15.96	30	--
165	5825	--	15.89	30	--

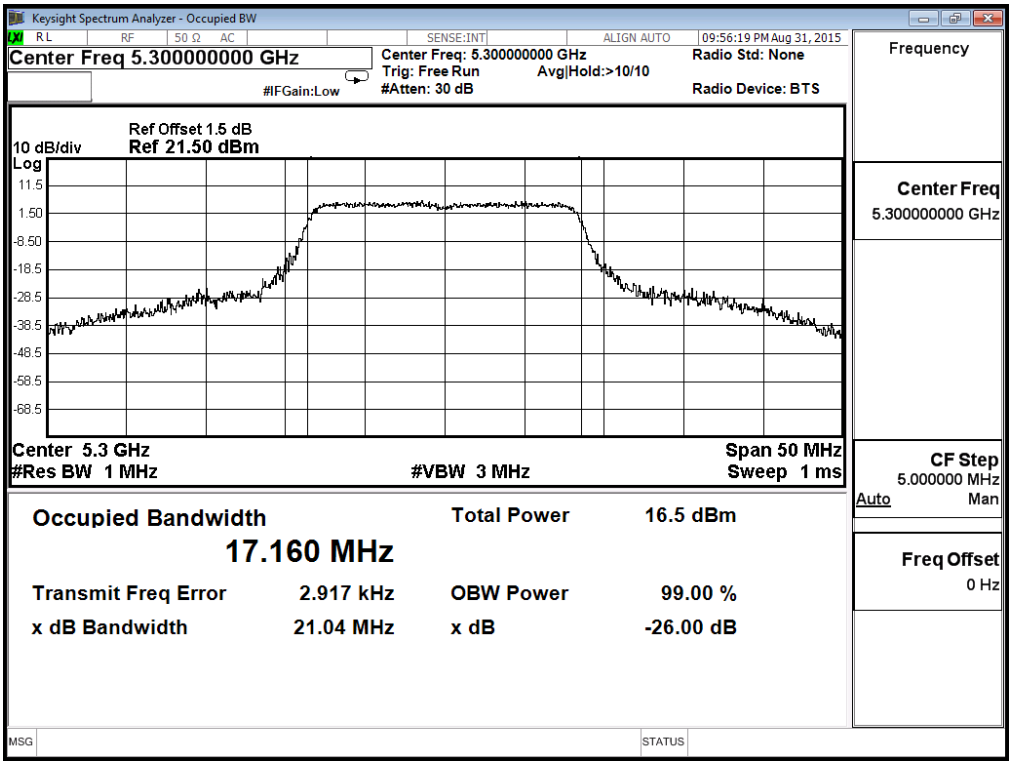
Note:
1. Power Output Value =Reading value on average power meter + cable loss
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

26 dB Occupied Bandwidth:

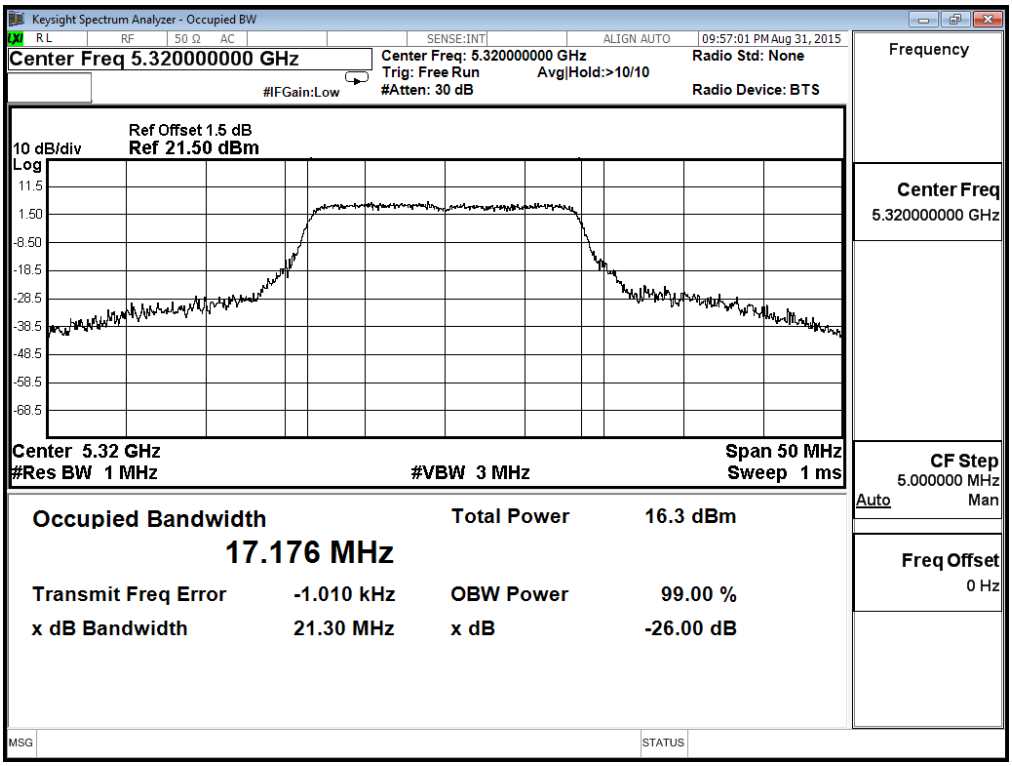
Channel 52:



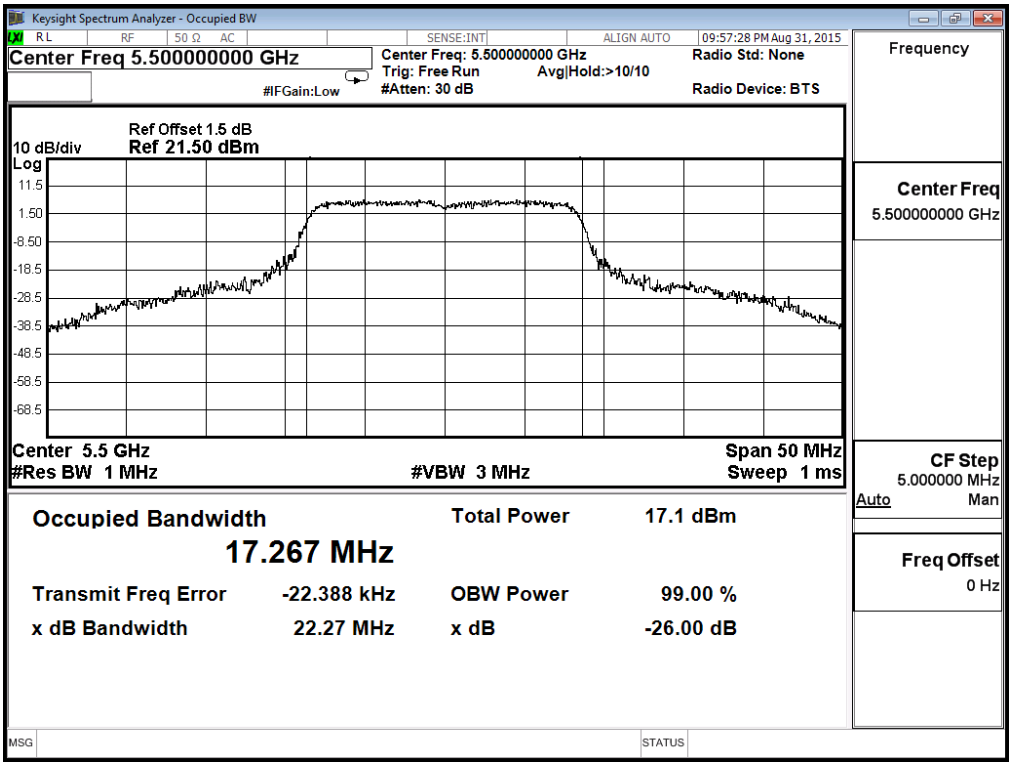
Channel 60:



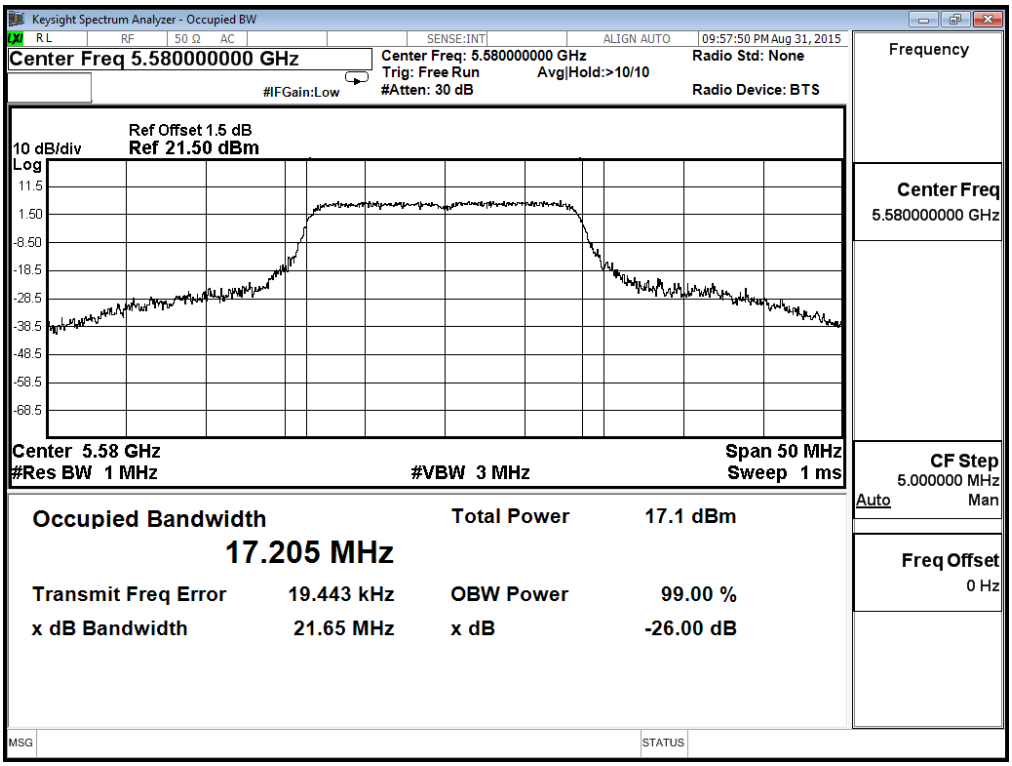
Channel 64:



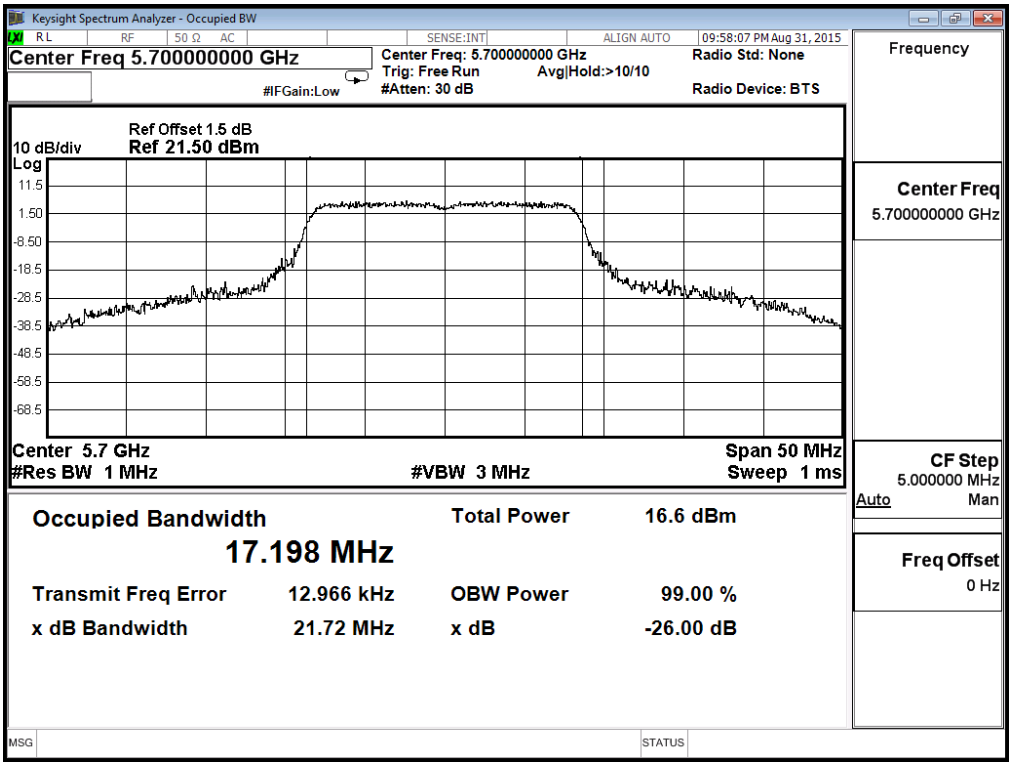
Channel 100:



Channel 116:



Channel 140:



Product : OTT BOX
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	
		Measurement Level (dBm)								
36	5180	16.07	--	--	--	--	--	--	--	<30dBm
44	5220	16								<30dBm
48	5240	16.92	--	--	--	--	--	--	--	<30dBm
52	5260	16.56	--	--	--	--	--	--	--	<24dBm
60	5300	16.54	16.50	16.46	16.42	16.37	16.33	16.39	16.24	<24dBm
64	5320	16.72	--	--	--	--	--	--	--	<24dBm
100	5500	17.22	--	--	--	--	--	--	--	<24dBm
116	5580	17.26	17.22	17.17	17.12	17.07	17.01	16.95	16.89	<24dBm
140	5700	16.59	--	--	--	--	--	--	--	<24dBm
149	5745	16.11	--	--	--	--	--	--	--	<30dBm
157	5785	16.14	16.02	15.98	15.82	15.74	15.65	15.52	15.44	<30dBm
165	5825	15.82	--	--	--	--	--	--	--	<30dBm

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

Maximum conducted output power Measurement:

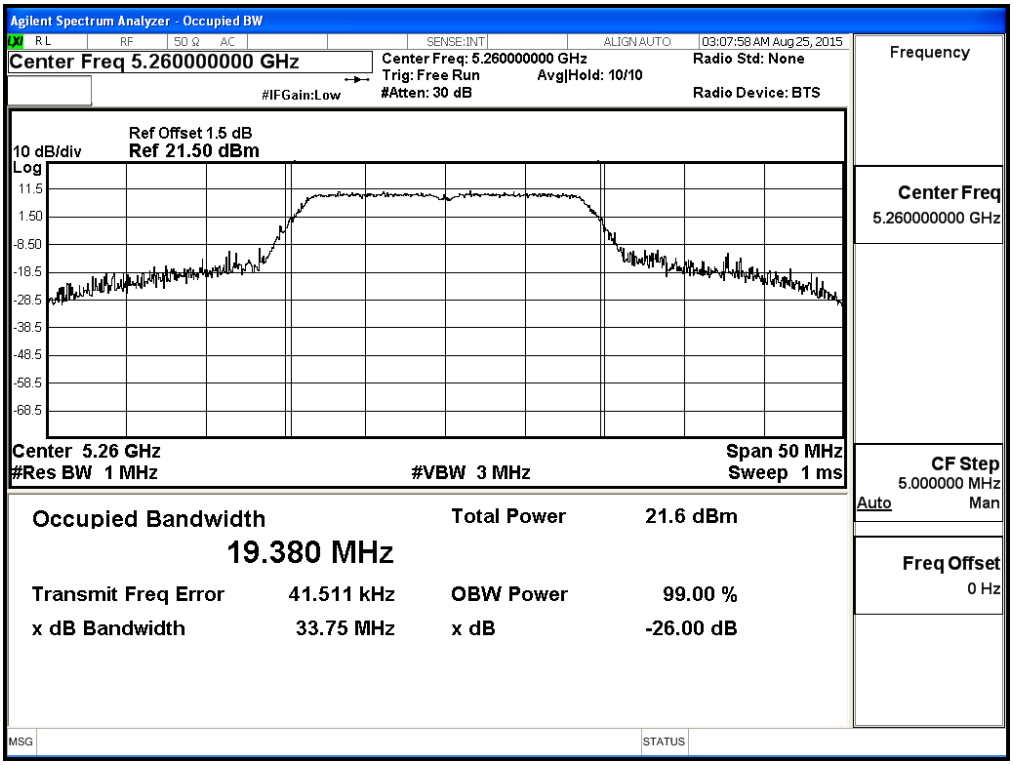
Channel Number	Frequency (MHz)	26 dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit	
				(dBm)	dBm+10log(BW)
36	5180	--	16.07	24	--
44	5220	--	16	24	--
48	5240	--	16.92	24	--
52	5260	19.380	16.56	24	23.87
60	5300	18.296	16.54	24	23.62
64	5320	18.339	16.72	24	23.63
100	5500	18.378	17.22	24	23.64
116	5580	18.332	17.26	24	23.63
140	5700	18.355	16.59	24	23.64
149	5745	--	16.11	30	--
157	5785	--	16.14	30	--
165	5825	--	15.82	30	--

Note:

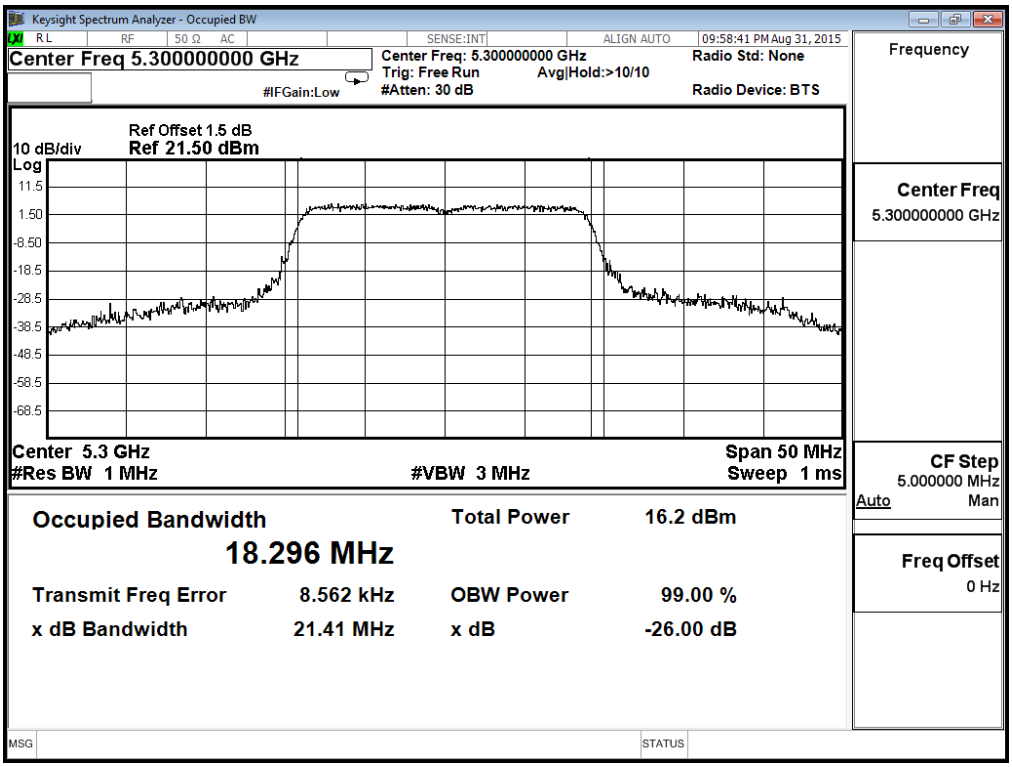
1. Power Output Value =Reading value on average power meter + cable loss
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

26 dB Occupied Bandwidth:

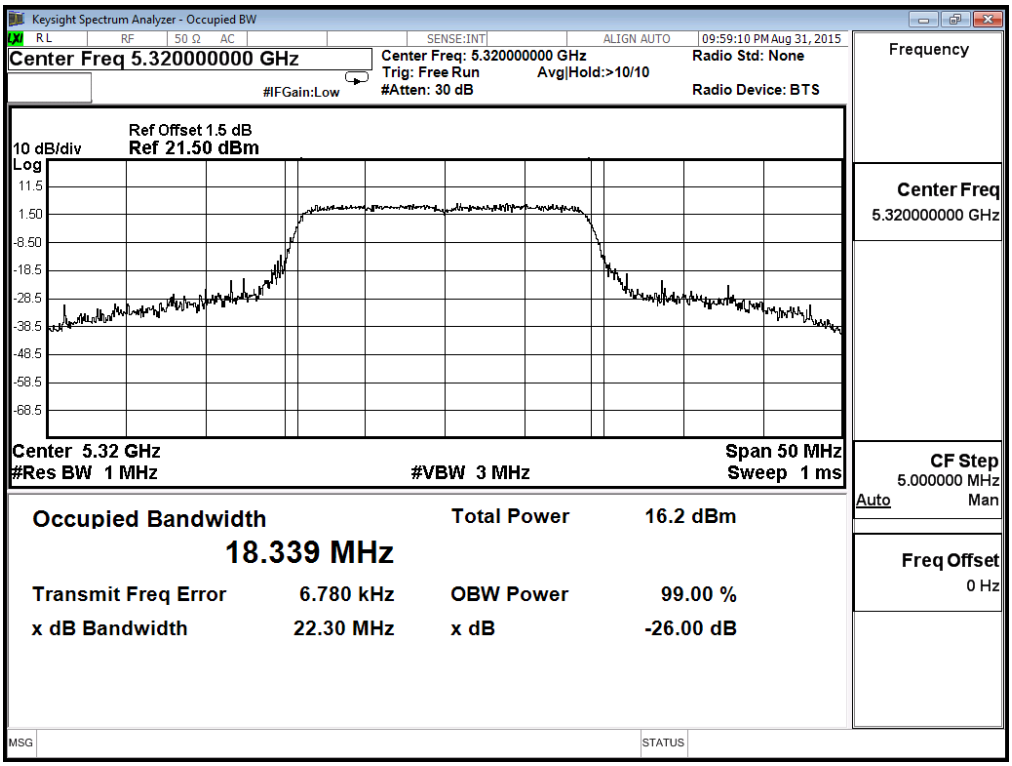
Channel 52



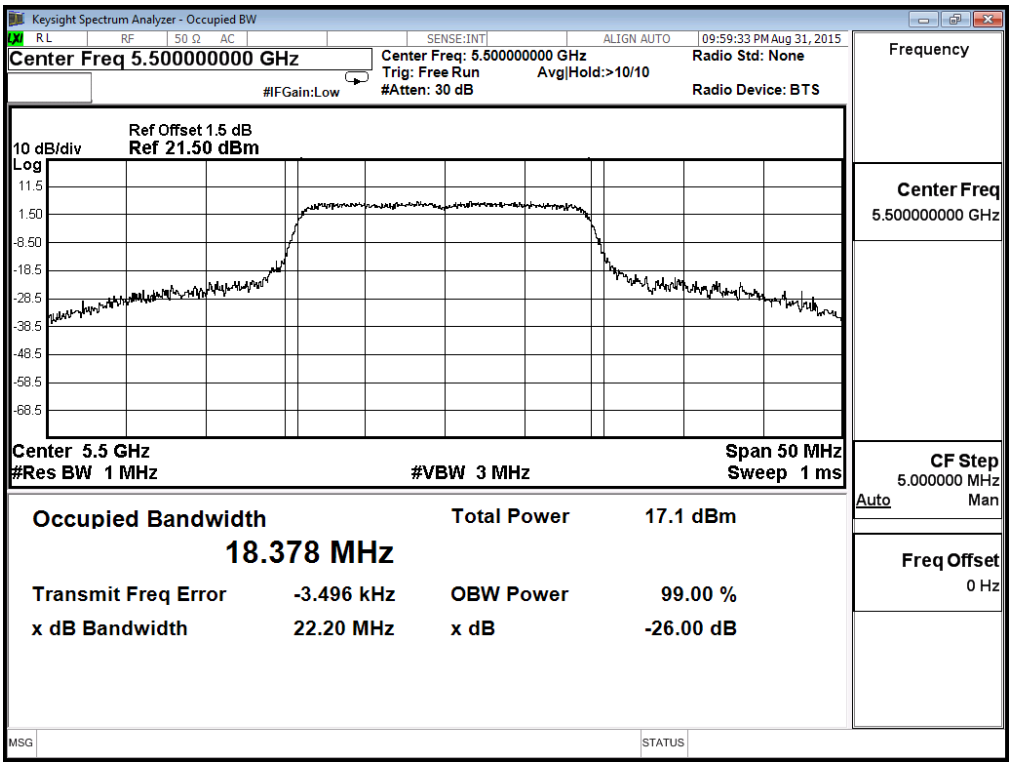
Channel 60



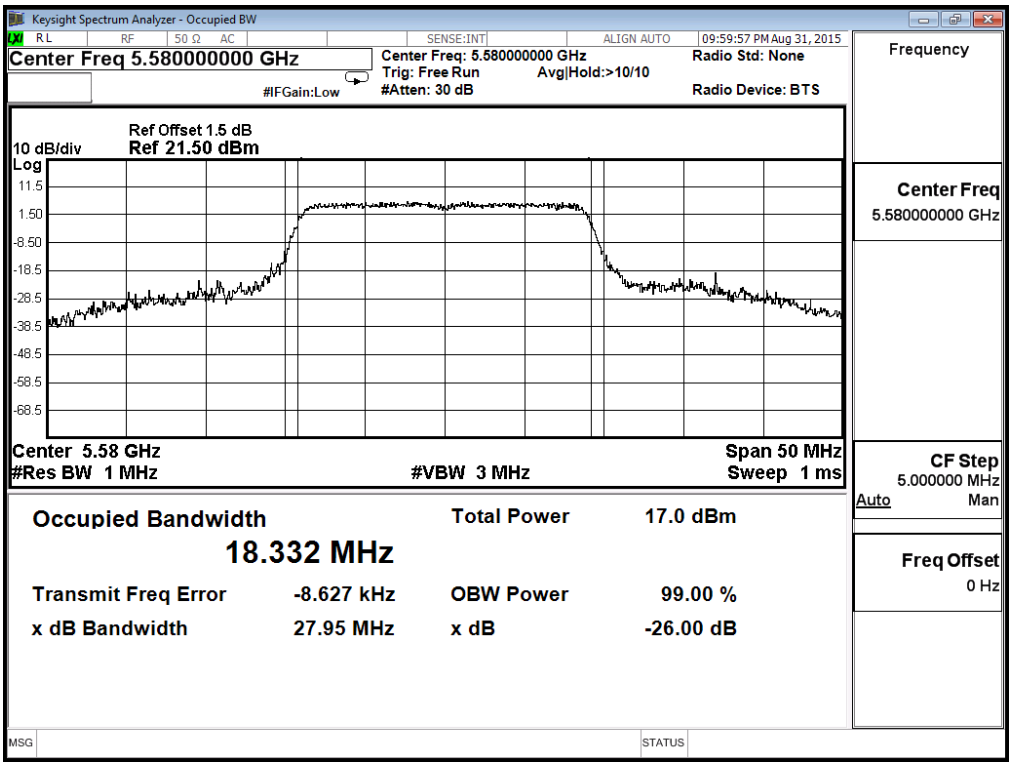
Channel 64



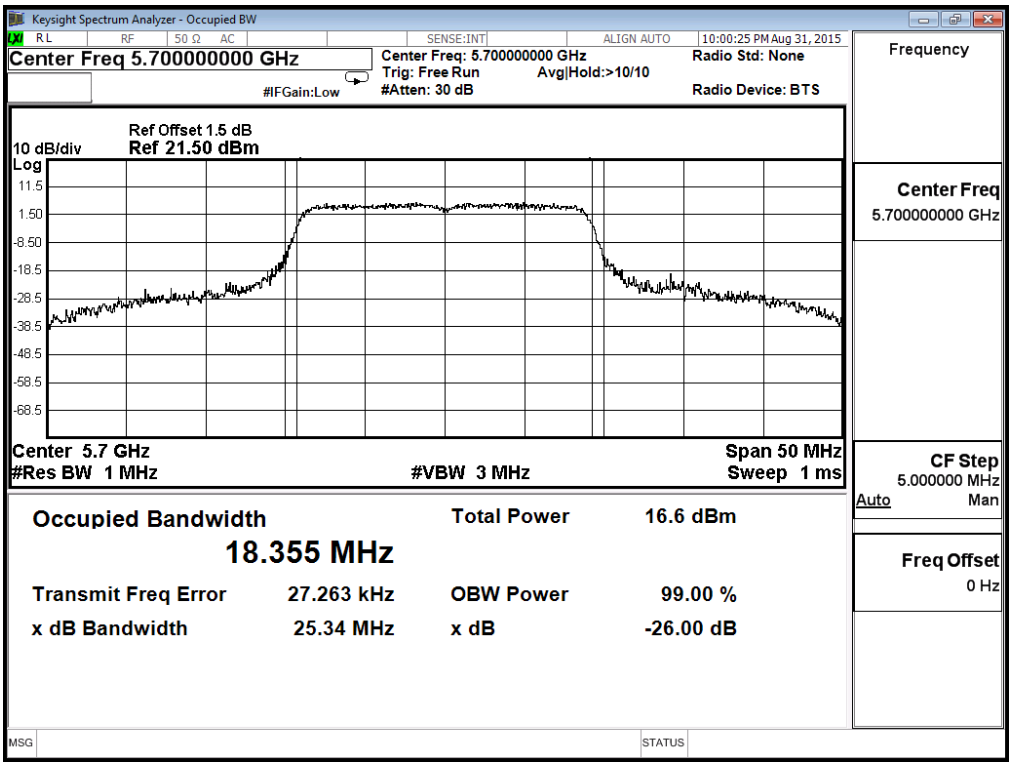
Channel 100



Channel 116



Channel 140



Product : OTT BOX
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Cable loss=1dB		Maximum conducted output power								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		15	30	45	60	90	120	135	150	
		Measurement Level (dBm)								
38	5190	16.71								<24dBm
46	5230	14.96	--	--	--	--	--	--	--	<24dBm
54	5270	14.84	14.73	14.52	14.44	14.38	14.28	14.18	14.02	<24dBm
62	5310	15.21	--	--	--	--	--	--	--	<24dBm
102	5510	14.74	--	--	--	--	--	--	--	<24dBm
110	5550	17.57	17.53	17.48	17.44	17.35	17.41	17.29	17.24	<24dBm
134	5670	17.29	--	--	--	--	--	--	--	<24dBm

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

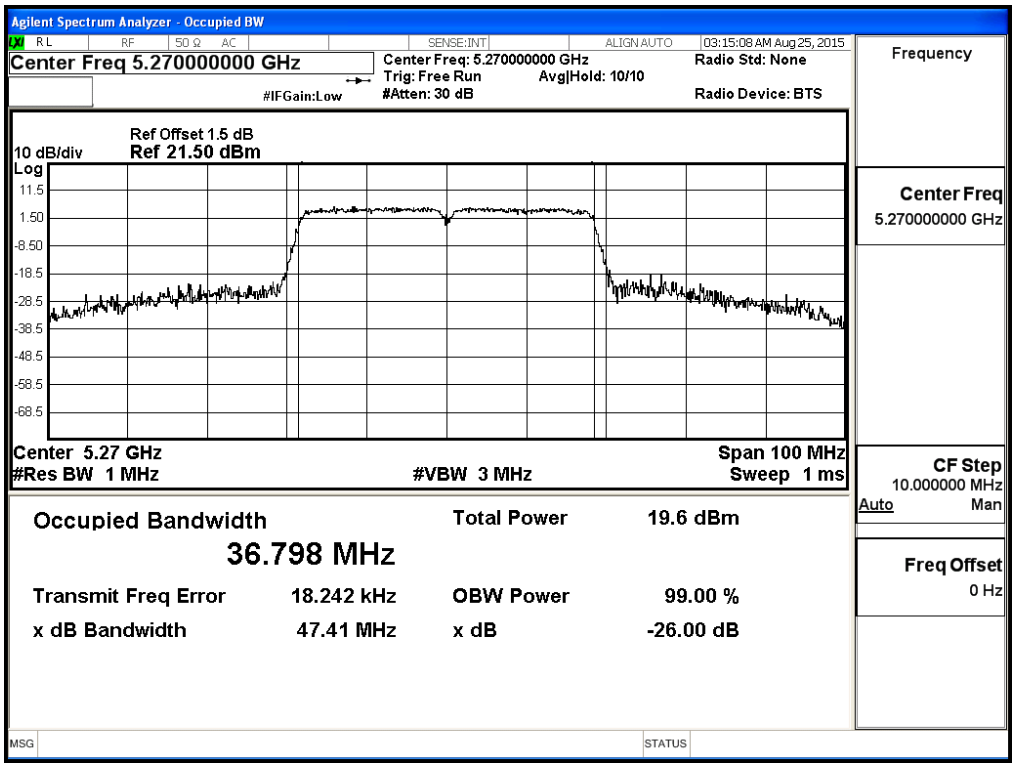
Maximum conducted output power Measurement:

Channel Number	Frequency	26 dB Bandwidth	Output Power	Output Power Limit	
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)
38	5190	--	16.71	24	--
46	5230	--	14.96	24	--
54	5270	36.798	14.84	24	26.66
62	5310	36.560	15.21	24	26.63
102	5510	36.691	14.74	24	26.65
110	5550	36.756	17.57	24	26.65
134	5670	36.707	17.29	24	26.65

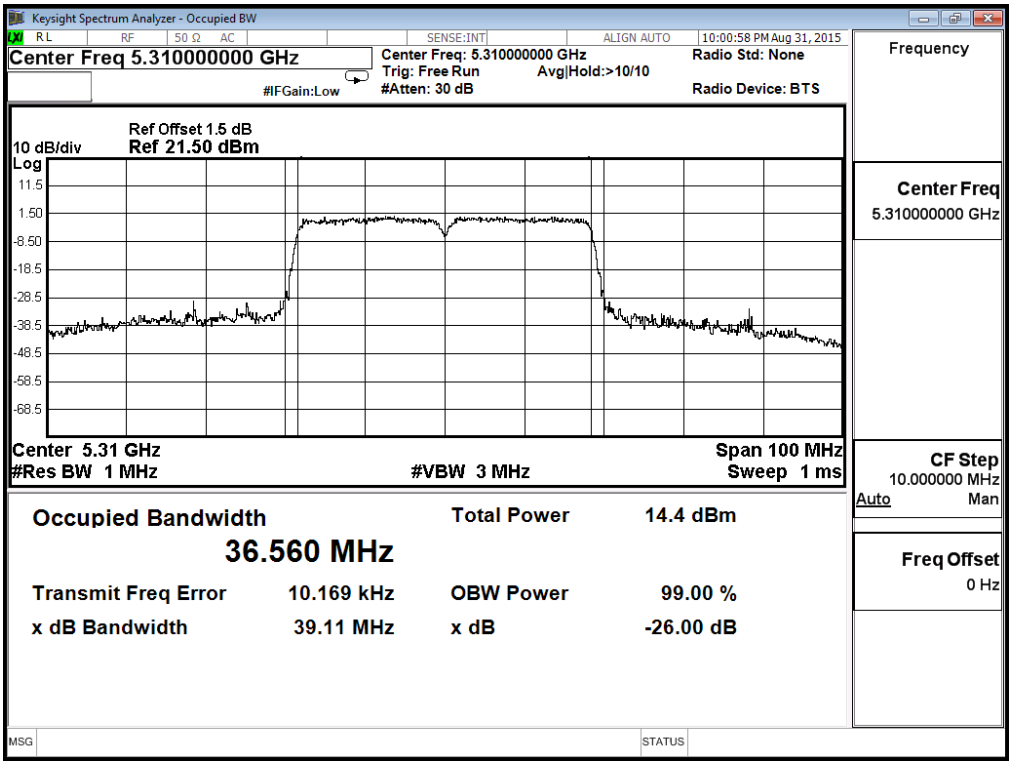
Note:
1. Power Output Value =Reading value on average power meter + cable loss
2. 26 dB Bandwidth is the bandwidth of chain A or chain B whichever is less bandwidth, output power limitation is more stringent.

26 dB Occupied Bandwidth:

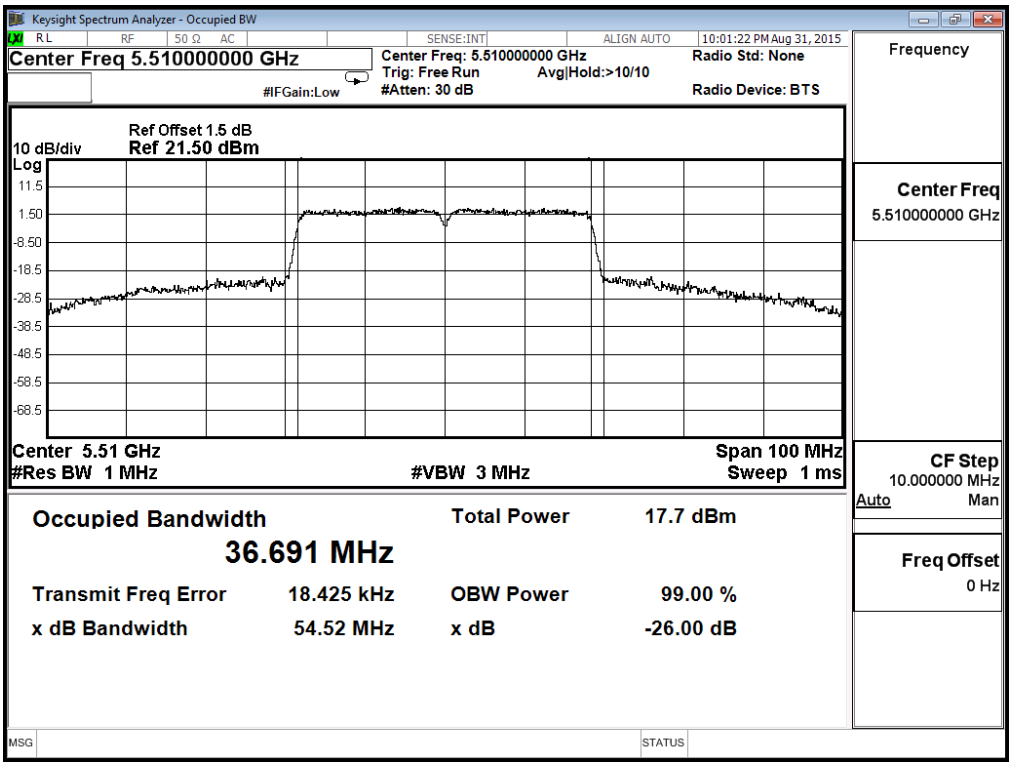
Channel 54



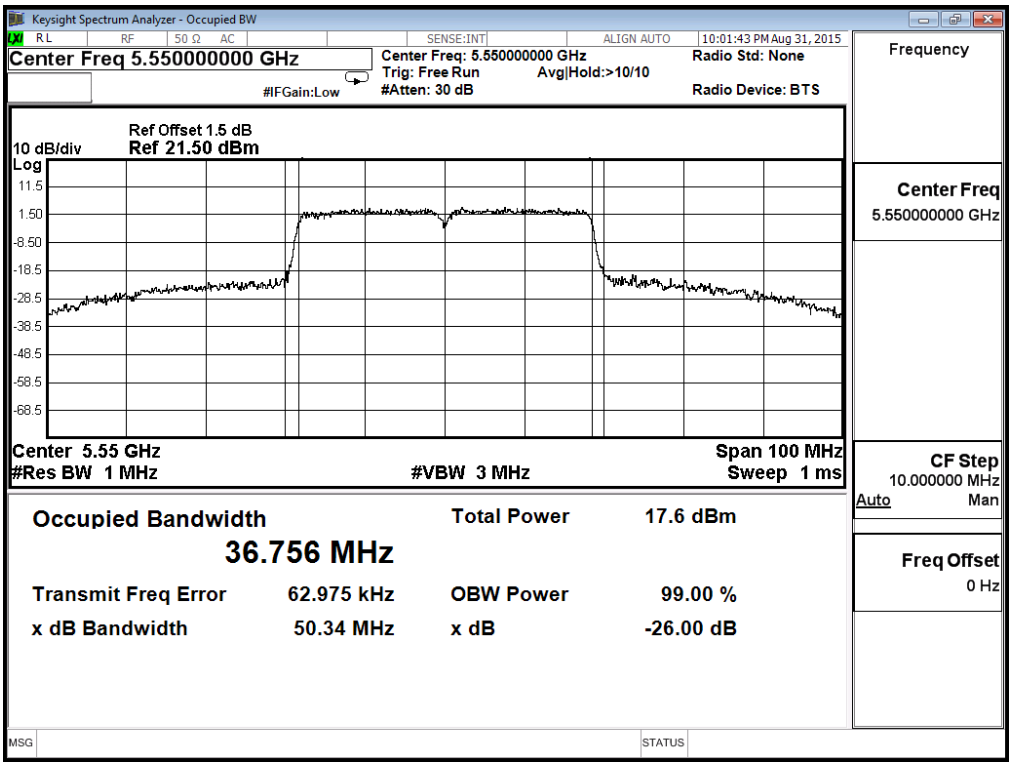
Channel 62



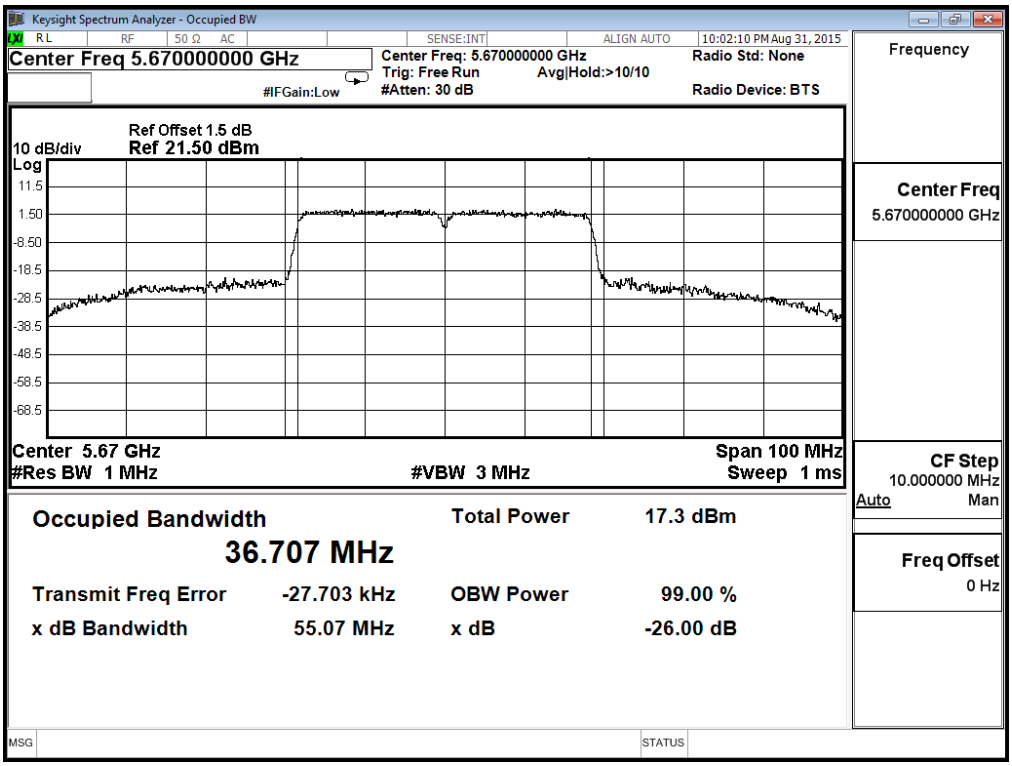
Channel 102



Channel 110



Channel 134


Keysight Spectrum Analyzer - Occupied BW
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:02:10 PM Aug 31, 2015
Center Freq 5.670000000 GHz
#IFGain:Low
Center Freq: 5.670000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 1.5 dB
10 dB/div
Ref 21.50 dBm
Log
11.5
1.50
-8.50
-18.5
-28.5
-38.5
-48.5
-58.5
-68.5
Center Freq
5.670000000 GHz
Center 5.67 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 100 MHz
Sweep 1 ms
CF Step
10.000000 MHz
Auto
Man
Occupied Bandwidth
36.707 MHz
Total Power 17.3 dBm
Freq Offset
0 Hz
Transmit Freq Error -27.703 kHz
OBW Power 99.00 %
x dB Bandwidth 55.07 MHz
x dB -26.00 dB
MSG
STATUS

Product : OTT BOX
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-20BW-7.2Mbps)

Cable loss=1dB		Maximum conducted output power									
Channel No.	Frequency (MHz)	Data Rate (Mbps)									Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	
		Measurement Level (dBm)									
144 (Band3)	5720	14.9	14.85	14.79	14.73	14.68	14.61	14.55	14.49	14.41	<24dBm
144 (Band4)	5720	9.13	9.01	8.95	8.88	8.79	8.75	8.64	8.52	8.44	<30dBm

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

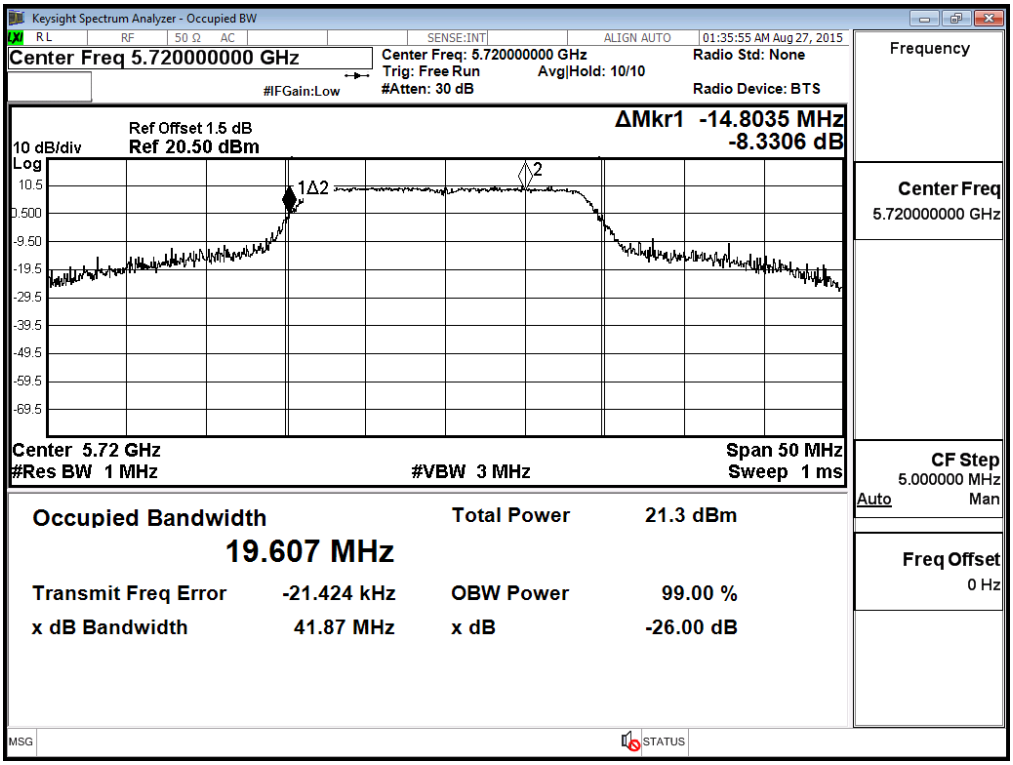
Maximum conducted output power Measurement:

Channel No	Frequency Range	26 dB Bandwidth	Output Power	Output Power Limit		Result
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)	
144(Band3)	5720	14.804	14.90	24	22.70	Pass
144(Band4)	5720	--	9.13	30	--	Pass

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

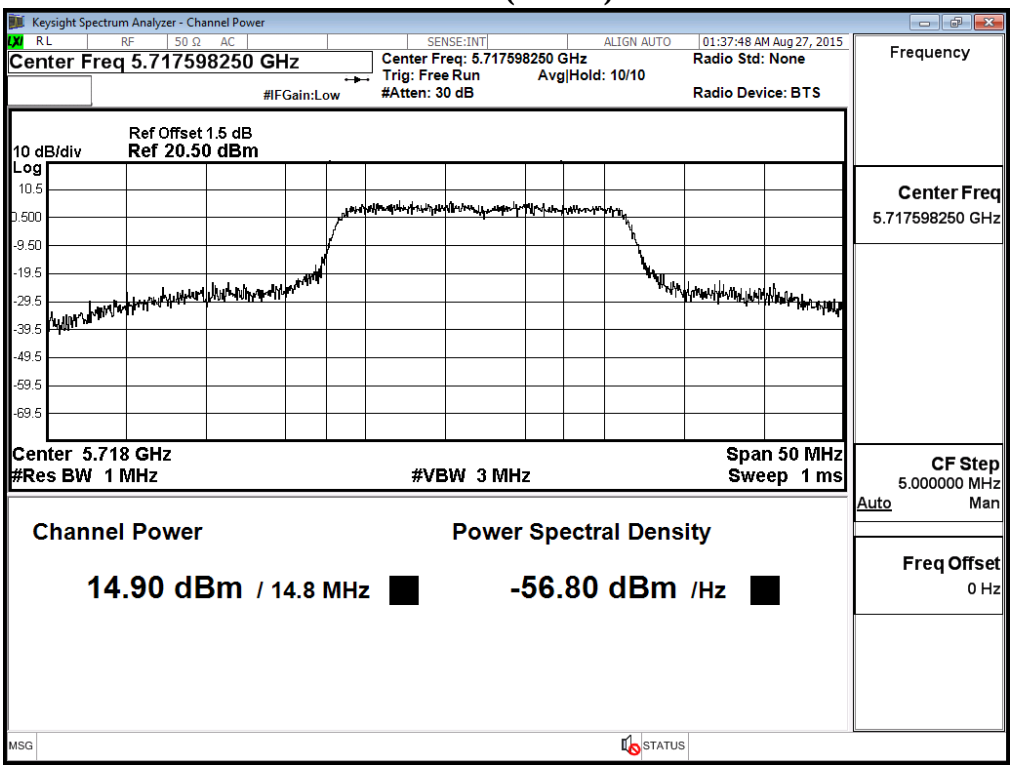
26 dB Occupied Bandwidth:

Channel 144

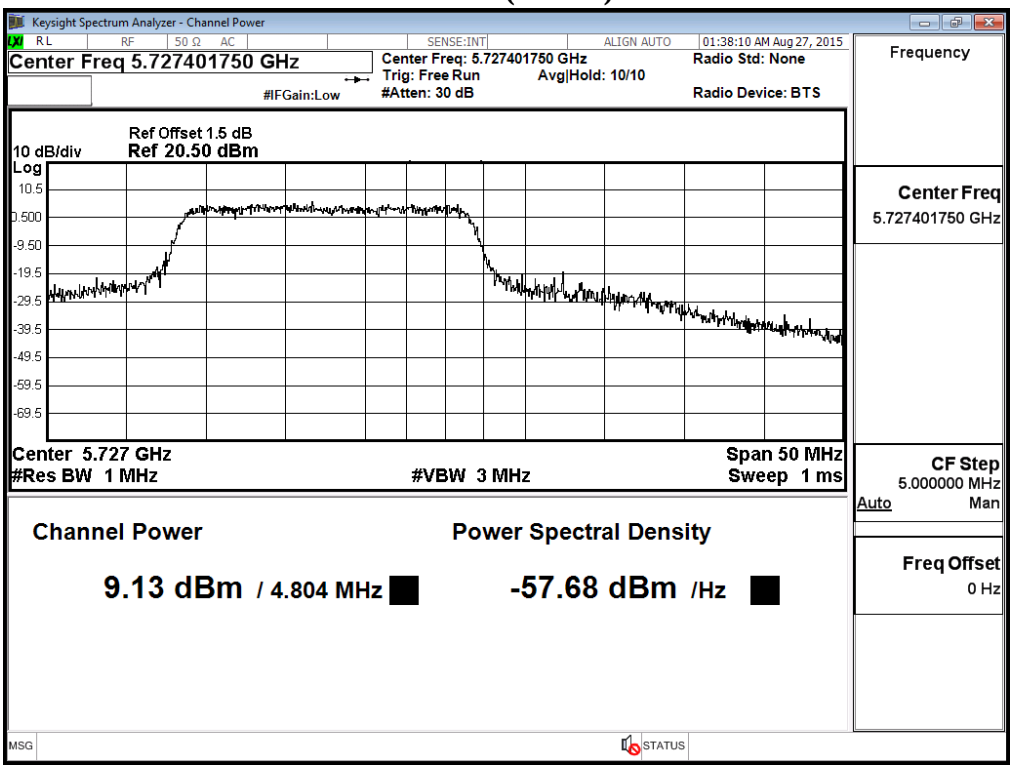


Maximum conducted output power:

Channel 144 (Band 3)



Channel 144 (Band 4)



Product : OTT BOX
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit (802.11ac-40BW-15Mbps)

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
142F(Band3)	5710	15.97	15.82	15.74	15.65	15.57	15.52	15.47	15.41	15.36	15.31	<24dBm
142F(Band4)	5710	5.69	5.63	5.54	5.49	5.41	5.33	5.24	5.14	5.02	4.93	<30dBm

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

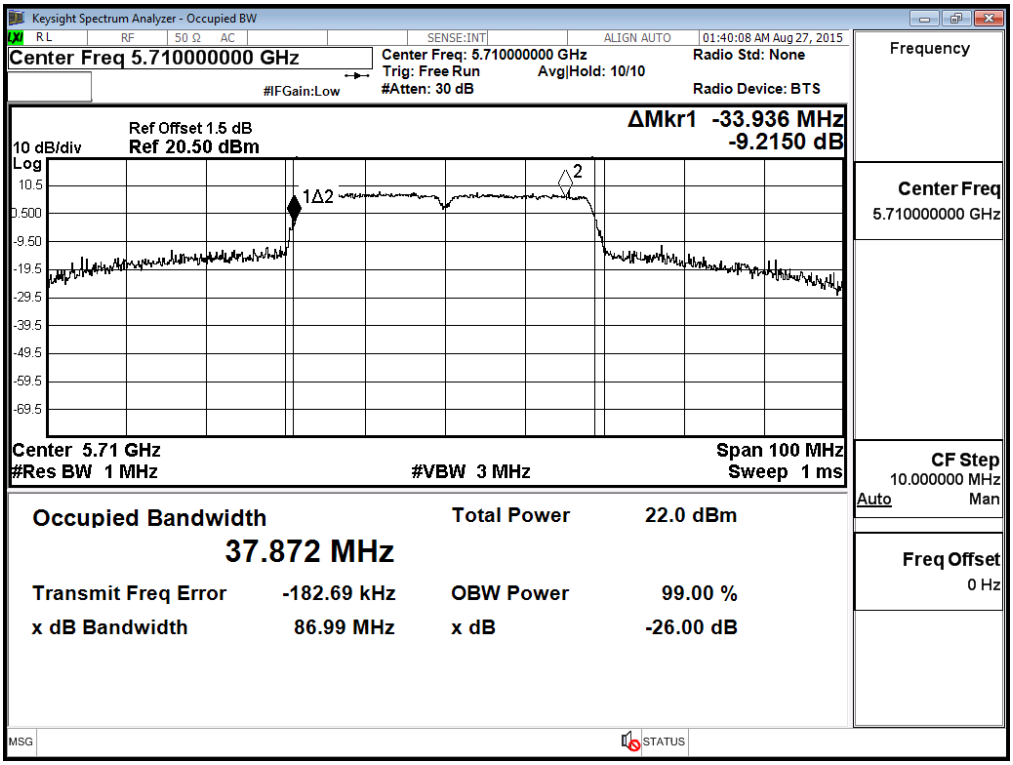
Maximum conducted output power Measurement:

Channel No	Frequency Range	26 dB Bandwidth	Output Power	Output Power Limit		Result
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)	
142F(Band3)	5710	33.936	15.97	24	26.31	Pass
142F(Band4)	5710	--	5.69	30	--	Pass

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

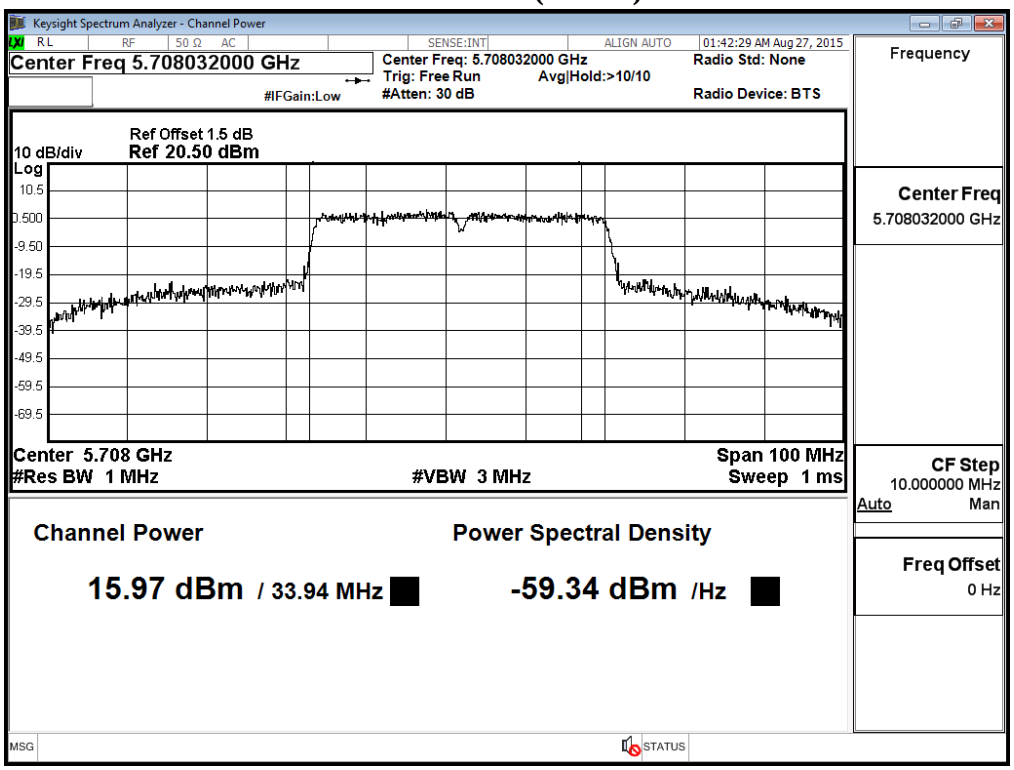
26 dB Occupied Bandwidth:

Channel 142

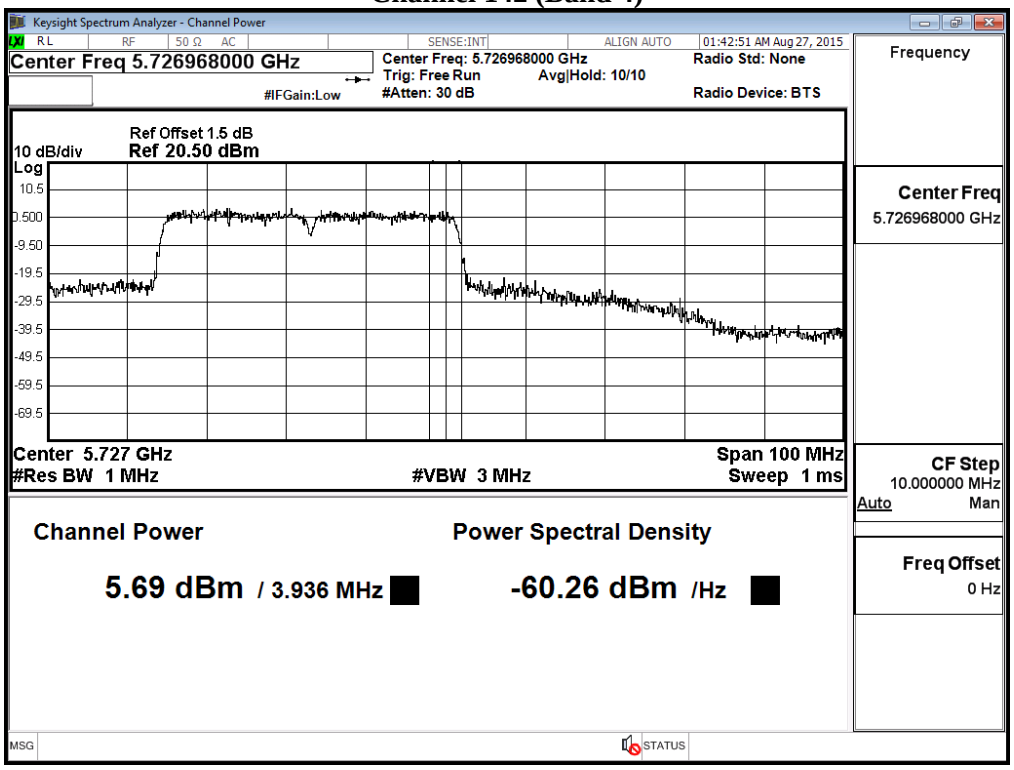


Maximum conducted output power:

Channel 142 (Band 3)



Channel 142 (Band 4)



Product : OTT BOX
Test Item : Maximum conducted output power
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps)

Cable loss=1dB		Maximum conducted output power										
Channel No	Frequency (MHz)	Data Rate (Mbps)										Required Limit
		VTH0	VTH1	VTH2	VTH3	VTH4	VTH5	VTH6	VTH7	VTH8	VTH9	
42	5210	15.3	15.21	15.13	15.05	14.94	14.82	14.71	14.62	14.59	14.48	<24dBm
58	5290	15.88	15.82	15.75	15.62	15.51	15.43	15.38	15.29	15.17	15.05	<24dBm
106	5530	16.48	16.42	16.34	16.22	16.1	15.99	15.88	15.82	15.78	15.71	<24dBm
138 (Band3)	5690	15.92	15.84	15.79	15.72	15.66	15.57	15.42	15.38	15.29	15.14	<24dBm
138 (Band4)	5690	1.16	1.13	1.08	1.04	0.98	0.91	0.85	0.73	0.69	0.61	<30dBm
155	5775	15.24	15.17	15.02	14.95	14.82	14.72	14.65	14.57	14.46	14.38	<30dBm

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

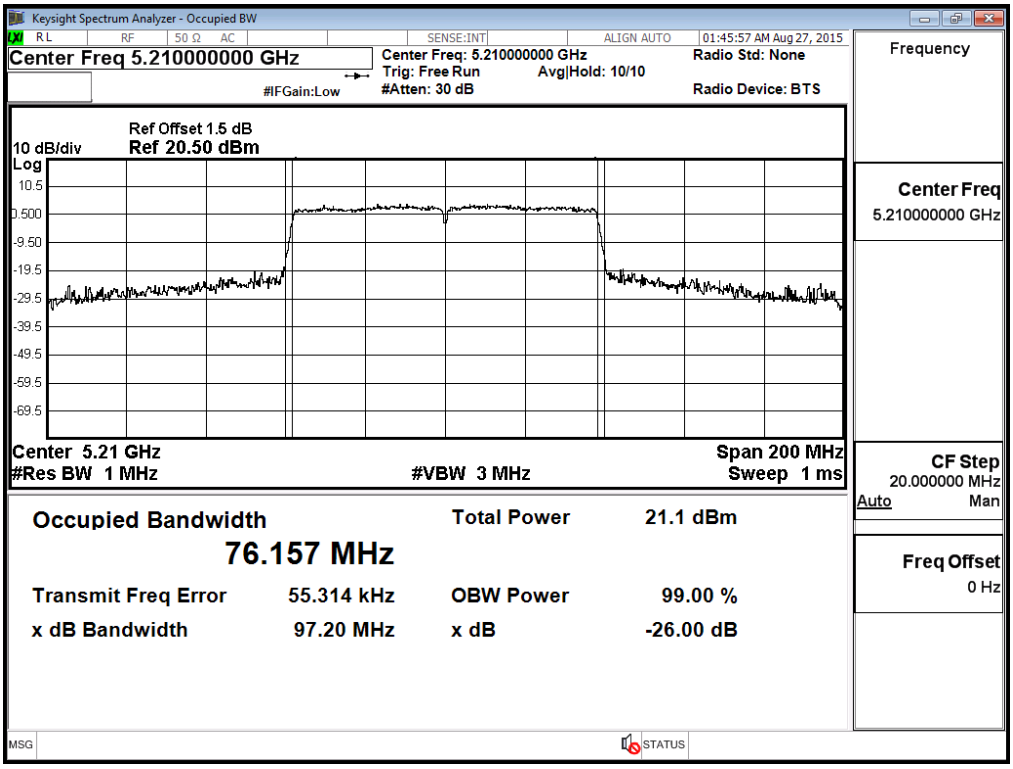
Maximum conducted output power Measurement

Channel No	Frequency Range	26 dB Bandwidth	Output Power	Output Power Limit		Result
	(MHz)	(MHz)	(dBm)	(dBm)	dBm+10log(BW)	Pass
42	5210	--	15.30	24	--	Pass
58	5290	76.529	15.88	24	29.84	Pass
106	5530	76.701	16.48	24	29.85	Pass
138(Band3)	5690	73.244	15.92	24	29.65	Pass
138(Band4)	5690	--	1.16	30	--	Pass
155	5775	--	15.24	30	--	Pass

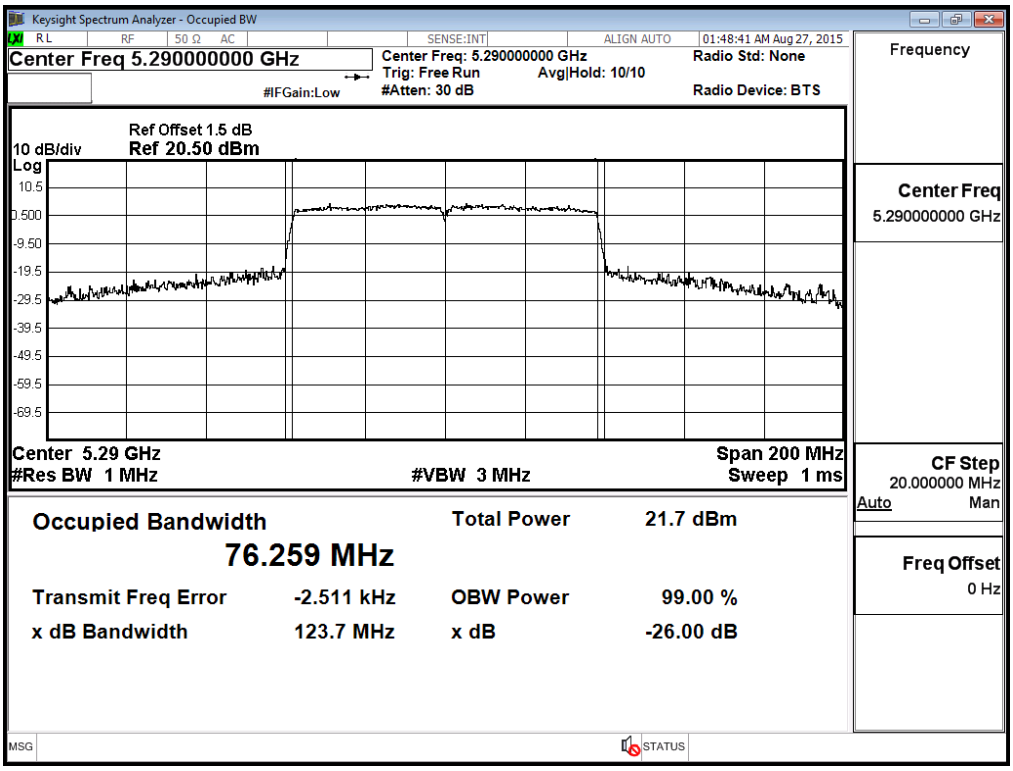
Note: Power Output Value =Reading value on average power meter + cable loss

26 dB Occupied Bandwidth:

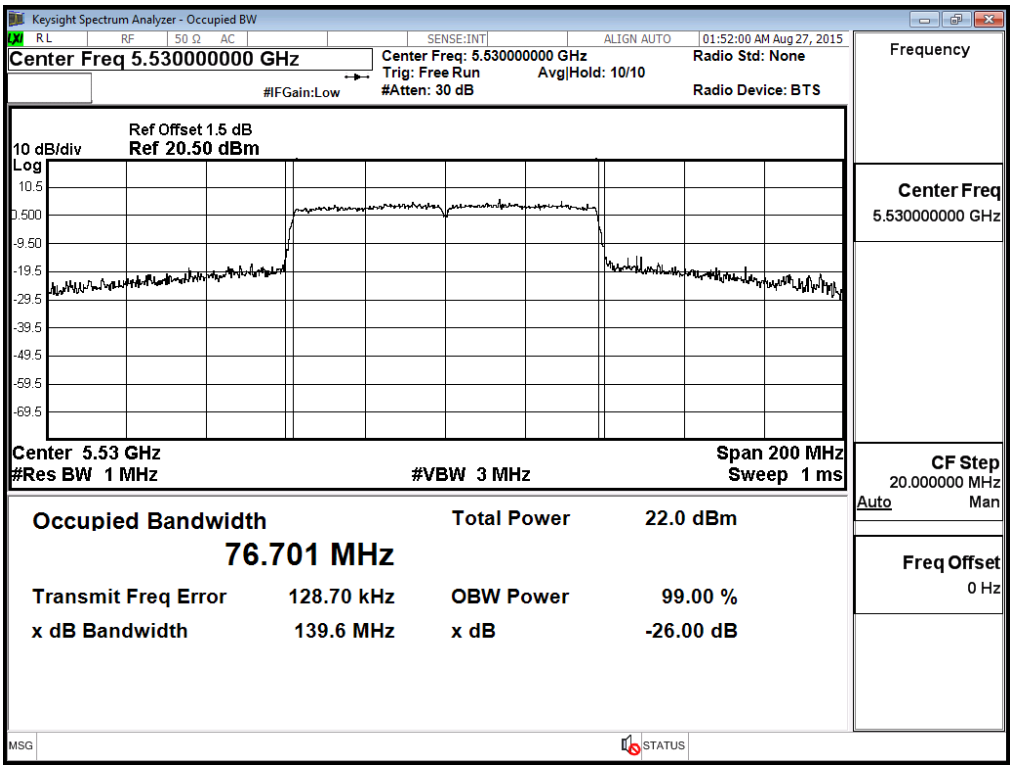
Channel 42



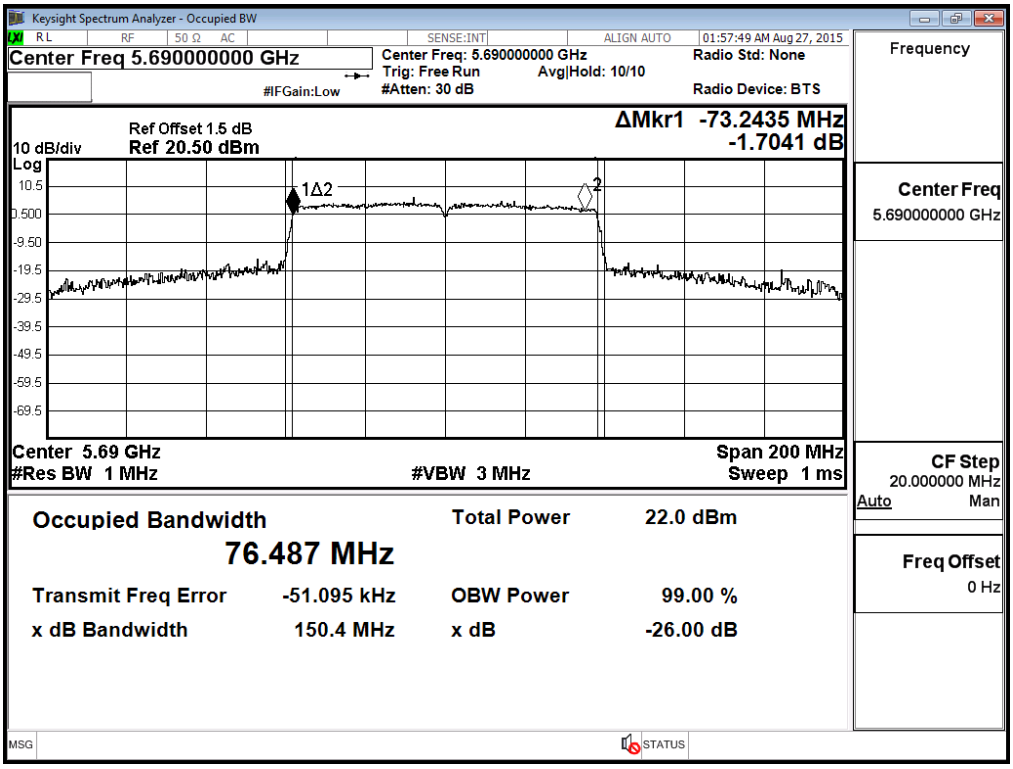
Channel 58



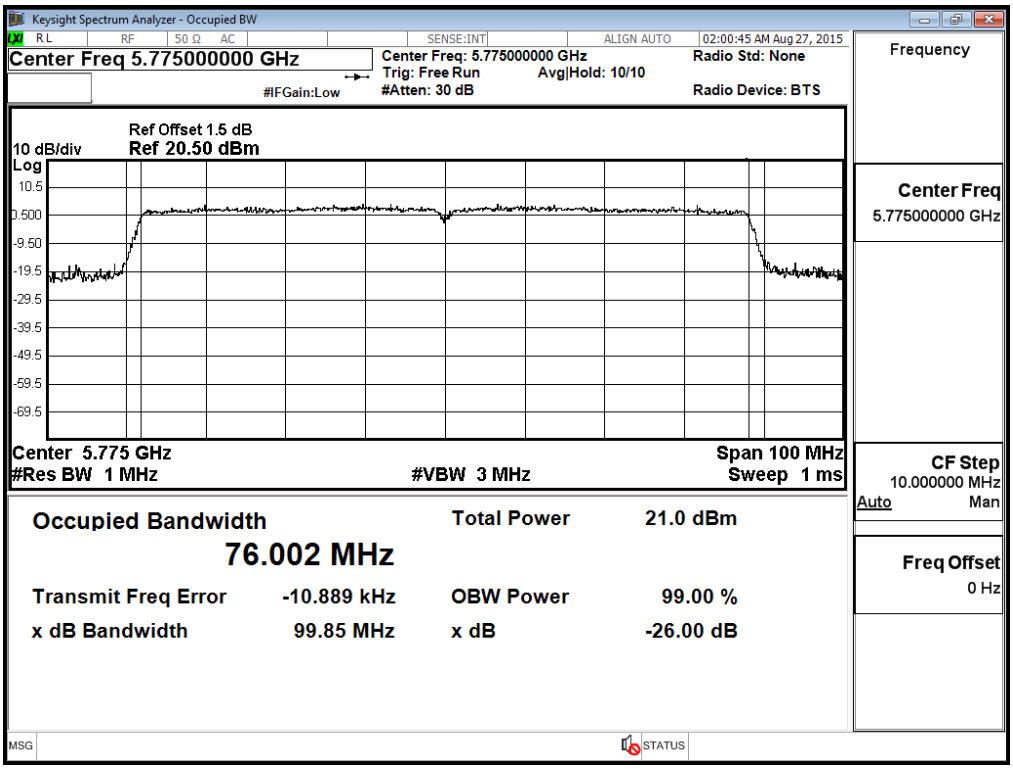
Channel 106



Channel 138

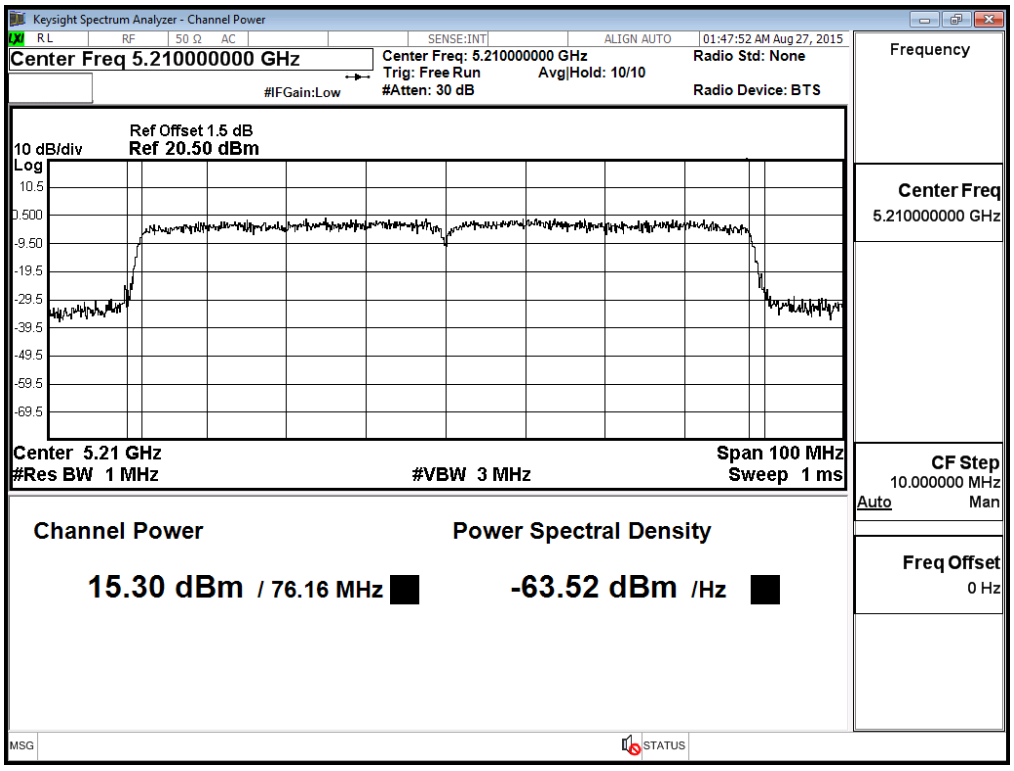


Channel 155

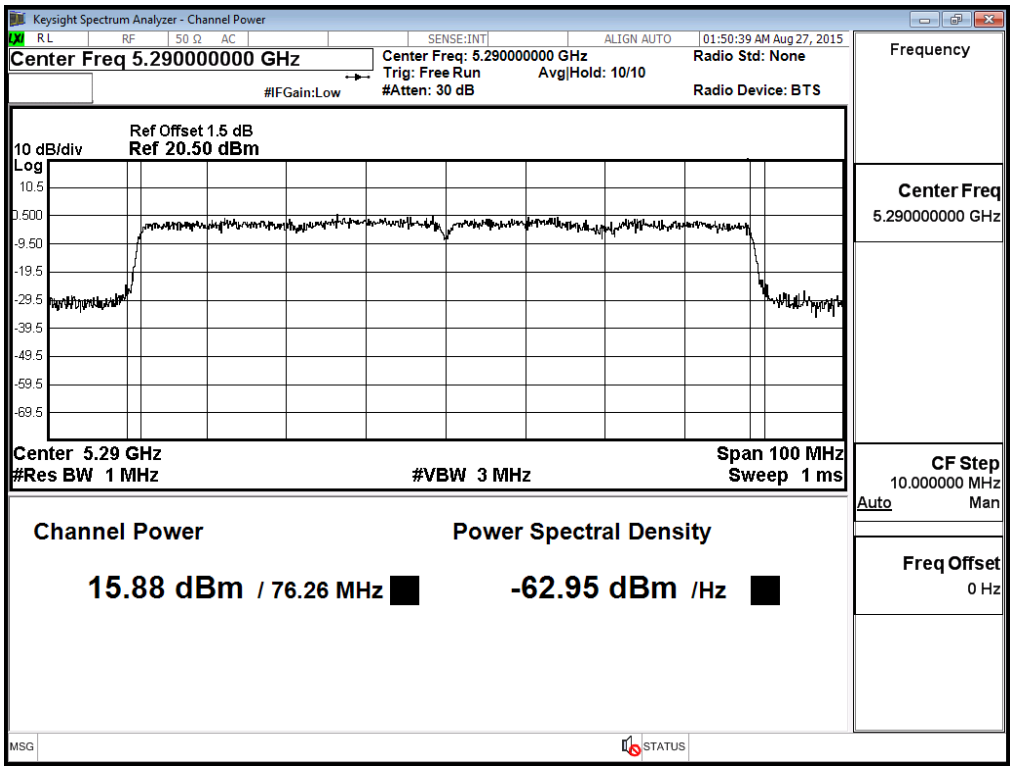

Keysight Spectrum Analyzer - Occupied BW
Center Freq 5.775000000 GHz
Center Freq: 5.775000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
02:00:45 AM Aug 27, 2015
Frequency
Ref Offset 1.5 dB
10 dB/div
Ref 20.50 dBm
Log
Center Freq
5.775000000 GHz
Center 5.775 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 100 MHz
Sweep 1 ms
CF Step
10.000000 MHz
Auto
Man
Occupied Bandwidth
76.002 MHz
Total Power 21.0 dBm
Transmit Freq Error -10.889 kHz
OBW Power 99.00 %
x dB Bandwidth 99.85 MHz
x dB -26.00 dB
Freq Offset
0 Hz
MSG
STATUS

Maximum conducted output power:

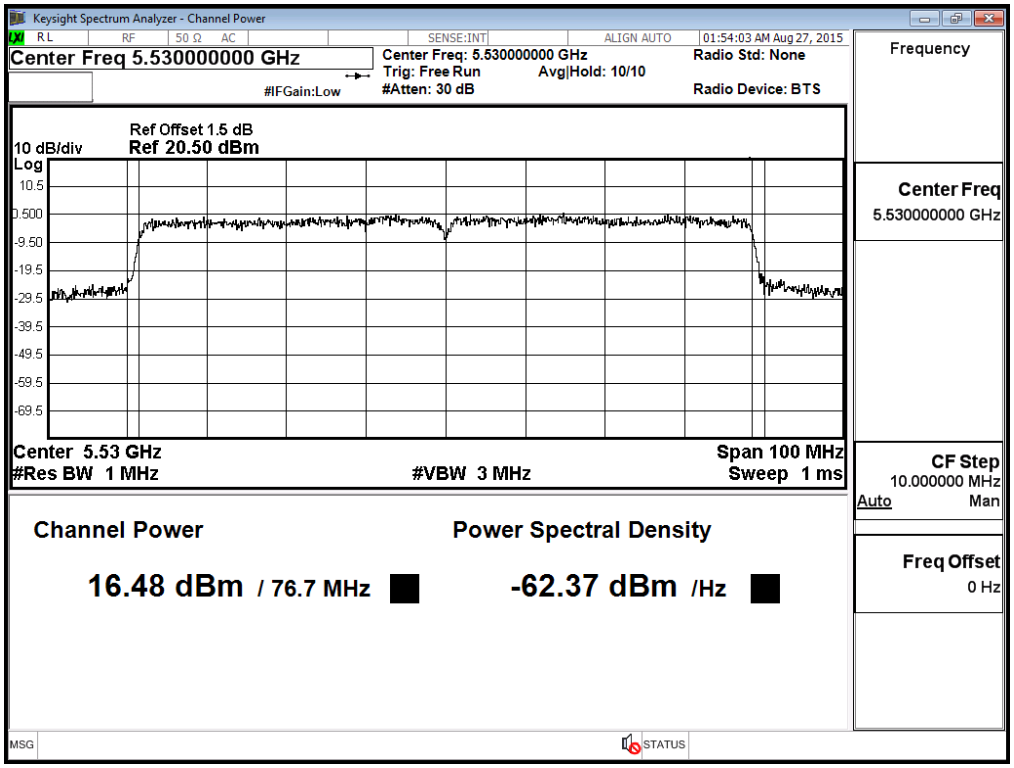
Channel 42



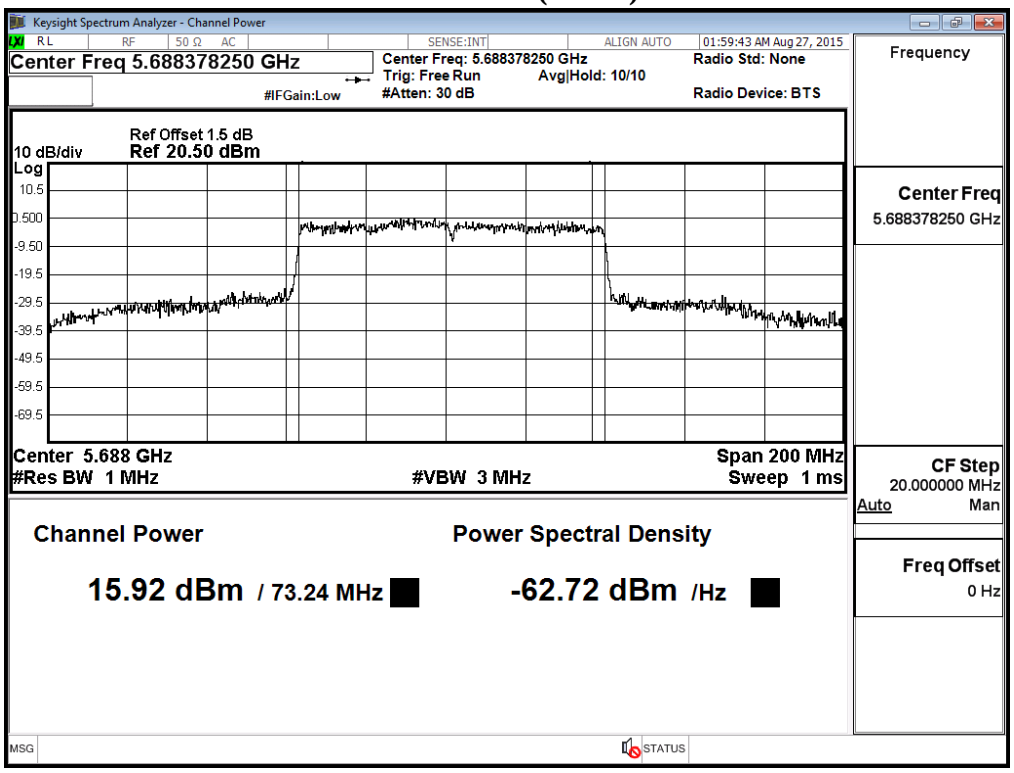
Channel 58



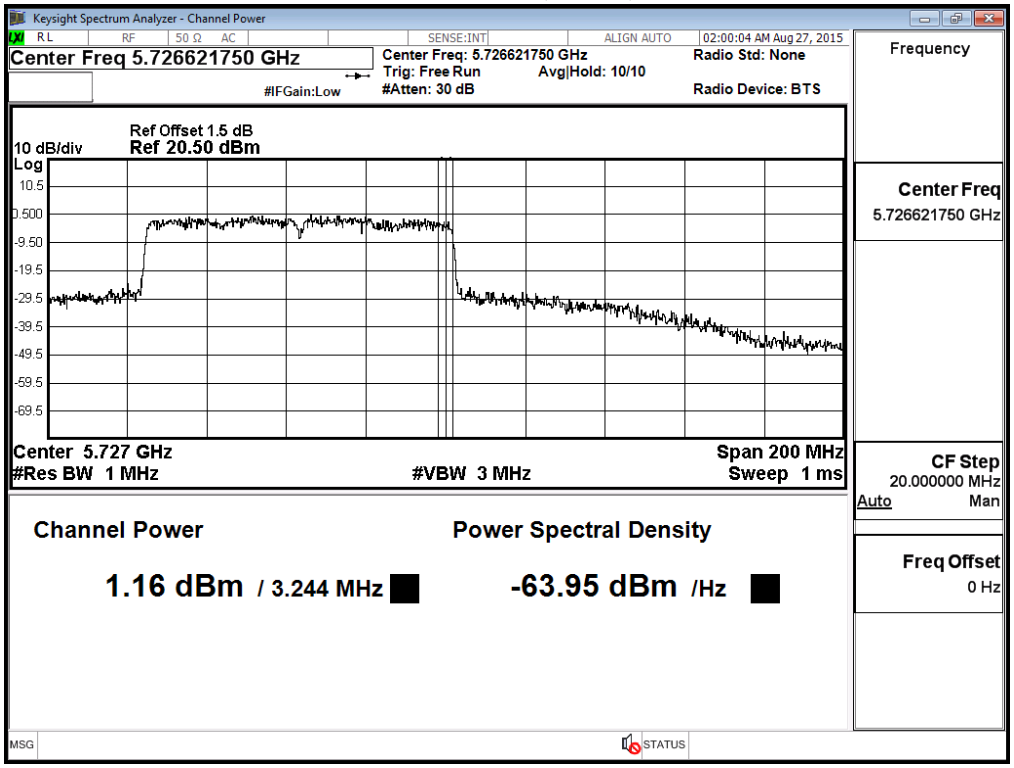
Channel 106



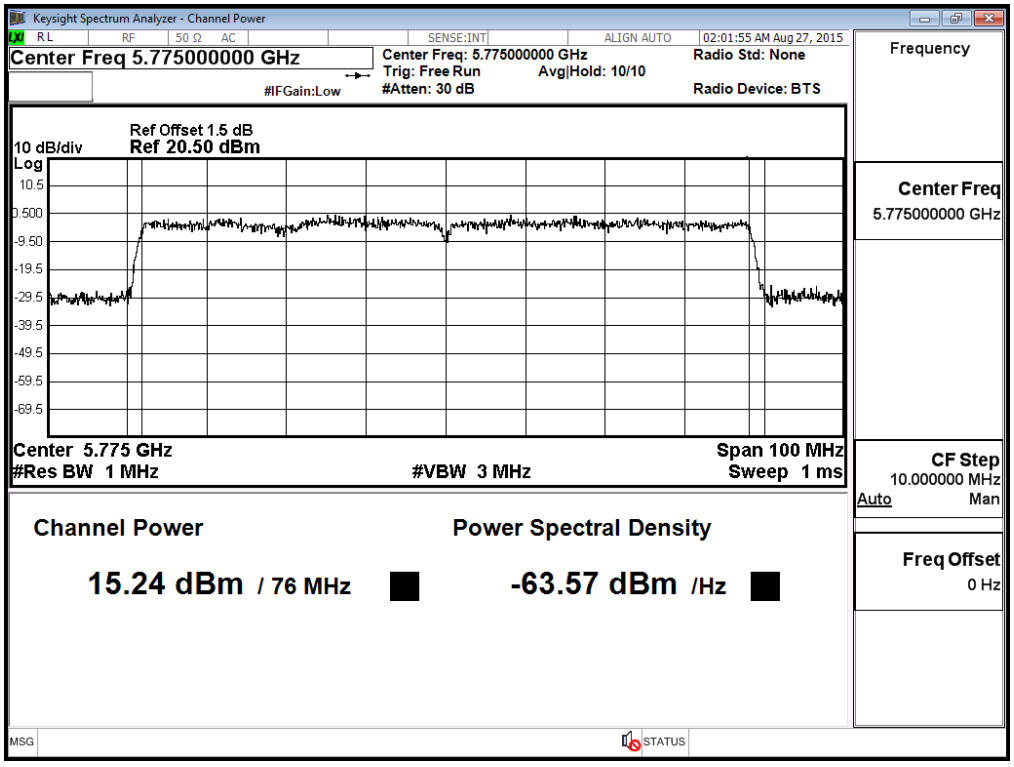
Channel 138 (Band3)



Channel 138 (Band4)



Channel 155



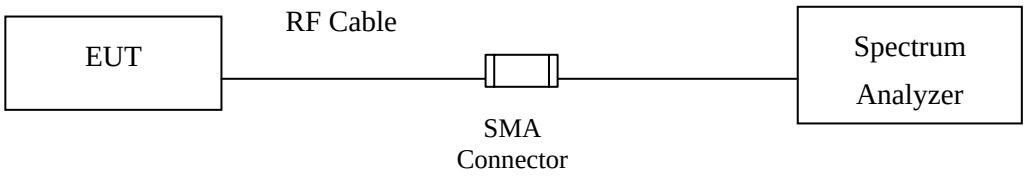
4. Peak Power Spectral Density

4.1. Test Equipment

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

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

4.2. Test Setup



4.3. Limits

(1) For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. Fixed point-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.+

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

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

4.4. Test Procedure

The EUT was setup to ANSI C63.10, 2013; tested to UNII test procedure of FCC KDB-789033 for compliance to FCC 47CFR Subpart E requirements.
The Peak Power Spectral Density using KDB 789033 section F) procedure, Create an average power spectrum for the EUT operating mode being tested by following the instructions in section E)2) for measuring maximum conducted output power using a spectrum analyzer.
SA-1 method is selected to run the test.
For the band 5.725-5.85 GHz, Scale the observed power level to an equivalent value in 500 kHz by adjusting (increase) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (500 kHz/100 kHz) = 6.98 dB.

4.5. Uncertainty

± 1.27 dB

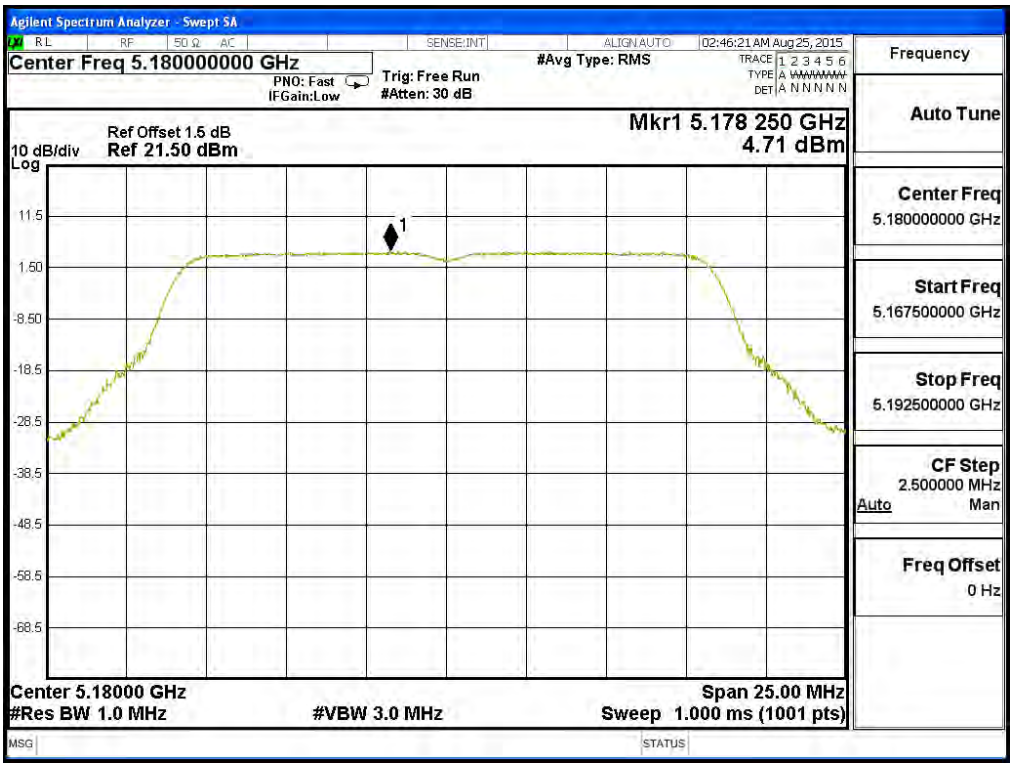
4.6. Test Result of Peak Power Spectral Density

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

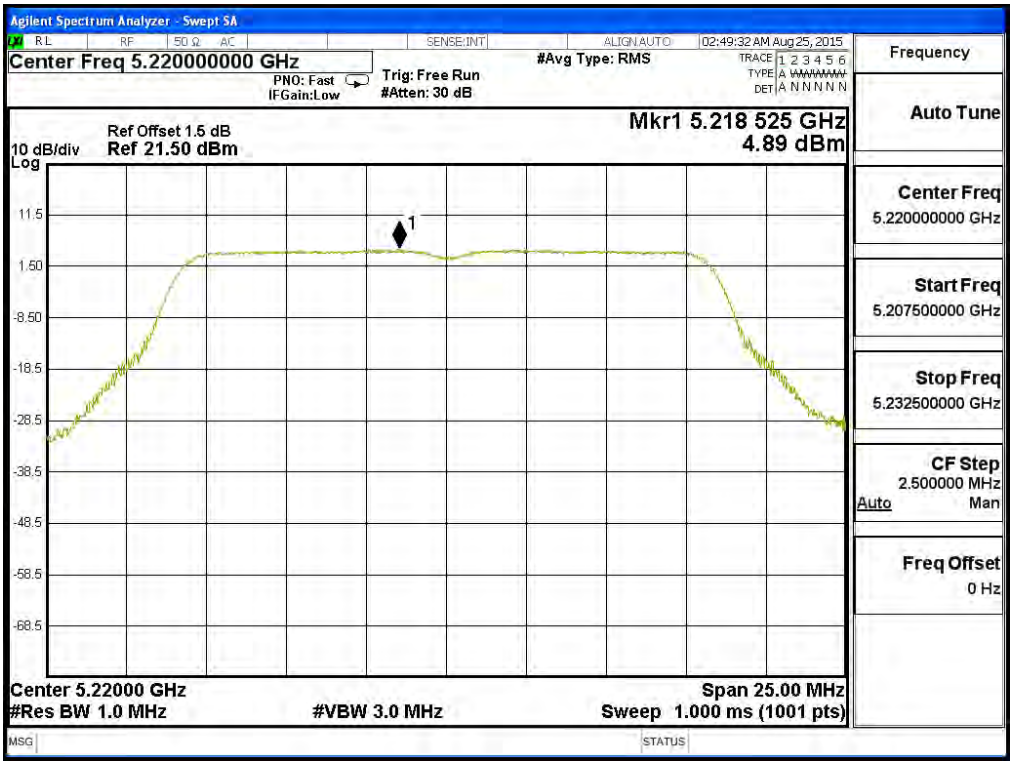
Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	4.710	11	Pass
44	5220	6	4.890	11	Pass
48	5240	6	4.670	11	Pass
52	5260	6	5.140	11	Pass
60	5300	6	3.653	11	Pass
64	5320	6	3.943	11	Pass
100	5500	6	4.429	11	Pass
116	5580	6	-0.060	11	Pass
140	5700	6	0.210	11	Pass

Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-3.15	6.98	3.83	<30	Pass
157	5785	6	-4.37	6.98	2.61	<30	Pass
165	5825	6	-4.96	6.98	2.02	<30	Pass

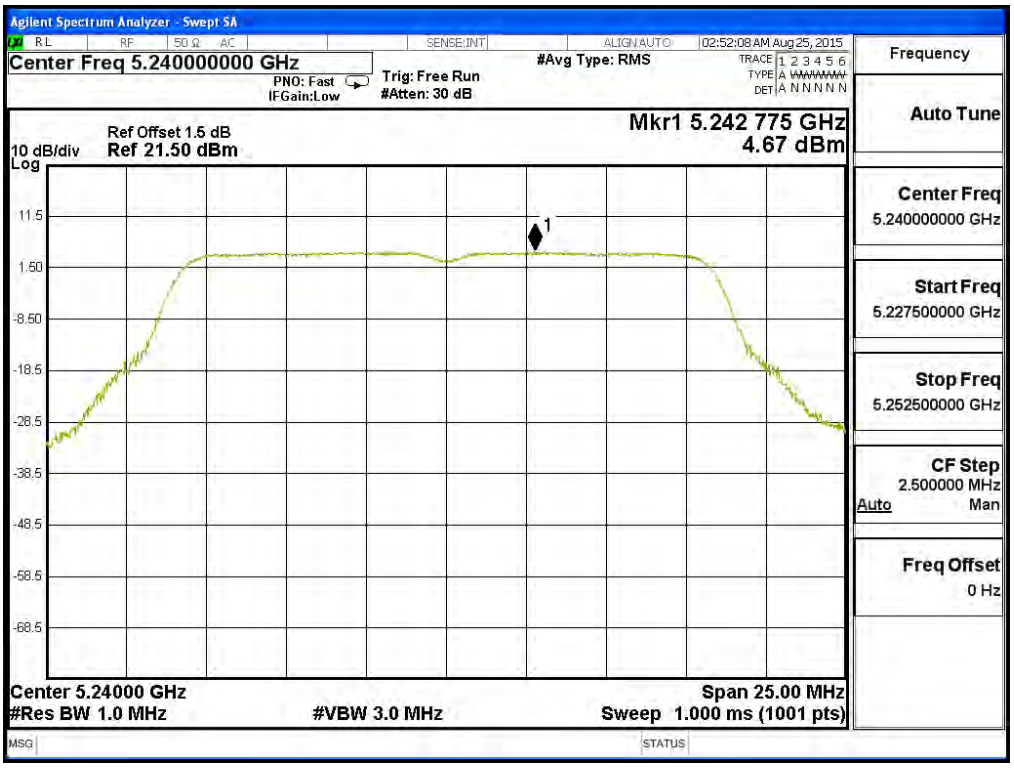
Channel 36:



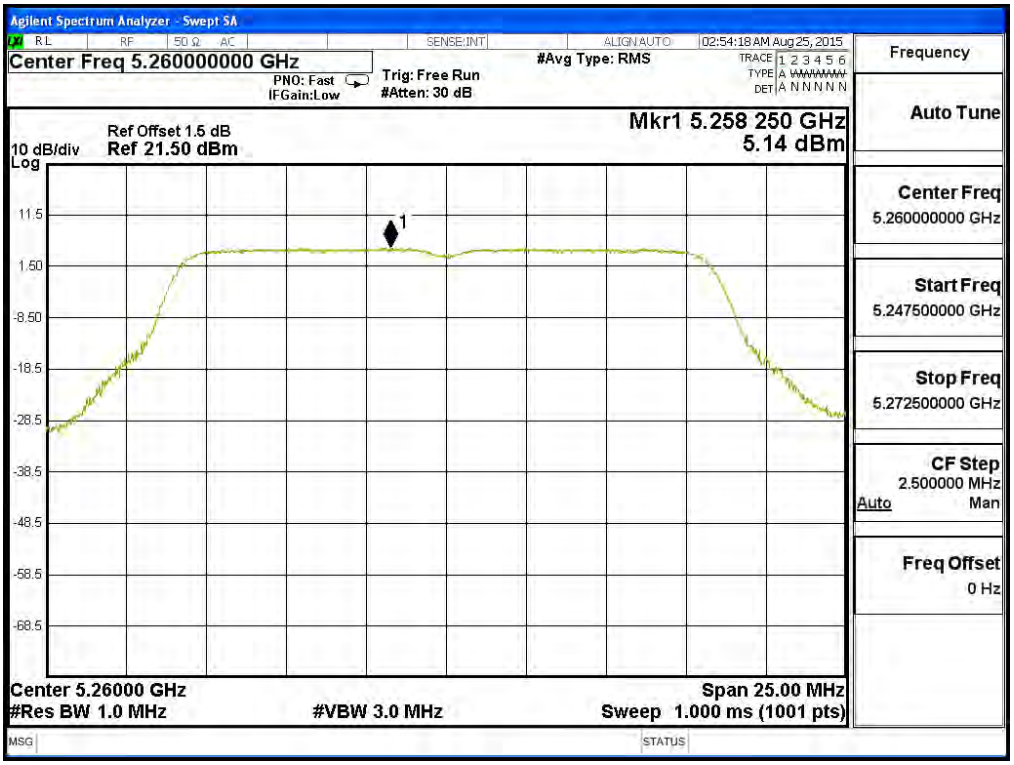
Channel 44:



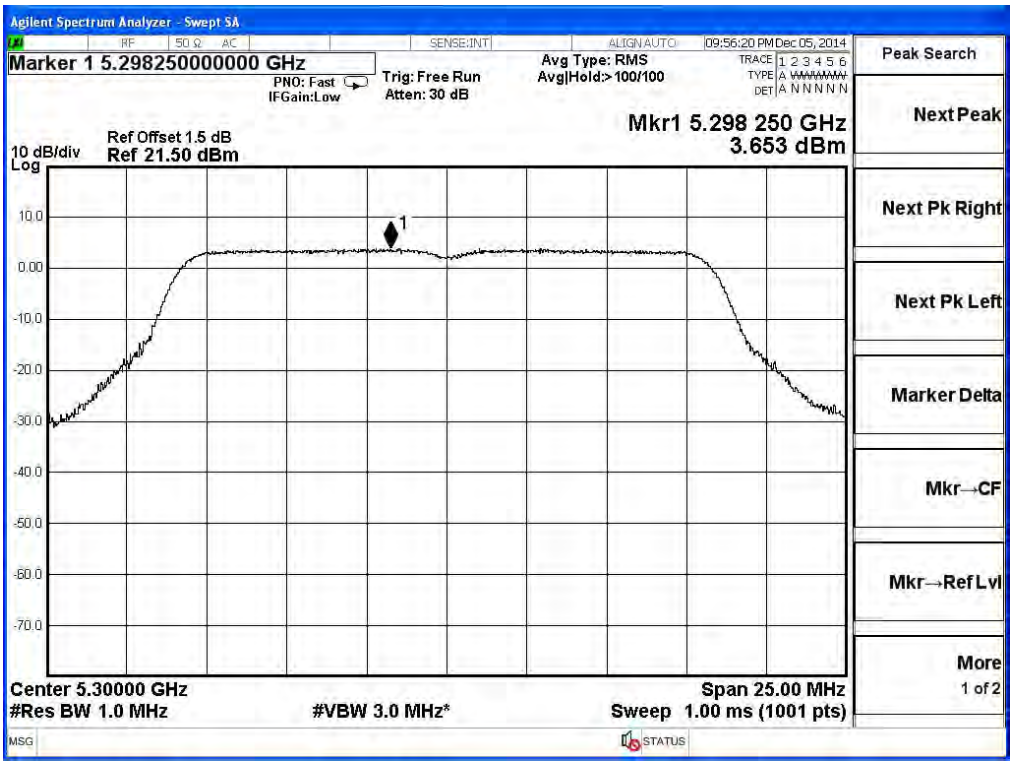
Channel 48:



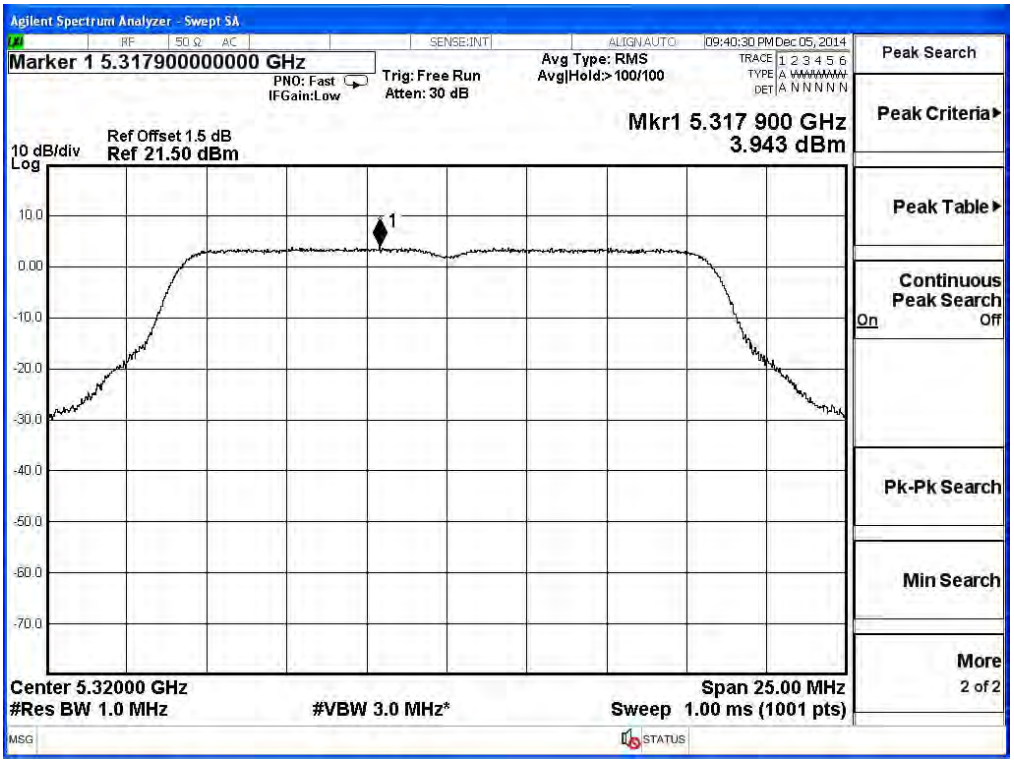
Channel 52:



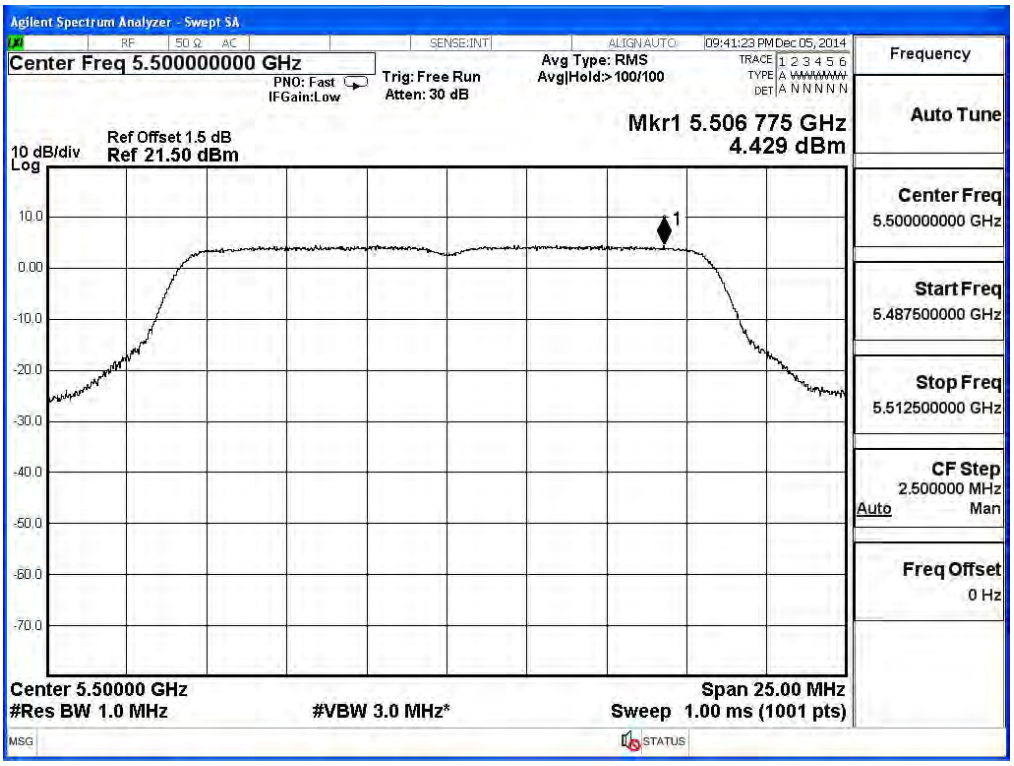
Channel 60:



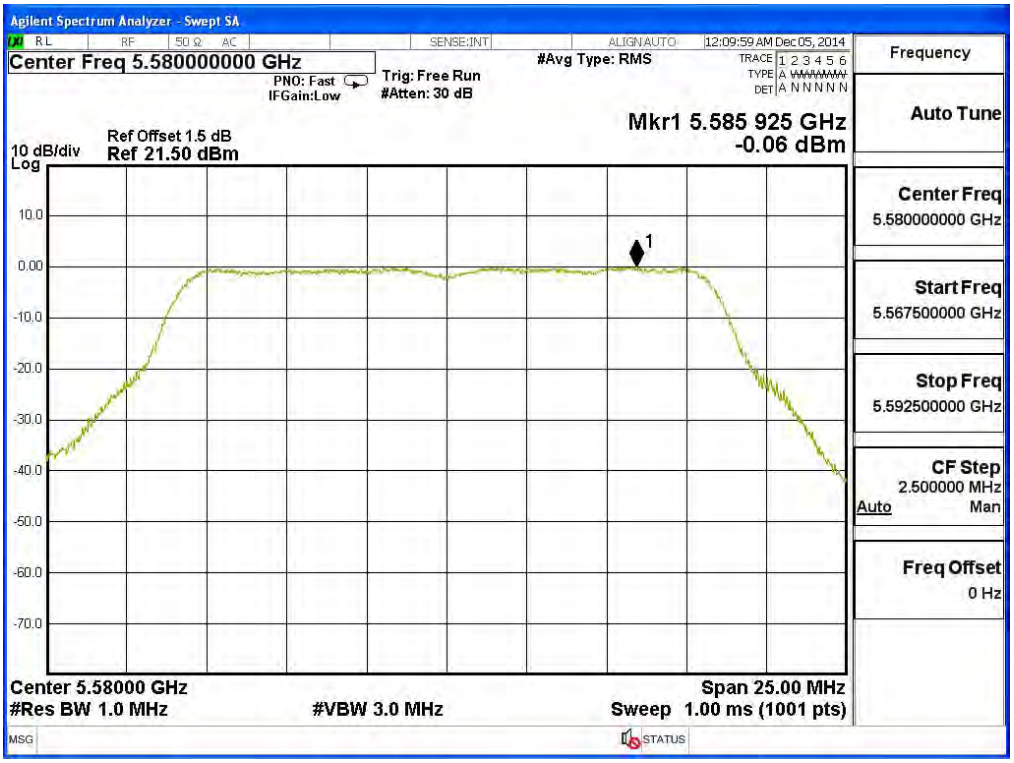
Channel 64:



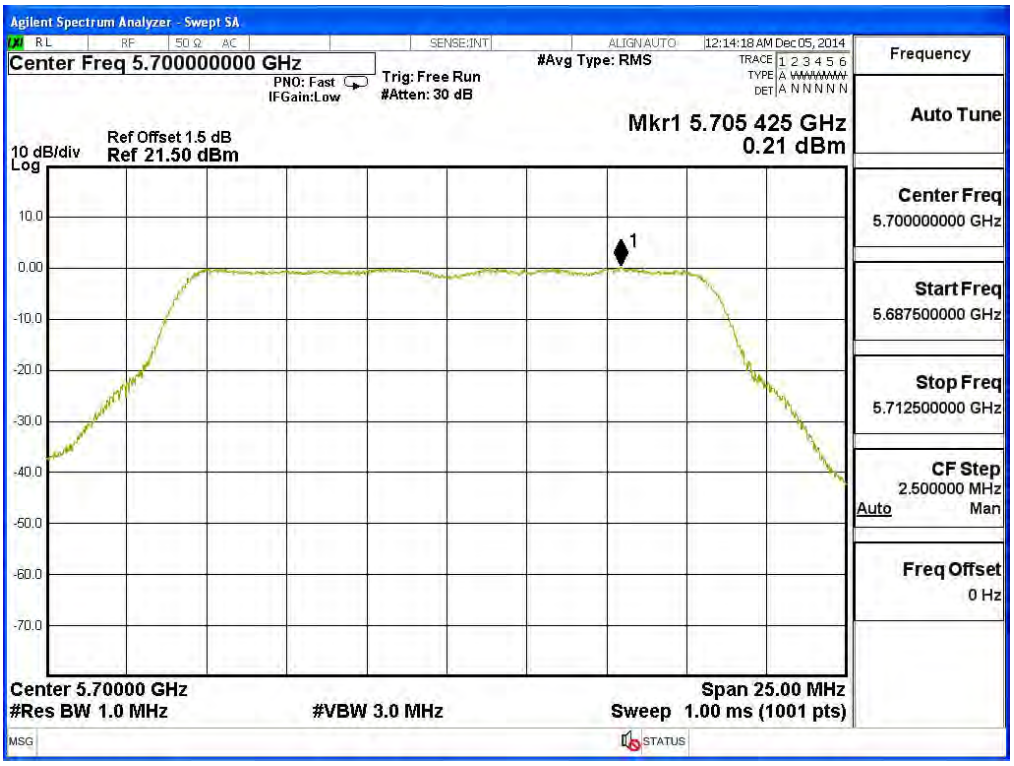
Channel 100:



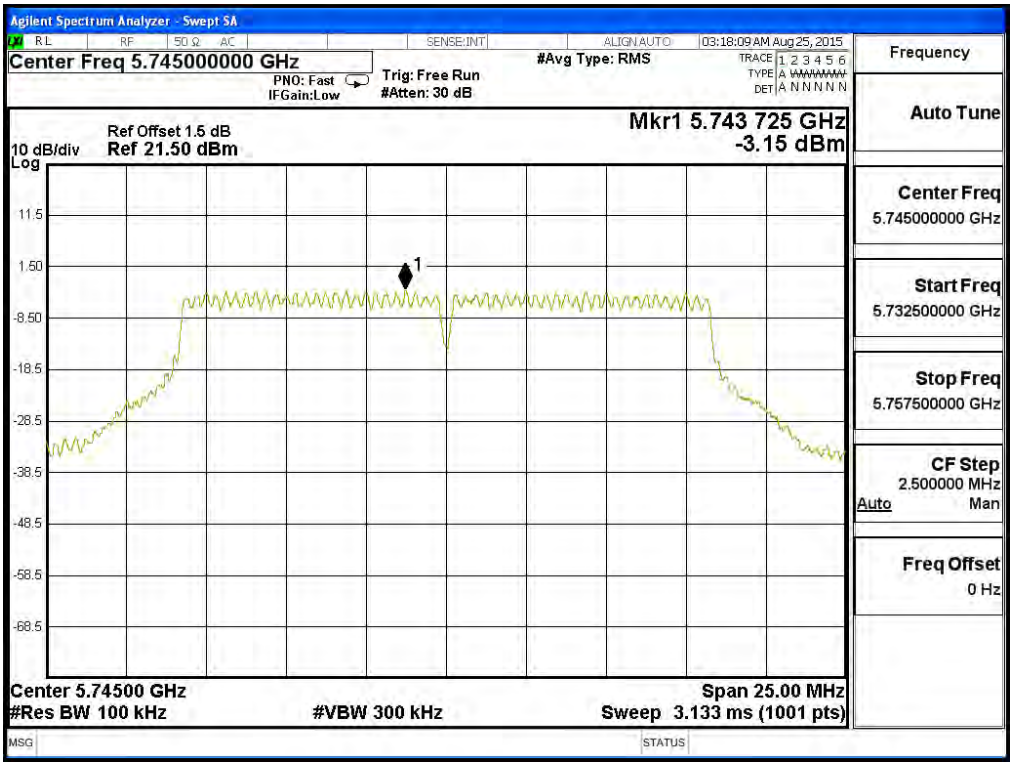
Channel 116:



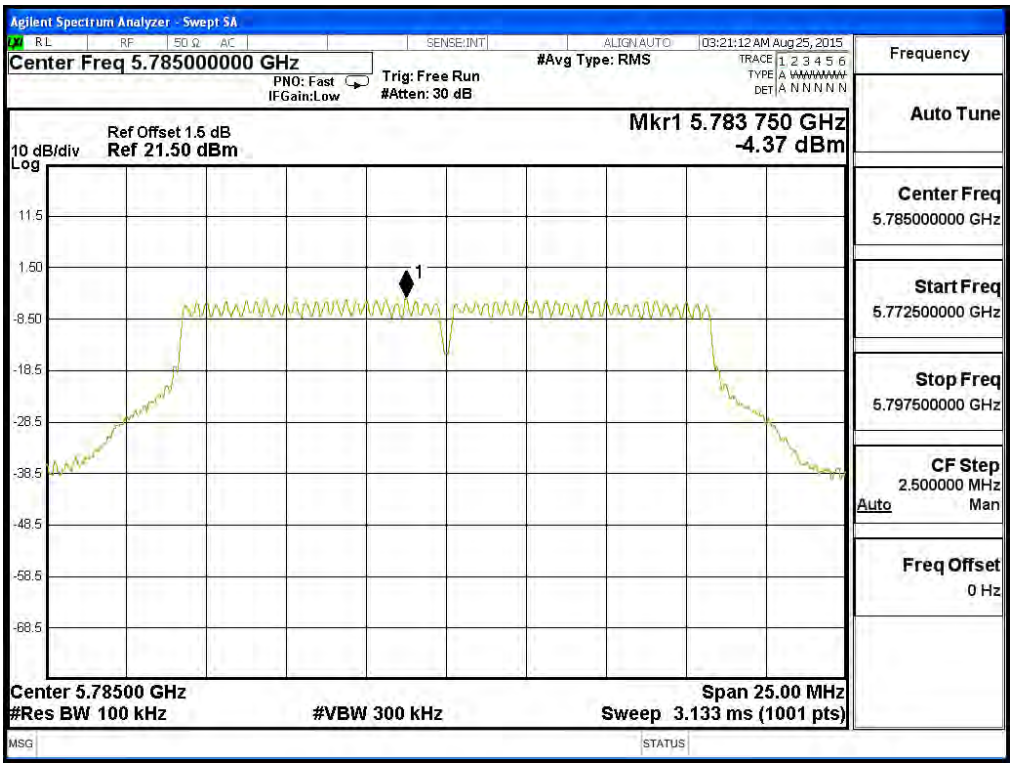
Channel 140:



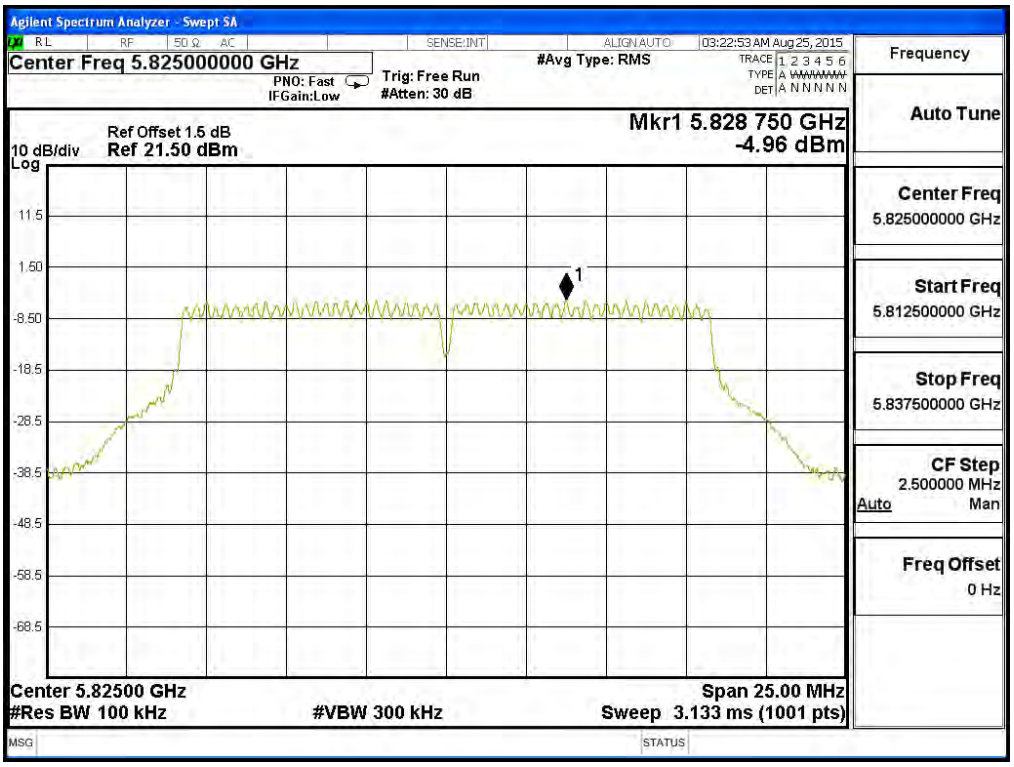
Channel 149



Channel 157



Channel 165

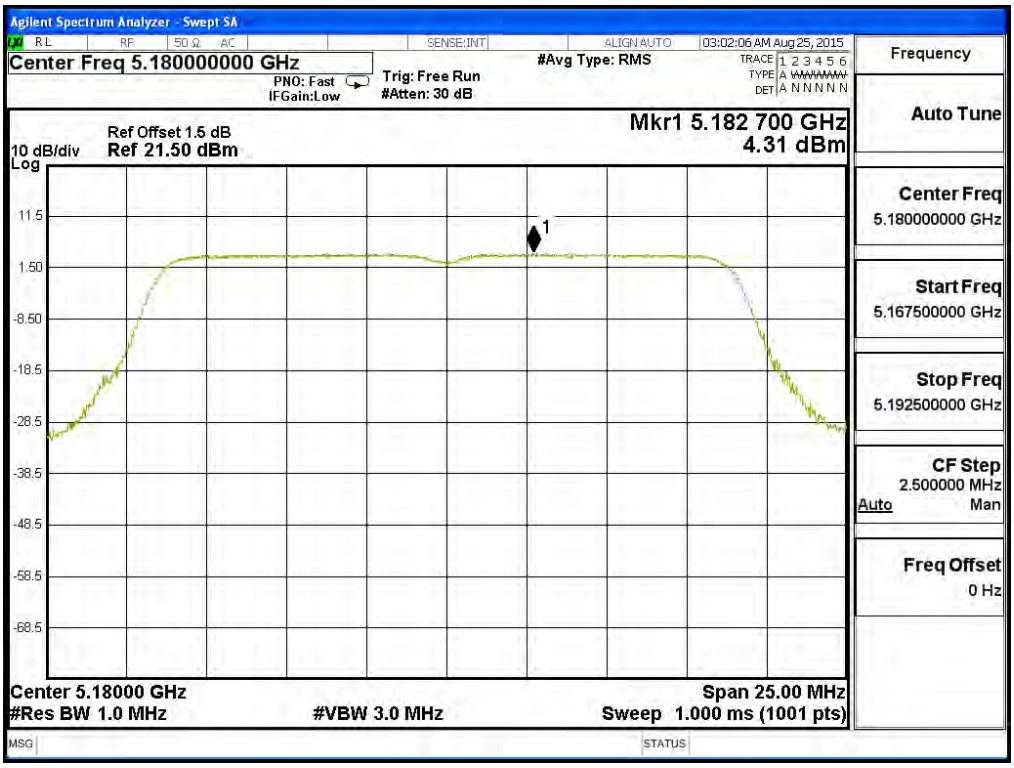


Product : OTT BOX
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

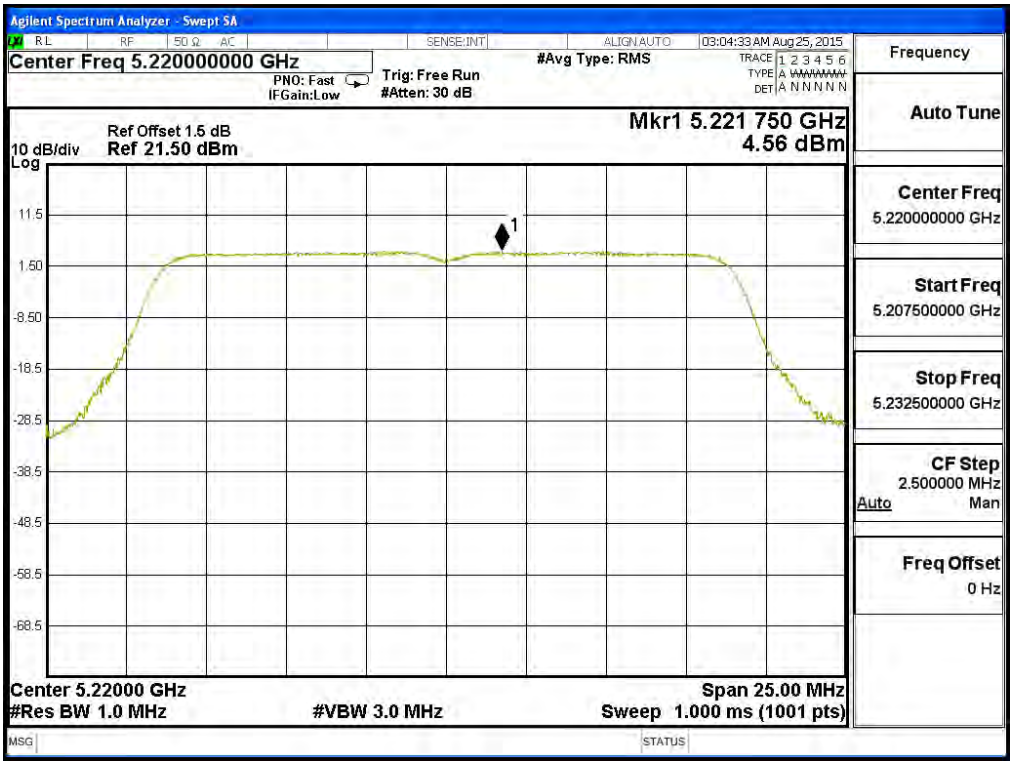
Channel Number	Frequency (MHz)	Data Rata (Mbps)	Measurement Level (dBm)	Required Limit (dBm)	Result
36	5180	6	4.310	11	Pass
44	5220	6	4.560	11	Pass
48	5240	6	4.280	11	Pass
52	5260	6	4.700	11	Pass
60	5300	6	3.690	11	Pass
64	5320	6	3.650	11	Pass
100	5500	6	4.260	11	Pass
116	5580	6	4.450	11	Pass
140	5700	6	4.420	11	Pass

Channel Number	Frequency (MHz)	Data Rata (Mbps)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)	Required Limit (dBm)	Result
149	5745	6	-4.24	6.98	2.74	<30	Pass
157	5785	6	-5.18	6.98	1.80	<30	Pass
165	5825	6	-5.41	6.98	1.57	<30	Pass

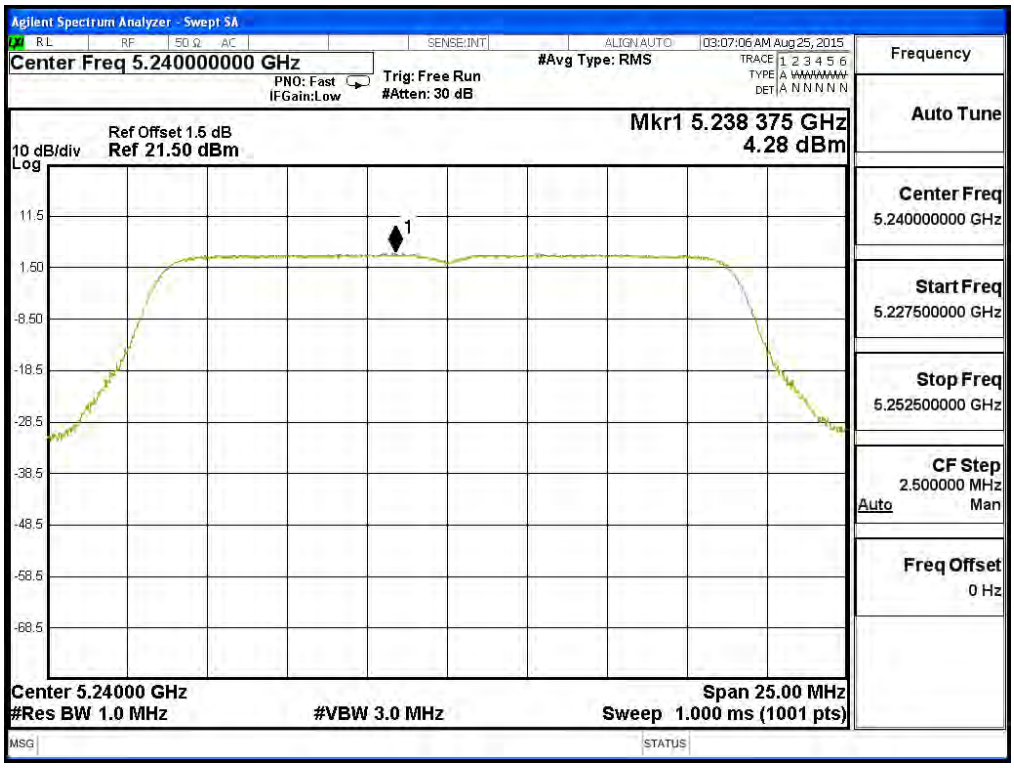
Channel 36



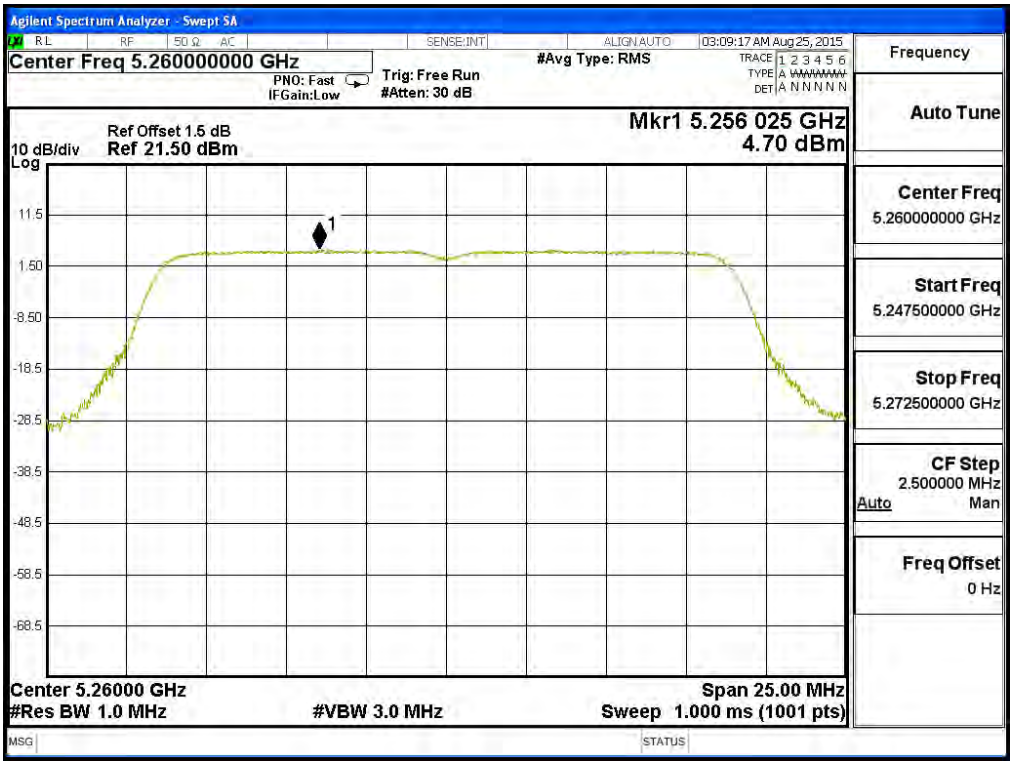
Channel 44



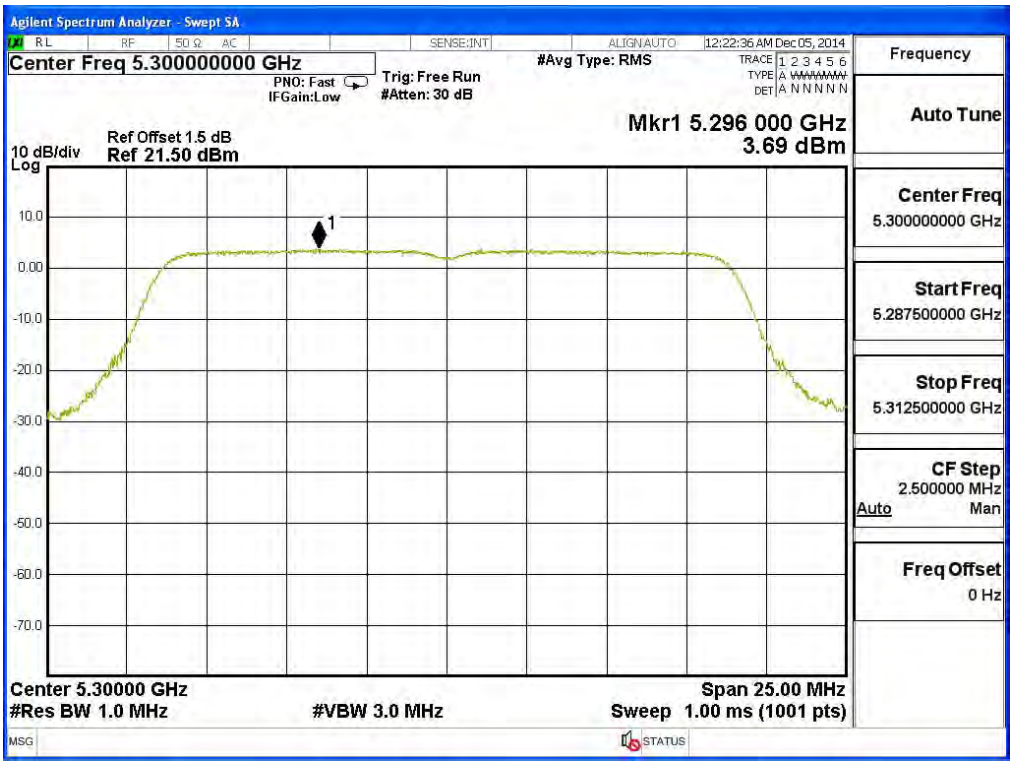
Channel 48



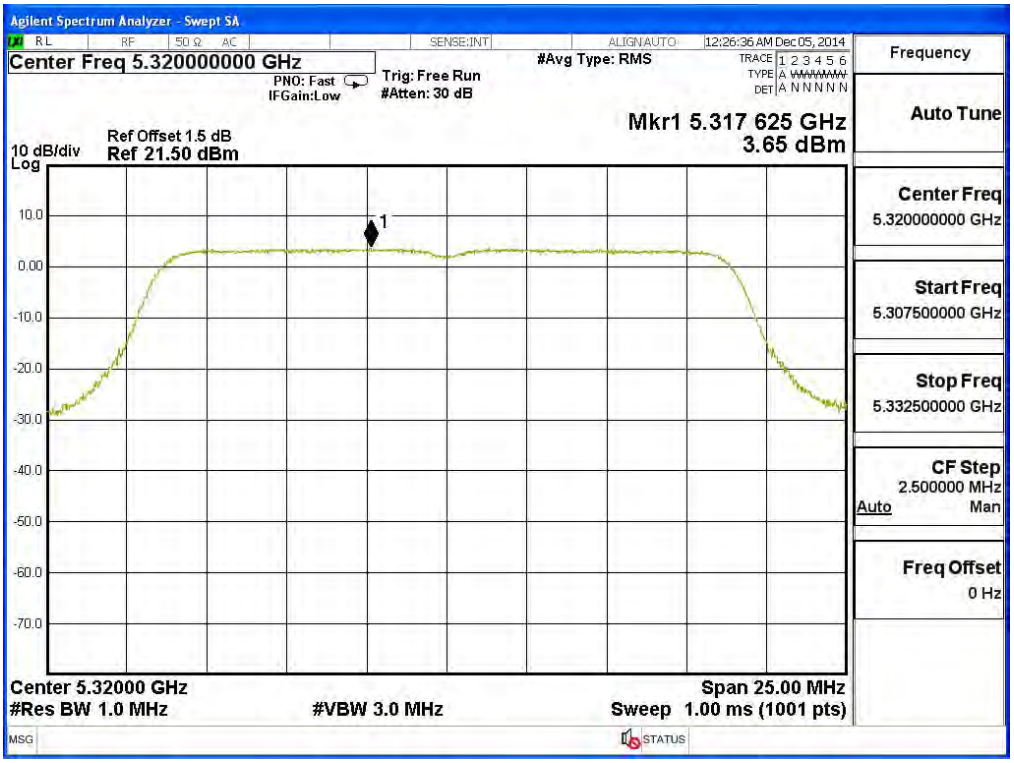
Channel 52



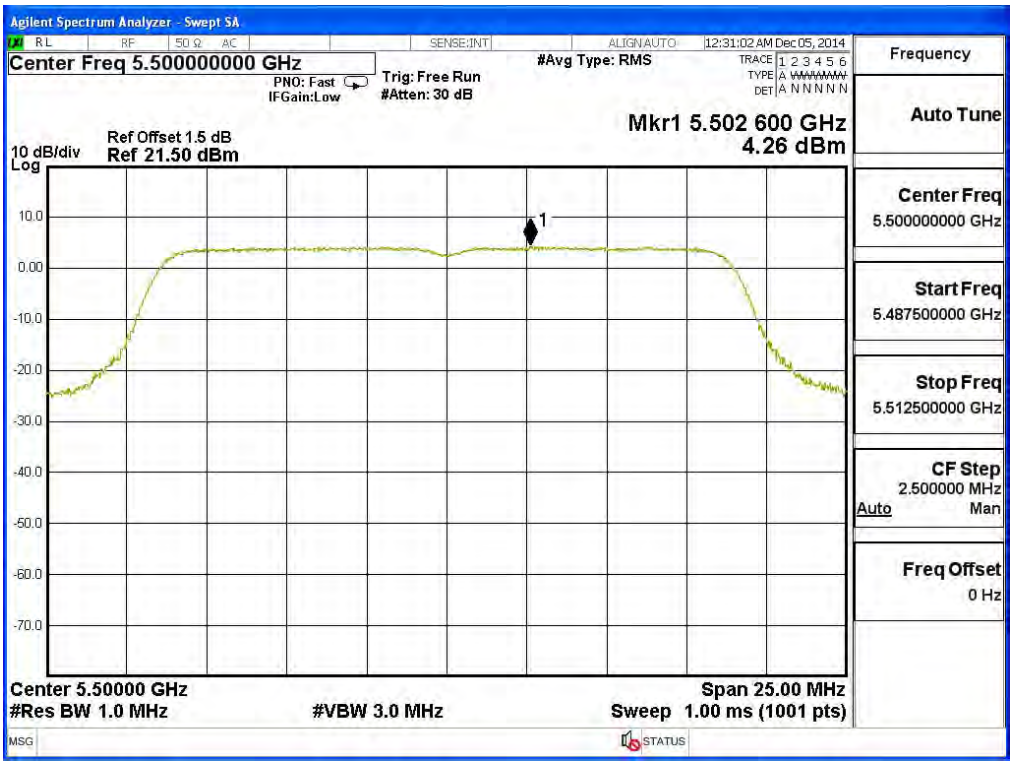
Channel 60



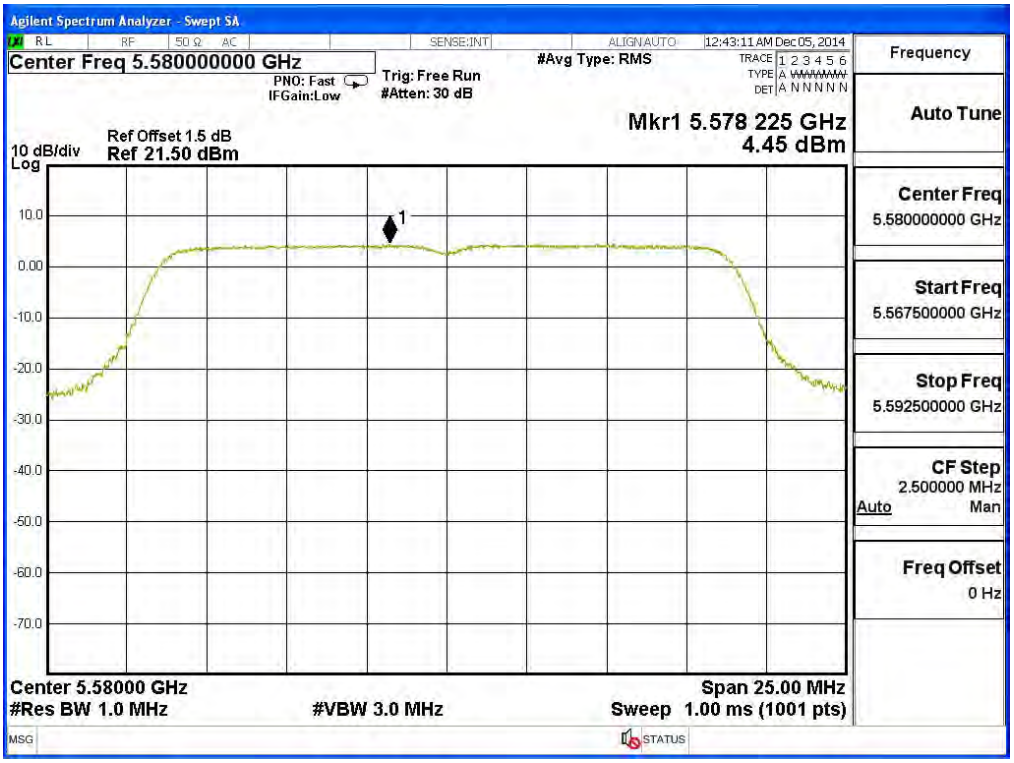
Channel 64



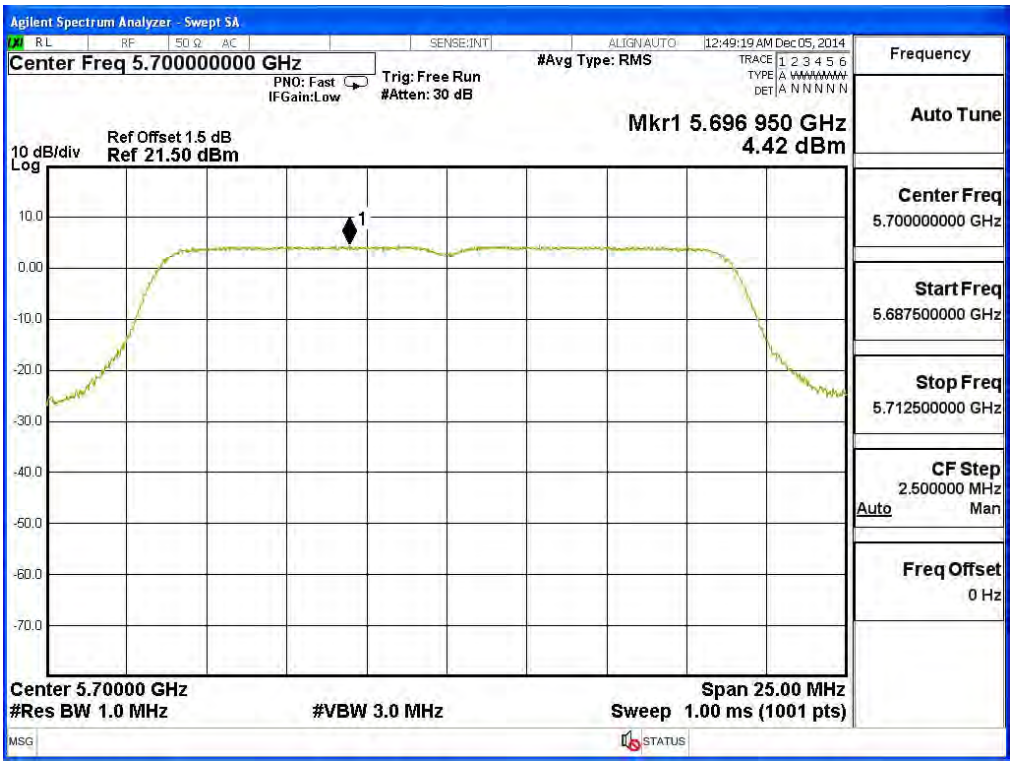
Channel 100



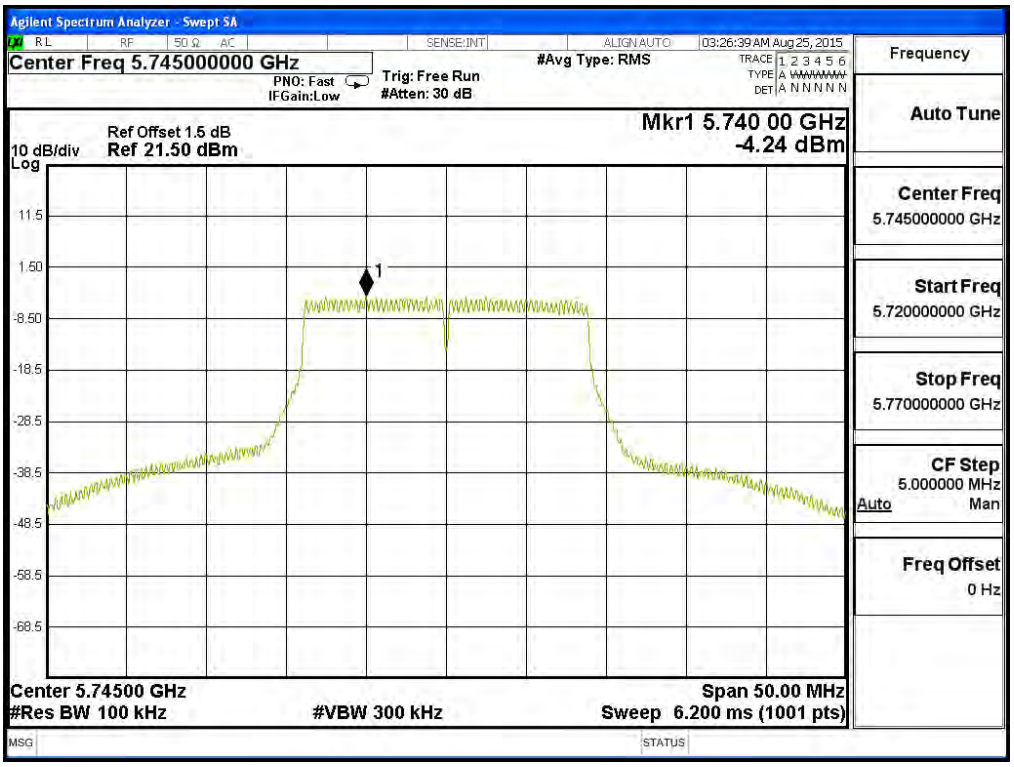
Channel 116



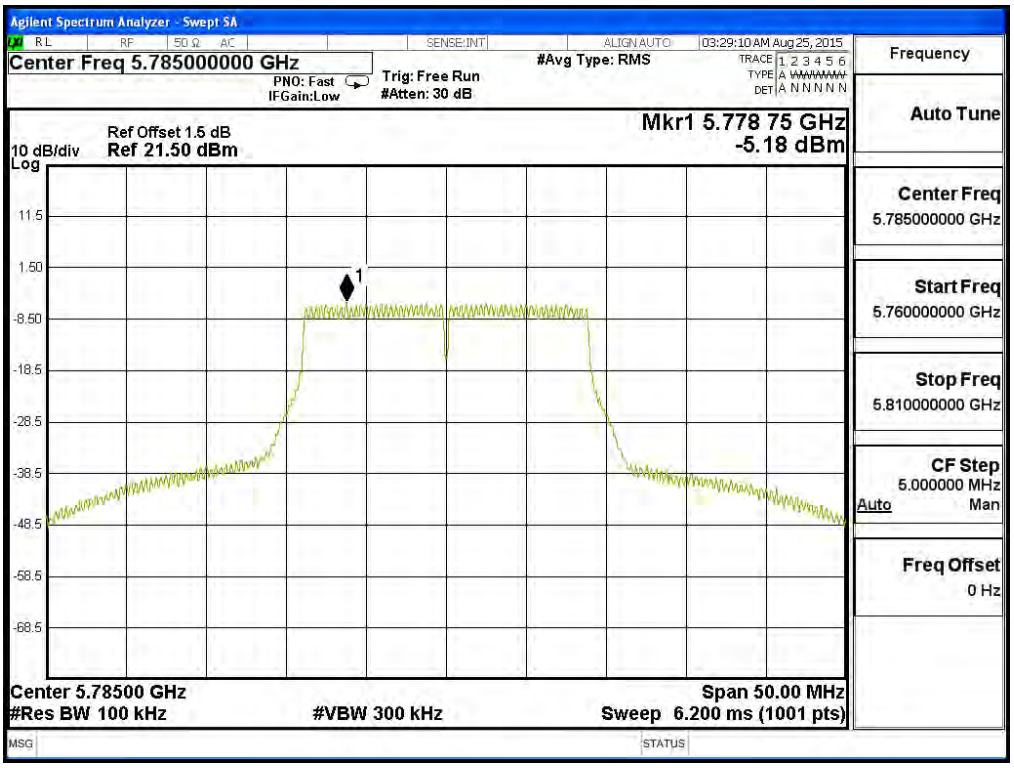
Channel 140



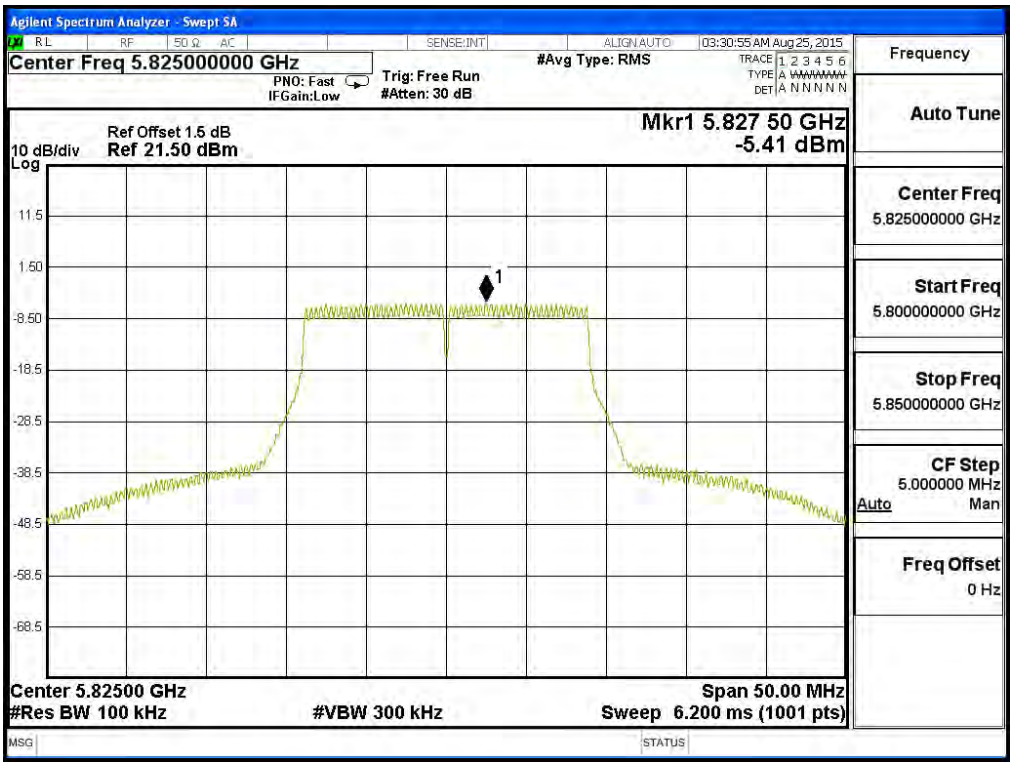
Channel 149



Channel 157



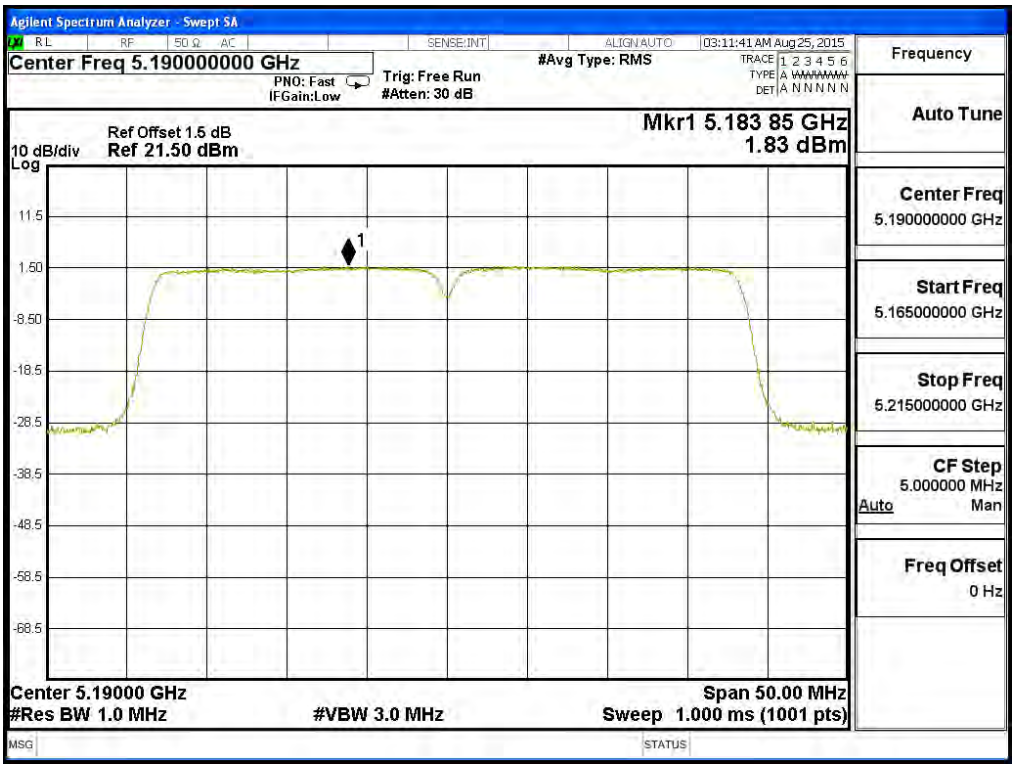
Channel 165



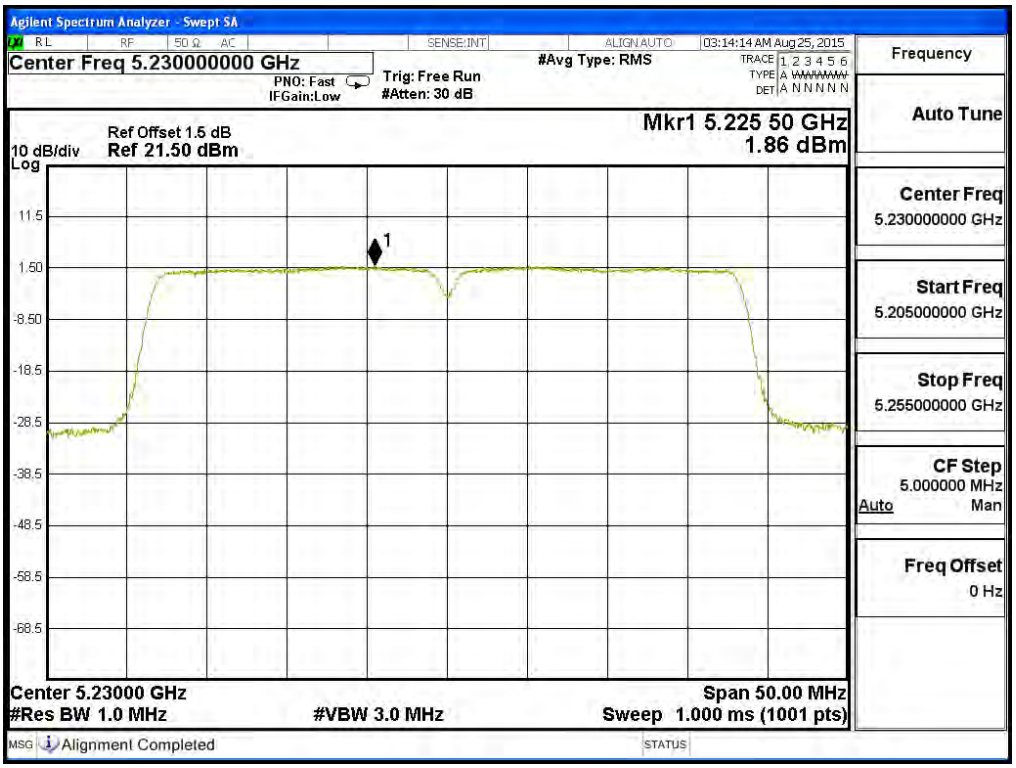
Product : OTT BOX
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps)

Channel Number	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	5190	1.830	11	Pass
46	5230	1.860	11	Pass
54	5270	0.030	11	Pass
62	5310	-1.510	11	Pass
102	5510	1.730	11	Pass
110	5550	1.860	11	Pass
134	5670	2.150	11	Pass

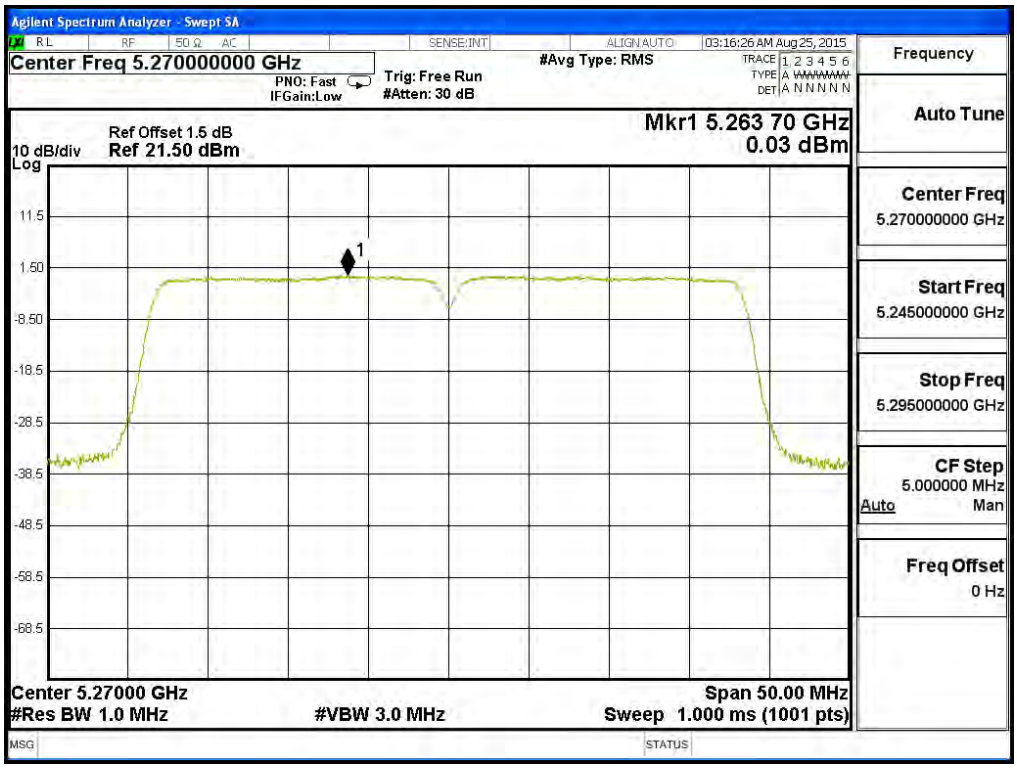
Channel 38



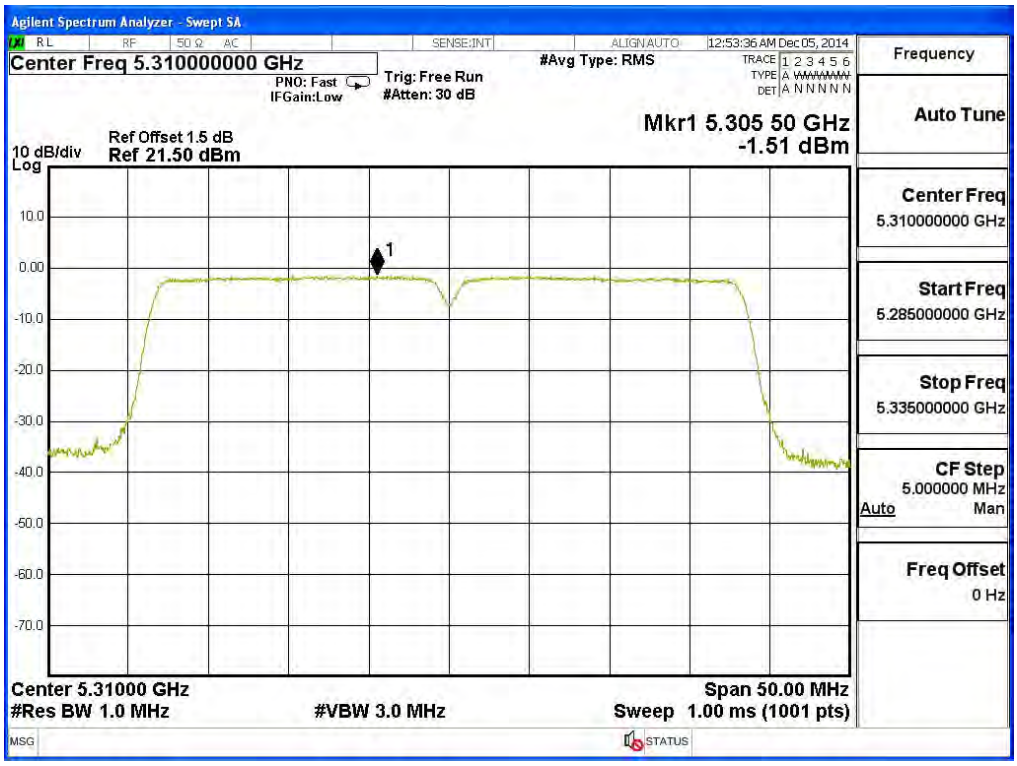
Channel 46



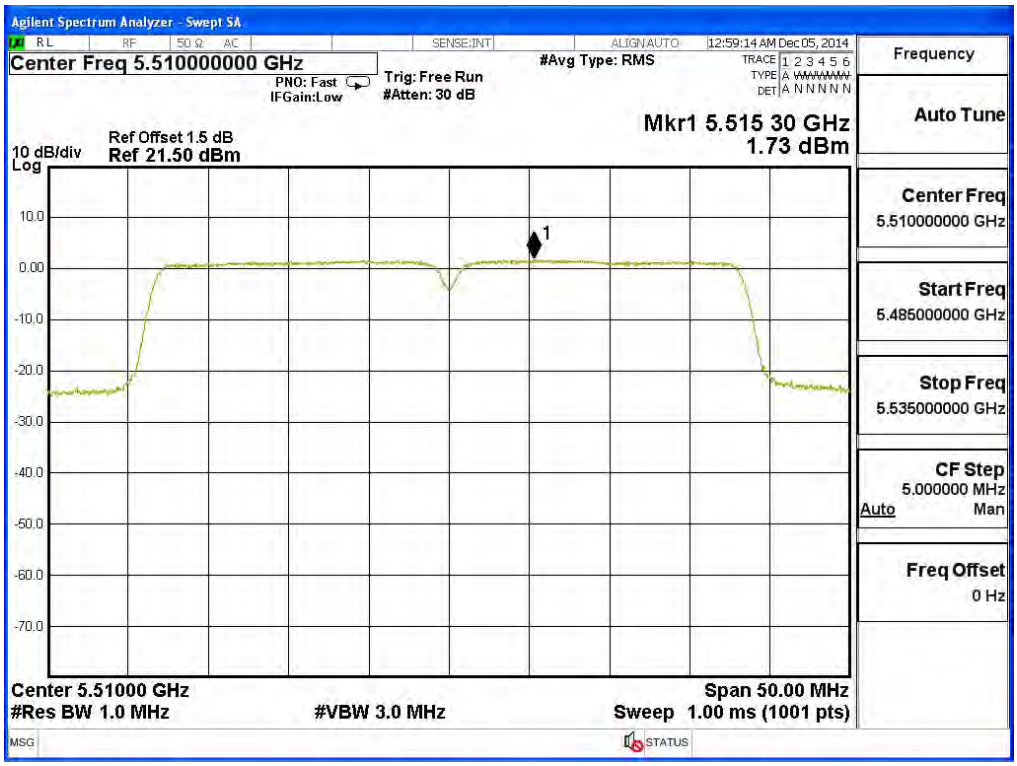
Channel 54



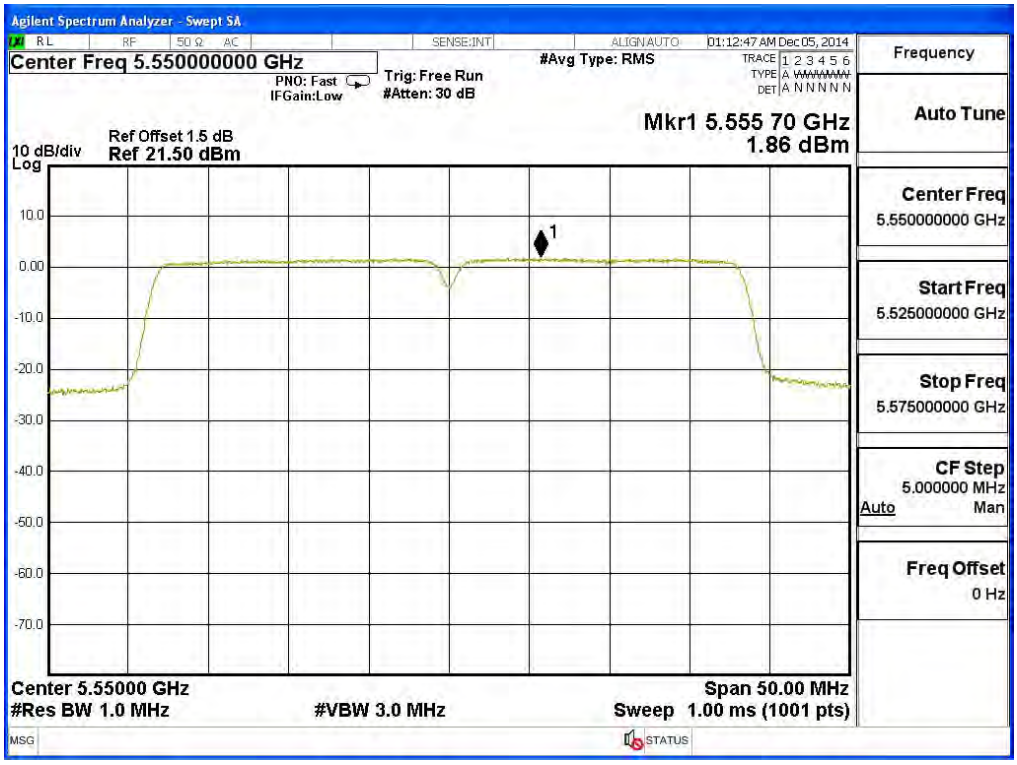
Channel 62



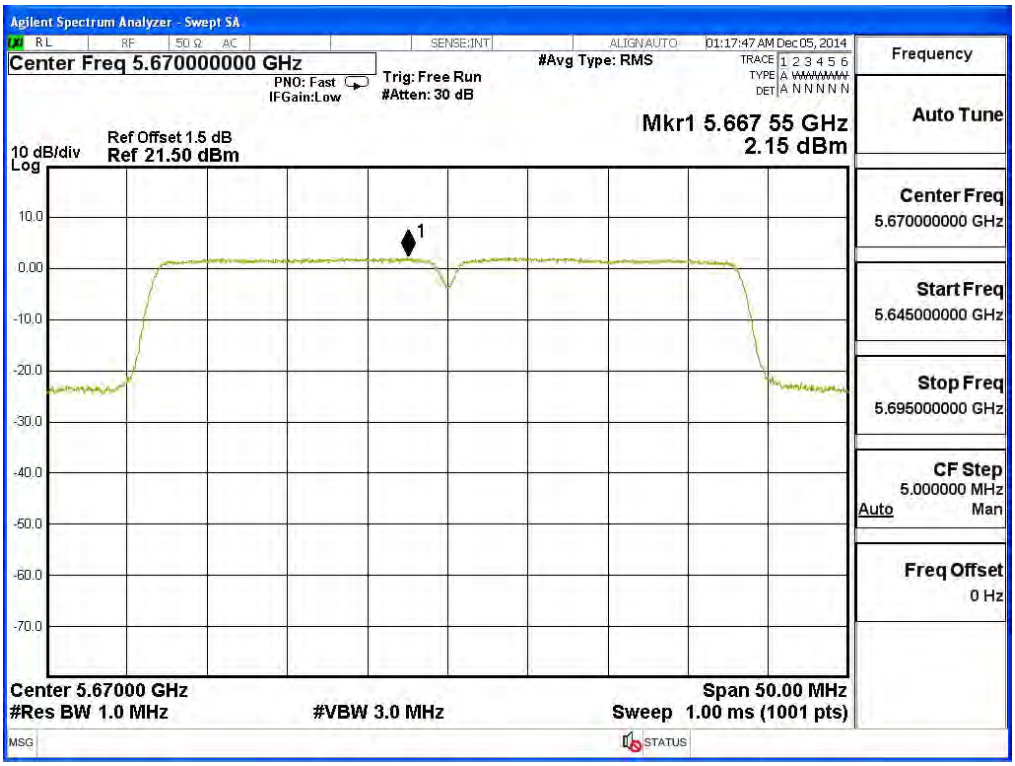
Channel 102



Channel 110



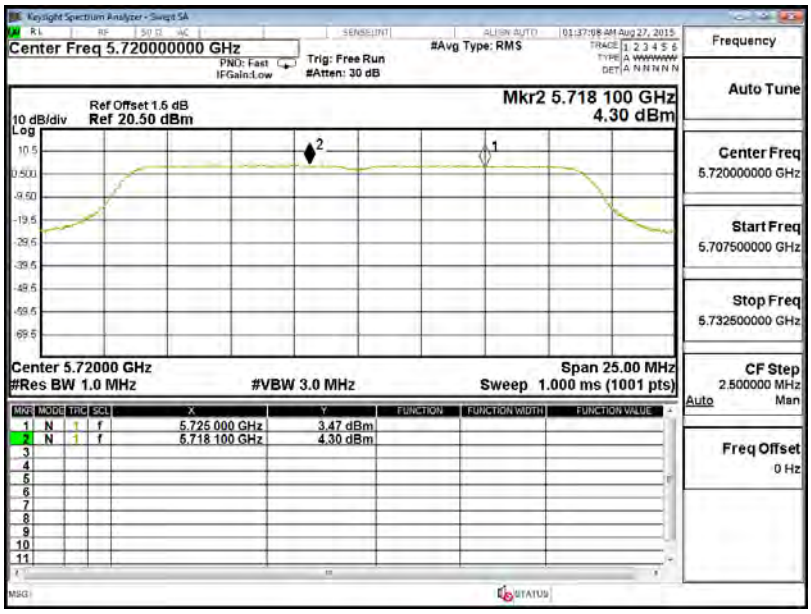
Channel 134


Agilent Spectrum Analyzer - Swept SA
Center Freq 5.670000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
01:17:47 AM Dec 05, 2014
Mkr1 5.667 55 GHz
2.15 dBm
Ref Offset 1.5 dB
10 dB/div
Ref 21.50 dBm
Log
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 5.67000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Span 50.00 MHz
Sweep 1.00 ms (1001 pts)
Frequency
Auto Tune
Center Freq
5.670000000 GHz
Start Freq
5.645000000 GHz
Stop Freq
5.695000000 GHz
CF Step
5.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

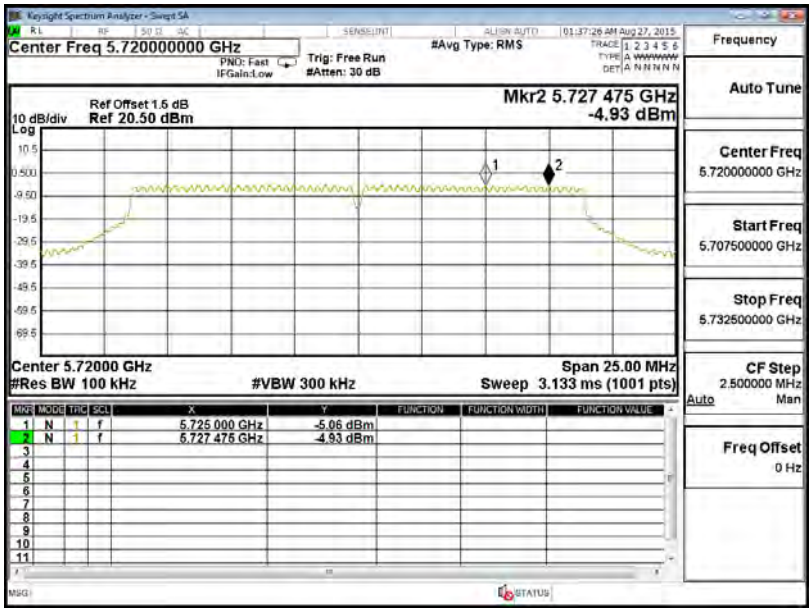
Product : OTT BOX
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-20BW-7.2Mbps)

Channel Number	Frequency (MHz)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)1	Required Limit (dBm)	Result
144	5720(Band3)	4.300	--	4.300	<11	Pass
144	5720(Band4)	-4.930	6.98	2.050	<30	Pass

Channel 144 (Band 3)



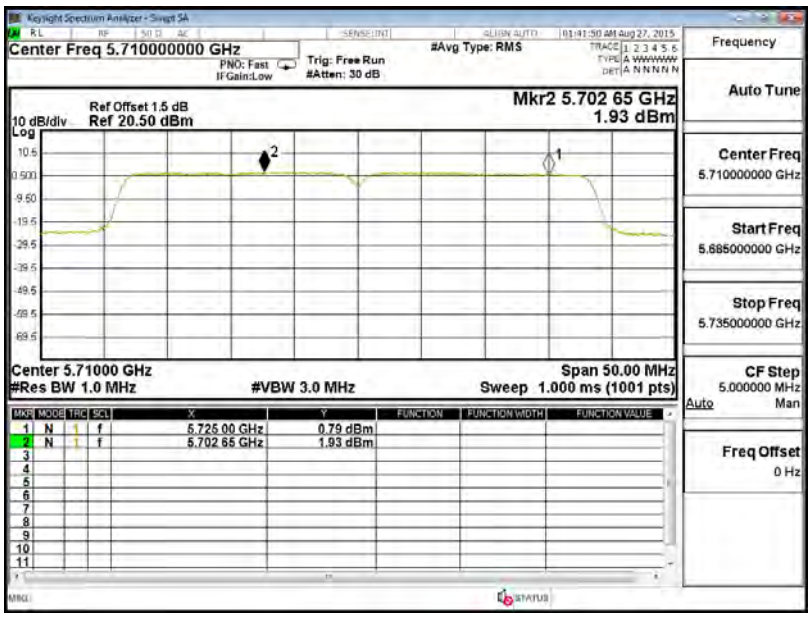
Channel 144 (Band 4)



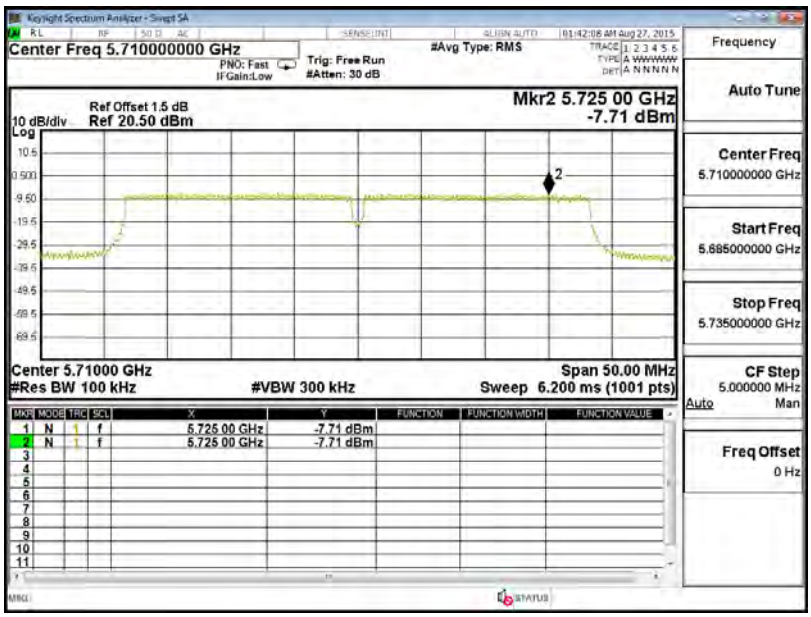
Product : OTT BOX
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit (802.11ac-40BW-15Mbps)

Channel Number	Frequency (MHz)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)1	Required Limit (dBm)	Result
142	5710 (Band3)	1.930	--	1.930	<11	Pass
142	5710 (Band4)	-7.710	6.98	-0.730	<30	Pass

Channel 142 (Band 3)



Channel 142 (Band 4)

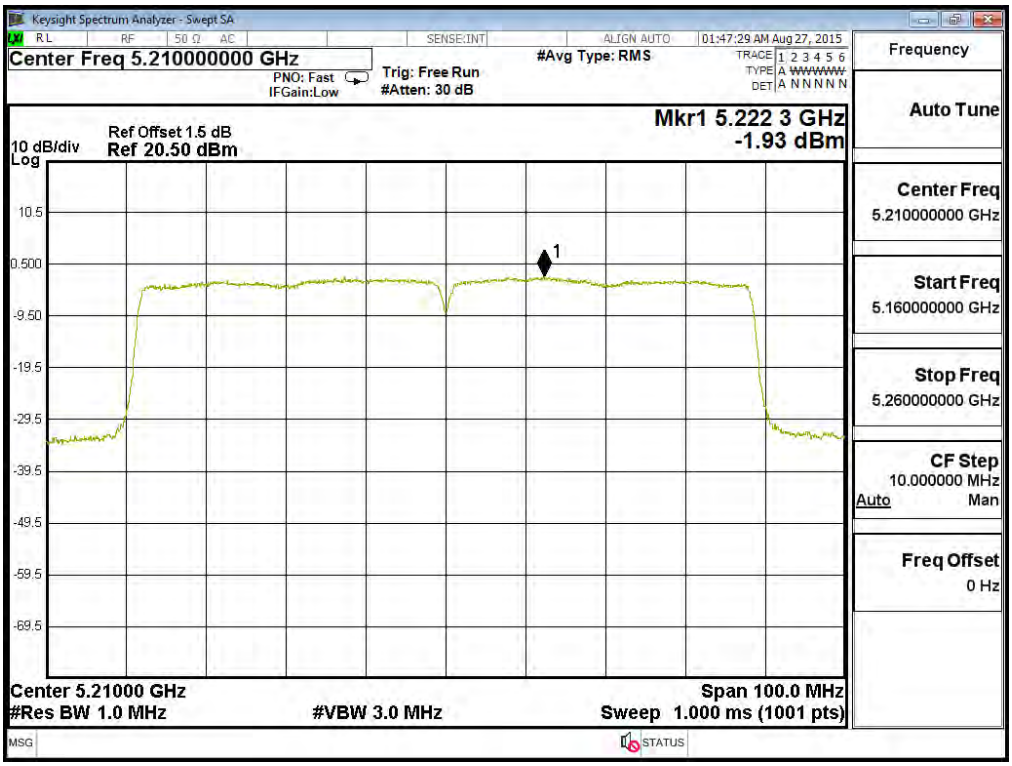


Product : OTT BOX
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps)

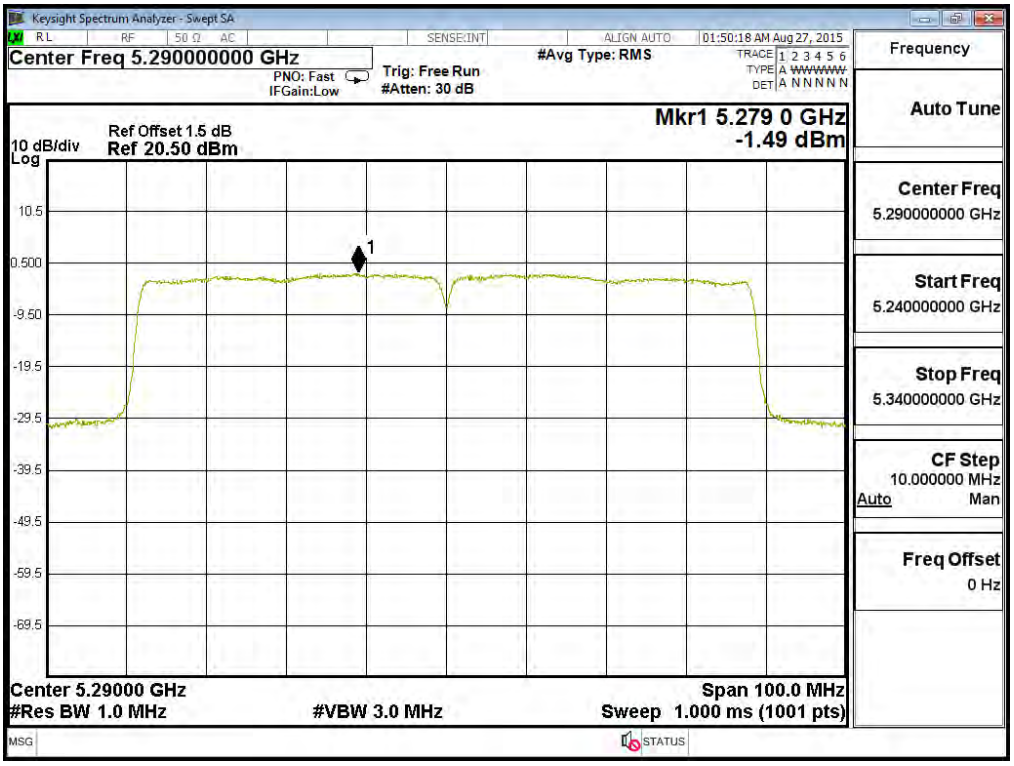
Channel Number	Frequency (MHz)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)1	Required Limit (dBm)	Result
42	5210	-1.930	--	-1.930	11	Pass
58	5290	-1.490	--	-1.490	11	Pass
106	5530	-0.930	--	-0.930	11	Pass
138	5690 (Band3)	-1.240	--	-1.240	11	Pass

Channel Number	Frequency (MHz)	PPSD (dBm)	BWCF (dB)	Total PPSD (dBm)1	Required Limit (dBm)	Result
138	5690 (Band4)	-12.010	6.98	-5.030	<30	Pass
155	5775	-10.750	6.98	-3.770	<30	Pass

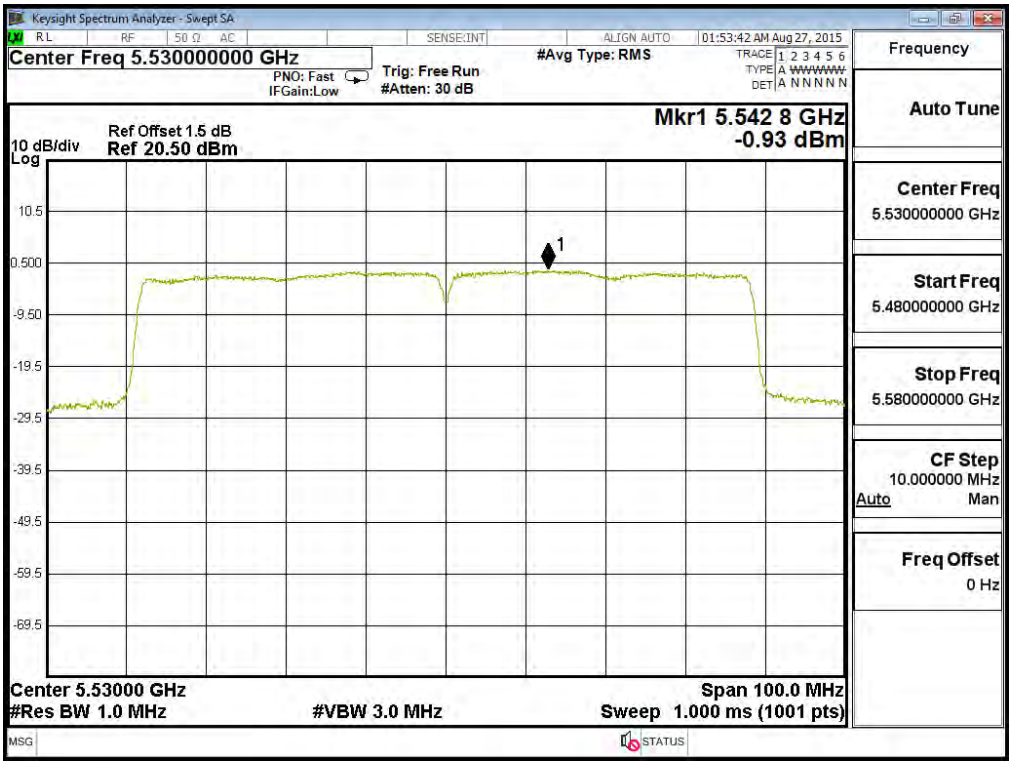
Channel 42



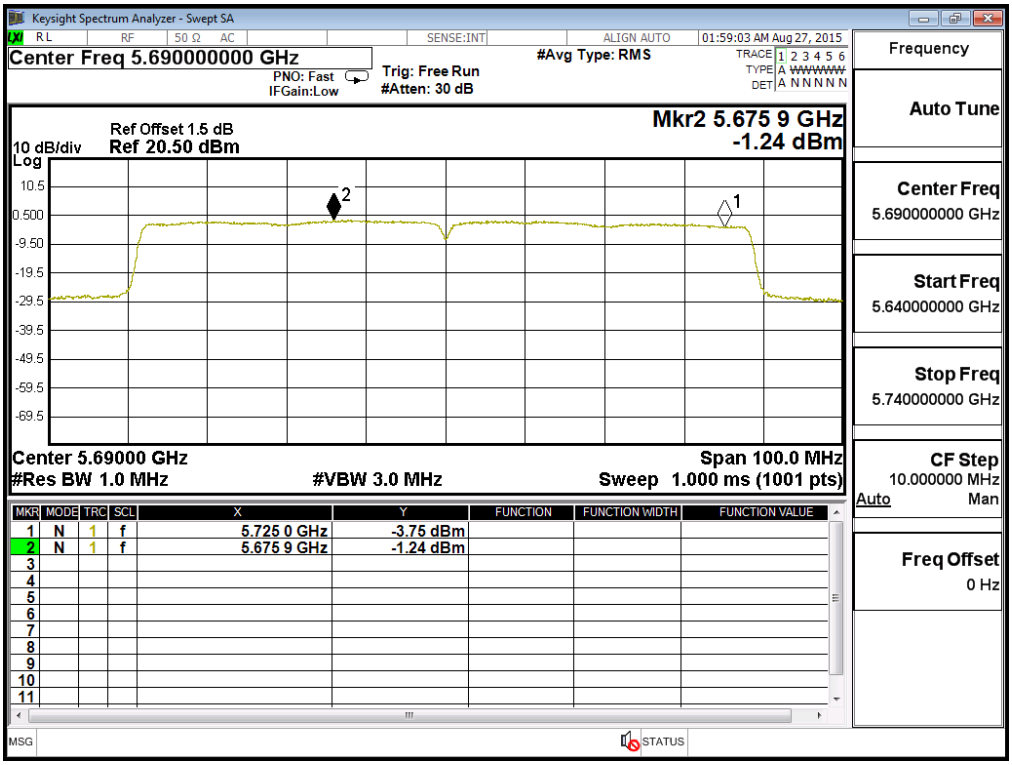
Channel 58



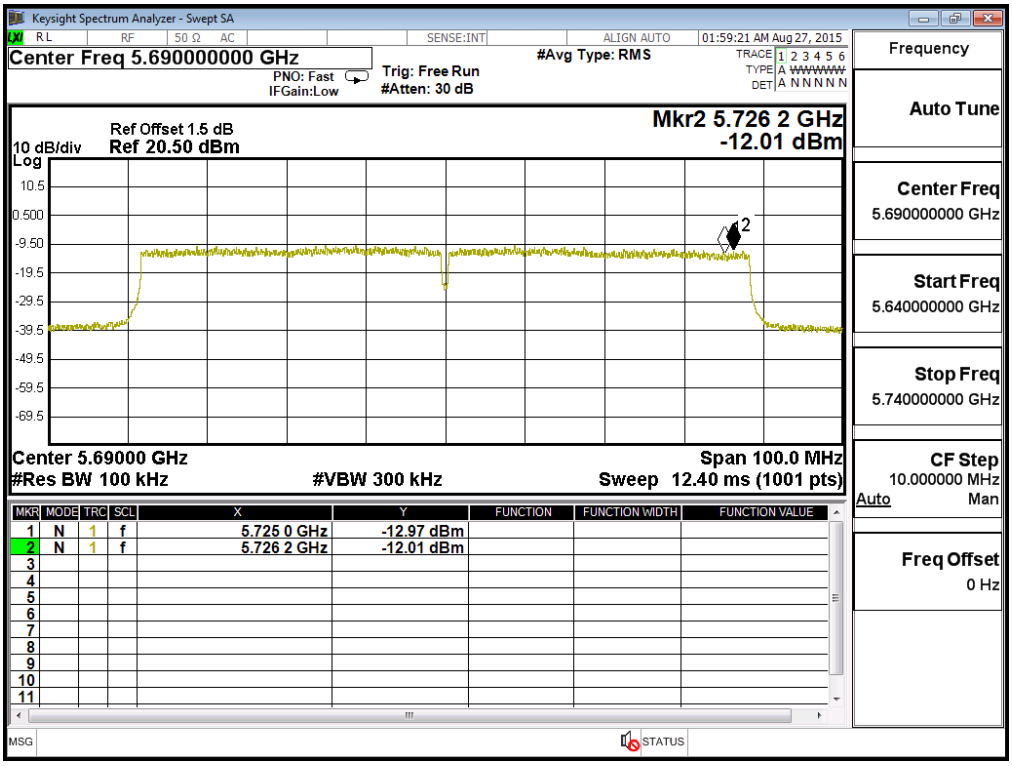
Channel 106



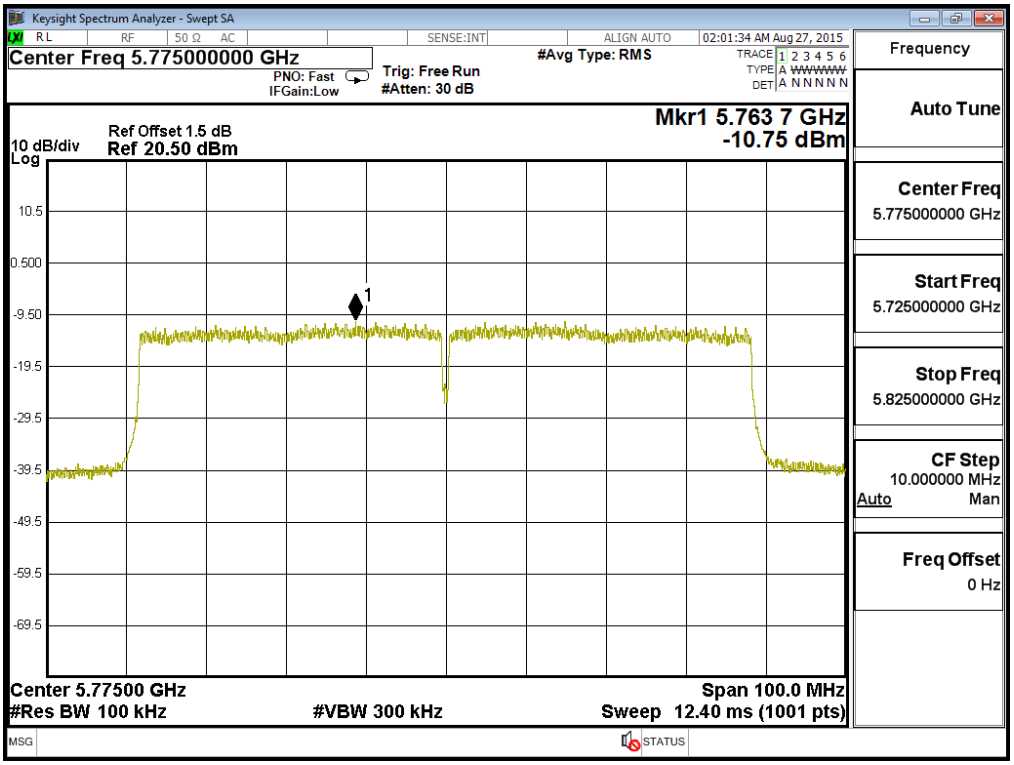
Channel 138 (Band3)



Channel 138 (Band4)



Channel 155



5. Radiated Emission

5.1. Test Equipment

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

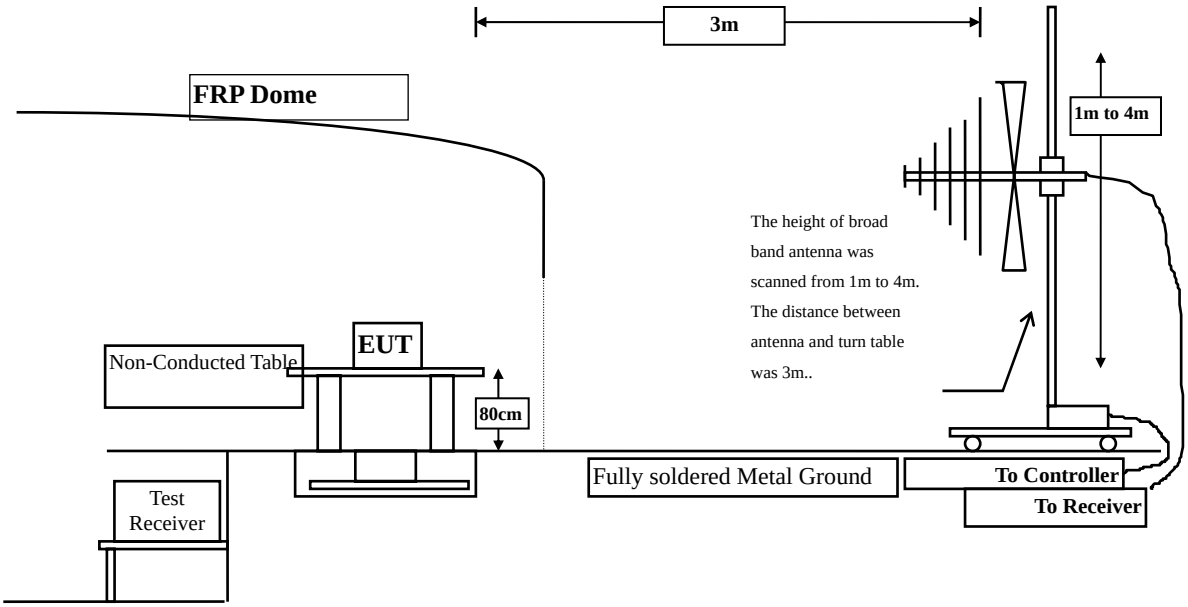
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Magnetic Loop Antenna	Teseq	HLA6121/ 37133	Sep., 2015
	X	Bilog Antenna	Schaffner Chase	CBL6112B/ 2707	Jun., 2015
	X	EMI Test Receiver	R&S	ESCS 30/838251/ 001	Jun., 2015
	X	Coaxial Cable	QTK(Arnist)	RG 214/ LC003-RG	Jun., 2015
	X	Coaxial signal switch	Arnist	MP59B/ 6200798682	Jun., 2015

Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan, 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

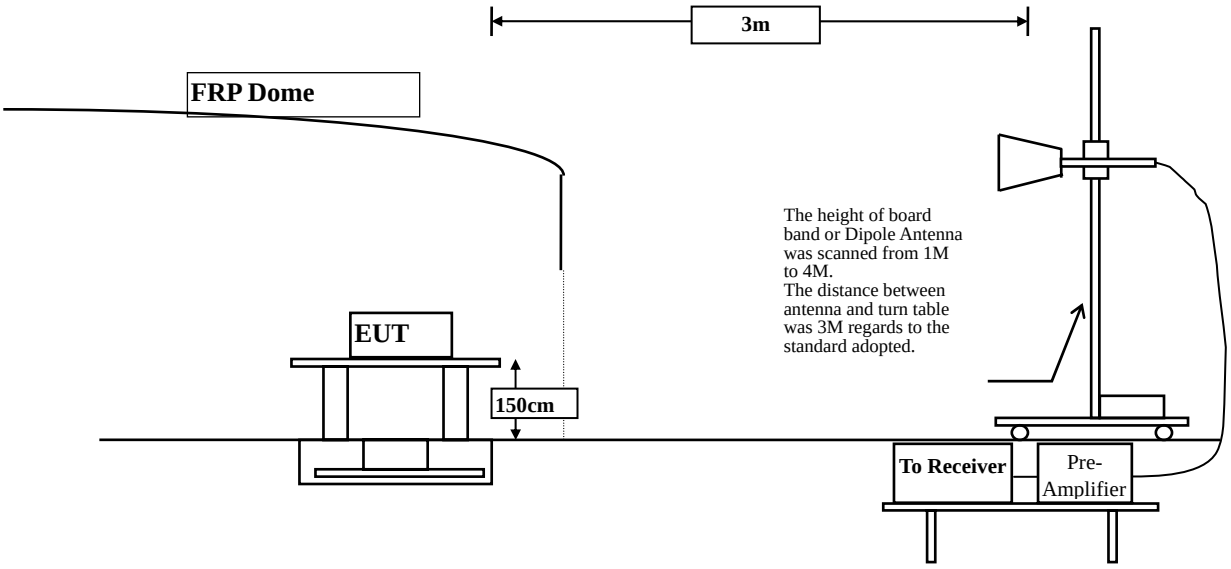
Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

5.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



5.3. 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)

5.4. 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 worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

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

5.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

5.6. Test Result of Radiated Emission

Product : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5180MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10360.000	12.930	51.840	64.770	-9.230	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10360.000	12.930	37.880	50.810	-3.190	54.000
Vertical					
Peak Detector:					
10360.000	13.724	51.460	65.184	-8.816	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10360.000	13.724	37.880	51.604	-2.396	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10440.000	13.322	51.390	64.712	-9.288	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
10440.000	13.322	36.470	49.792	-4.208	54.000
Vertical					
Peak Detector:					
10440.000	14.245	38.640	52.885	-21.115	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
10440.000	14.245	36.420	50.665	-3.335	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5240MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10480.000	13.693	51.750	65.444	-8.556	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average Detector:					
10480.000	13.693	36.730	50.424	-3.576	54.000
Vertical					
Peak Detector:					
10480.000	14.620	51.110	65.731	-8.269	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average Detector:					
10480.000	14.620	36.690	51.311	-2.689	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5260MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10520.000	14.015	51.430	65.445	-8.555	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average Detector:					
10520.000	14.015	37.250	51.265	-2.735	54.000
Vertical					
Peak Detector:					
10520.000	14.818	51.890	66.708	-7.292	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average Detector:					
10520.000	14.818	37.240	52.058	-1.942	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10600.000	11.868	39.340	51.208	-22.792	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10600.000	13.403	39.460	52.863	-21.137	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5320MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10640.000	11.844	39.220	51.064	-22.936	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10640.000	13.517	39.370	52.887	-21.113	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5500MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11000.000	12.392	39.480	51.872	-22.128	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11000.000	14.514	39.210	53.724	-20.276	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11160.000	12.201	38.790	50.991	-23.009	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11160.000	14.445	38.510	52.955	-21.045	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5700MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11400.000	13.372	39.080	52.452	-21.548	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11400.000	14.922	39.000	53.922	-20.078	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5745MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11490.000	14.326	38.250	52.575	-21.425	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11490.000	15.842	37.860	53.701	-20.299	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
11570.000	14.849	38.400	53.249	-20.751	74.000
17355.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11570.000	16.215	37.340	53.554	-20.446	74.000
17355.000	*	*	*	*	74.000
20800.000	*	*	*	*	74.000
26000.000	*	*	*	*	74.000
31200.000	*	*	*	*	74.000
36400.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5825MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	37.240	50.419	-23.581	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11650.000	14.634	37.270	51.904	-22.096	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5180MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10360.000	12.930	51.750	64.680	-9.320	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average Detector:					
10360.000	12.930	37.850	50.780	-3.220	54.000
Vertical					
Peak Detector:					
10360.000	13.724	51.600	65.324	-8.676	74.000
15540.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
Average Detector:					
10360.000	13.724	37.870	51.594	-2.406	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10440.000	13.322	50.990	64.312	-9.688	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
10440.000	13.322	36.440	49.762	-4.238	54.000
Vertical					
Peak Detector:					
10440.000	14.245	51.070	65.315	-8.685	74.000
15660.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
Average Detector:					
10440.000	14.245	36.450	50.695	-3.305	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5240MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10480.000	13.693	51.570	65.264	-8.736	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average Detector:					
10480.000	13.693	36.670	50.364	-3.636	54.000
Vertical					
Peak Detector:					
10480.000	14.620	51.070	65.691	-8.309	74.000
15720.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
Average Detector:					
10480.000	14.620	36.690	51.311	-2.689	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5260MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10520.000	14.015	51.440	65.455	-8.545	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average Detector:					
10520.000	14.015	37.210	51.225	-2.775	54.000
Vertical					
Peak Detector:					
10520.000	14.818	51.820	66.638	-7.362	74.000
15780.000	*	*	*	*	74.000
21040.000	*	*	*	*	74.000
26300.000	*	*	*	*	74.000
Average Detector:					
10520.000	14.818	37.210	52.028	-1.972	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10600.000	11.868	39.960	51.828	-22.172	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10600.000	13.403	39.190	52.593	-21.407	74.000
15900.000	*	*	*	*	74.000
21200.000	*	*	*	*	74.000
26500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5320MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10640.000	11.844	39.210	51.054	-22.946	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10640.000	13.517	39.740	53.257	-20.743	74.000
15960.000	*	*	*	*	74.000
21280.000	*	*	*	*	74.000
26600.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5500MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11000.000	12.392	39.240	51.632	-22.368	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11000.000	14.514	39.110	53.624	-20.376	74.000
16500.000	*	*	*	*	74.000
22000.000	*	*	*	*	74.000
27500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11160.000	12.201	38.650	50.851	-23.149	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11160.000	14.445	37.570	52.015	-21.985	74.000
16800.000	*	*	*	*	74.000
22400.000	*	*	*	*	74.000
28000.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5700MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11400.000	13.372	39.890	53.262	-20.738	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11400.000	14.922	38.920	53.842	-20.158	74.000
17100.000	*	*	*	*	74.000
22800.000	*	*	*	*	74.000
28500.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5745MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
11490.000	14.326	38.250	52.575	-21.425	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11490.000	15.842	37.870	53.711	-20.289	74.000
17235.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11570.000	14.849	38.570	53.419	-20.581	74.000
17355.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11570.000	16.215	37.370	53.584	-20.416	74.000
17355.000	*	*	*	*	74.000
20880.000	*	*	*	*	74.000
26100.000	*	*	*	*	74.000
31320.000	*	*	*	*	74.000
36540.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5825MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11650.000	13.179	38.300	51.479	-22.521	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11650.000	14.634	37.940	52.574	-21.426	74.000
17475.000	*	*	*	*	74.000
20960.000	*	*	*	*	74.000
26200.000	*	*	*	*	74.000
31440.000	*	*	*	*	74.000
36680.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10380.000	12.939	51.010	63.949	-10.051	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average Detector:					
10380.000	12.939	37.410	50.349	-3.651	54.000
Vertical					
Peak Detector:					
10380.000	13.796	51.100	64.896	-9.104	74.000
15570.000	*	*	*	*	74.000
20760.000	*	*	*	*	74.000
25950.000	*	*	*	*	74.000
Average Detector:					
10380.000	13.796	37.410	51.206	-2.794	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5230MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10460.000	13.508	50.970	64.478	-9.522	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average Detector:					
10460.000	13.508	36.640	50.148	-3.852	54.000
Vertical					
Peak Detector:					
10460.000	14.433	51.530	65.963	-8.037	74.000
15690.000	*	*	*	*	74.000
20920.000	*	*	*	*	74.000
26150.000	*	*	*	*	74.000
Average Detector:					
10460.000	14.433	36.640	51.073	-2.927	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10540.000	14.151	51.660	65.810	-8.190	74.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000	*	*	*	*	74.000
Average Detector:					
10540.000	14.151	38.490	52.640	-1.360	54.000
Vertical					
Peak Detector:					
10540.000	14.829	51.370	66.198	-7.802	74.000
15810.000	*	*	*	*	74.000
21080.000	*	*	*	*	74.000
26350.000	*	*	*	*	74.000
Average Detector:					
10540.000	14.829	38.550	53.378	-0.622	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5310MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
10620.000	11.862	39.560	51.422	-22.578	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
10620.000	13.449	39.530	52.979	-21.021	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5510MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11020.000	12.632	39.010	51.642	-22.358	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11020.000	14.778	38.760	53.538	-20.462	74.000
15930.000	*	*	*	*	74.000
21240.000	*	*	*	*	74.000
26550.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11100.000	12.305	38.720	51.025	-22.975	74.000
16770.000	*	*	*	*	74.000
22360.000	*	*	*	*	74.000
27950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11100.000	14.559	38.810	53.369	-20.631	74.000
16770.000	*	*	*	*	74.000
22360.000	*	*	*	*	74.000
27950.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5670MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector:					
11340.000	12.852	38.230	51.081	-22.919	74.000
17010.000	*	*	*	*	74.000
22680.000	*	*	*	*	74.000
28350.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical					
Peak Detector:					
11340.000	14.594	38.050	52.644	-21.356	74.000
17010.000	*	*	*	*	74.000
22680.000	*	*	*	*	74.000
28350.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-20BW-7.2Mbps) (5720MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11440.000	13.997	39.130	53.127	-20.873	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11440.000	15.527	38.850	54.377	-19.623	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
11440.000	15.527	25.240	40.767	-13.233	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit (802.11ac-40BW-15Mbps) (5710MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11420.000	13.675	39.110	52.784	-21.216	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11420.000	15.210	38.870	54.080	-19.920	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
11420.000	15.210	25.270	40.480	-13.520	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5210MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
10420.000	13.135	51.170	64.305	-9.695	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10420.000	13.135	36.680	49.815	-4.185	54.000
Vertical Peak Detector:					
10420.000	14.057	51.790	65.847	-8.153	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10420.000	14.057	36.530	50.587	-3.413	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5290MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
10580.000	14.423	52.270	66.693	-7.307	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10580.000	14.423	38.510	52.933	-1.067	54.000
Vertical Peak Detector:					
10580.000	14.849	52.290	67.139	-6.861	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
10580.000	14.849	38.590	53.439	-0.561	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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5530MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11060.000	12.824	38.530	51.354	-22.646	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11060.000	15.026	38.670	53.696	-20.304	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5690MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11380.000	13.200	38.600	51.800	-22.200	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11380.000	14.808	38.280	53.088	-20.912	74.000
11550.000	*	*	*	*	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*

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 : OTT BOX
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5775MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal Peak Detector:					
11550.000	14.599	38.170	52.769	-21.231	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
*	*	*	*	*	*
Vertical Peak Detector:					
11550.000	16.007	38.490	54.497	-19.503	74.000
17325.000	*	*	*	*	74.000
20720.000	*	*	*	*	74.000
25900.000	*	*	*	*	74.000
31080.000	*	*	*	*	74.000
36260.000	*	*	*	*	74.000
Average Detector:					
11550.000	16.007	24.670	40.677	-13.323	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
105.913	-6.721	30.041	23.321	-20.179	43.500
306.942	-3.194	31.087	27.894	-18.106	46.000
370.203	-1.080	29.565	28.486	-17.514	46.000
427.841	-2.637	33.663	31.026	-14.974	46.000
599.348	3.984	25.033	29.017	-16.983	46.000
752.580	3.850	27.002	30.851	-15.149	46.000
Vertical					
Peak Detector					
306.942	-6.817	29.625	22.809	-23.191	46.000
381.449	-1.656	26.728	25.072	-20.928	46.000
520.623	-0.316	23.744	23.428	-22.572	46.000
613.406	-1.666	26.043	24.377	-21.623	46.000
756.797	3.066	26.171	29.237	-16.763	46.000
815.841	3.224	24.390	27.614	-18.386	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5300MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
103.720	-8.230	40.582	32.351	-11.149	43.500
216.240	-10.271	35.911	25.640	-20.360	46.000
460.680	4.030	27.268	31.298	-14.702	46.000
610.060	3.657	24.849	28.506	-17.494	46.000
792.420	6.391	31.426	37.817	-8.183	46.000
961.200	6.810	23.130	29.940	-24.060	54.000
Vertical					
Peak Detector					
78.500	-5.604	38.944	33.340	-6.660	40.000
179.380	-0.824	26.253	25.429	-18.071	43.500
379.200	0.881	24.763	25.644	-20.356	46.000
538.280	1.996	23.870	25.866	-20.134	46.000
687.660	2.292	23.133	25.425	-20.575	46.000
842.860	2.378	25.828	28.206	-17.794	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) (5580MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
59.100	-11.901	37.382	25.481	-14.519	40.000
105.660	-7.676	41.005	33.328	-10.172	43.500
305.480	-3.836	32.604	28.768	-17.232	46.000
462.620	3.589	28.090	31.679	-14.321	46.000
794.360	6.387	32.136	38.523	-7.477	46.000
887.480	6.623	25.213	31.836	-14.164	46.000
Vertical					
Peak Detector					
78.500	-5.604	40.500	34.896	-5.104	40.000
111.480	-3.439	34.966	31.528	-11.972	43.500
365.620	0.282	25.834	26.116	-19.884	46.000
610.060	2.087	27.407	29.494	-16.506	46.000
790.480	2.693	26.862	29.555	-16.445	46.000
943.740	3.383	23.423	26.806	-19.194	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
278.826	-5.643	29.435	23.792	-22.208	46.000
378.638	-1.038	27.898	26.860	-19.140	46.000
425.029	-3.131	30.542	27.411	-18.589	46.000
572.638	2.411	26.805	29.216	-16.784	46.000
745.551	3.310	27.651	30.962	-15.038	46.000
791.942	5.212	27.136	32.348	-13.652	46.000
Vertical					
Peak Detector					
150.899	-6.221	31.141	24.920	-18.580	43.500
315.377	-6.886	29.648	22.762	-23.238	46.000
378.638	-1.584	27.484	25.900	-20.100	46.000
506.565	-0.582	35.613	35.030	-10.970	46.000
689.319	2.525	24.735	27.260	-18.740	46.000
791.942	2.897	29.761	32.658	-13.342	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5220MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
268.986	-4.943	28.244	23.301	-22.699	46.000
368.797	-1.137	26.183	25.045	-20.955	46.000
426.435	-2.968	30.524	27.557	-18.443	46.000
544.522	3.597	25.404	29.001	-16.999	46.000
575.449	2.962	29.533	32.495	-13.505	46.000
791.942	5.212	25.089	30.301	-15.699	46.000
Vertical					
Peak Detector					
105.913	-0.261	27.457	27.196	-16.304	43.500
389.884	-3.070	27.504	24.433	-21.567	46.000
540.304	0.105	24.083	24.188	-21.812	46.000
603.565	-1.937	23.656	21.719	-24.281	46.000
692.130	2.343	22.955	25.298	-20.702	46.000
791.942	2.897	29.540	32.437	-13.563	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5300MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
105.660	-7.676	40.619	32.942	-10.558	43.500
204.600	-10.493	36.971	26.478	-17.022	43.500
305.480	-3.836	31.198	27.362	-18.638	46.000
480.080	1.870	30.387	32.257	-13.743	46.000
792.420	6.391	31.910	38.301	-7.699	46.000
963.140	7.021	24.314	31.335	-22.665	54.000
Vertical					
Peak Detector					
78.500	-5.604	40.098	34.494	-5.506	40.000
177.440	-1.248	26.243	24.995	-18.505	43.500
373.380	0.043	26.804	26.847	-19.153	46.000
606.180	2.246	26.410	28.656	-17.344	46.000
792.420	2.681	27.546	30.227	-15.773	46.000
932.100	3.430	22.792	26.222	-19.778	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5580MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
103.720	-8.230	40.593	32.362	-11.138	43.500
241.460	-6.590	31.382	24.792	-21.208	46.000
462.620	3.589	28.887	32.476	-13.524	46.000
544.100	4.373	23.850	28.223	-17.777	46.000
792.420	6.391	31.665	38.056	-7.944	46.000
914.640	6.410	22.779	29.189	-16.811	46.000
Vertical					
Peak Detector					
78.500	-5.604	39.426	33.822	-6.178	40.000
179.380	-0.824	26.630	25.806	-17.694	43.500
460.680	-1.930	25.777	23.847	-22.153	46.000
608.120	2.175	25.004	27.179	-18.821	46.000
792.420	2.681	26.765	29.446	-16.554	46.000
945.680	3.300	22.697	25.997	-20.003	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) (5785MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
187.140	-11.217	41.118	29.901	-13.599	43.500
272.500	-6.018	40.083	34.065	-11.935	46.000
340.400	-3.237	38.517	35.280	-10.720	46.000
594.540	3.555	37.506	41.061	-4.939	46.000
743.920	3.898	37.392	41.290	-4.710	46.000
852.560	7.106	29.935	37.041	-8.959	46.000
Vertical					
Peak Detector					
258.920	-4.900	43.353	38.453	-7.547	46.000
392.780	-1.210	40.858	39.648	-6.352	46.000
509.180	0.804	34.051	34.855	-11.145	46.000
664.380	-0.978	35.763	34.785	-11.215	46.000
792.420	2.681	30.915	33.596	-12.404	46.000
904.940	0.989	31.402	32.391	-13.609	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5190MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
292.884	-4.019	28.638	24.619	-21.381	46.000
380.043	-0.966	26.910	25.944	-20.056	46.000
426.435	-2.968	30.263	27.296	-18.704	46.000
572.638	2.411	26.497	28.908	-17.092	46.000
761.014	4.351	25.920	30.271	-15.729	46.000
791.942	5.212	26.876	32.088	-13.912	46.000
Vertical					
Peak Detector					
98.884	-0.706	30.154	29.448	-14.052	43.500
371.609	-2.706	27.527	24.822	-21.178	46.000
507.971	-0.350	24.526	24.175	-21.825	46.000
683.696	1.948	23.651	25.599	-20.401	46.000
791.942	2.897	29.221	32.118	-13.882	46.000
942.362	6.584	24.072	30.656	-15.344	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5270MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
305.536	-2.939	30.854	27.916	-18.084	46.000
381.449	-1.016	29.551	28.535	-17.465	46.000
423.623	-3.172	32.360	29.188	-16.812	46.000
572.638	2.411	27.423	29.834	-16.166	46.000
745.551	3.310	26.489	29.800	-16.200	46.000
791.942	5.212	26.084	31.296	-14.704	46.000
Vertical					
Peak Detector					
104.507	-0.201	26.143	25.942	-17.558	43.500
365.986	-2.246	25.755	23.509	-22.491	46.000
529.058	-0.475	24.323	23.848	-22.152	46.000
690.725	2.504	24.172	26.676	-19.324	46.000
791.942	2.897	27.748	30.645	-15.355	46.000
928.304	6.219	23.009	29.227	-16.773	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) (5550MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
103.720	-8.230	40.097	31.866	-11.634	43.500
251.160	-5.988	32.826	26.838	-19.162	46.000
460.680	4.030	27.702	31.732	-14.268	46.000
553.800	3.147	29.169	32.316	-13.684	46.000
792.420	6.391	33.838	40.229	-5.771	46.000
951.500	6.993	22.367	29.360	-16.640	46.000
Vertical					
Peak Detector					
78.500	-5.604	39.546	33.942	-6.058	40.000
179.380	-0.824	27.048	26.224	-17.276	43.500
396.660	-2.039	27.668	25.629	-20.371	46.000
613.940	1.782	26.454	28.236	-17.764	46.000
807.940	3.361	23.628	26.989	-19.011	46.000
918.520	1.958	22.512	24.470	-21.530	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-20BW-7.2Mbps) (5720MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
103.720	-8.230	40.077	31.846	-11.654	43.500
241.460	-6.590	31.199	24.609	-21.391	46.000
396.660	0.771	31.291	32.062	-13.938	46.000
480.080	1.870	30.152	32.022	-13.978	46.000
792.420	6.391	32.697	39.088	-6.912	46.000
881.660	6.789	24.623	31.412	-14.588	46.000
Vertical					
Peak Detector					
78.500	-5.604	38.752	33.148	-6.852	40.000
179.380	-0.824	27.493	26.669	-16.831	43.500
383.080	0.195	25.770	25.965	-20.035	46.000
485.900	-2.324	25.956	23.632	-22.368	46.000
604.240	2.199	25.021	27.221	-18.779	46.000
792.420	2.681	37.953	40.634	-5.366	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit (802.11ac-40BW-15Mbps) (5710MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
101.780	-9.100	38.426	29.325	-14.175	43.500
206.540	-10.529	34.222	23.693	-19.807	43.500
412.180	-0.171	24.722	24.551	-21.449	46.000
606.180	4.196	24.999	29.195	-16.805	46.000
792.420	6.391	33.218	39.609	-6.391	46.000
930.160	7.530	22.197	29.727	-16.273	46.000
Vertical					
Peak Detector					
105.660	-4.576	35.889	31.312	-12.188	43.500
258.920	-4.900	25.807	20.907	-25.093	46.000
460.680	-1.930	25.951	24.021	-21.979	46.000
606.180	2.246	25.978	28.224	-17.776	46.000
794.360	2.657	29.149	31.806	-14.194	46.000
926.280	3.342	22.208	25.550	-20.450	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5210MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
371.609	-1.104	28.818	27.714	-18.286	46.000
426.435	-2.968	30.169	27.202	-18.798	46.000
552.957	2.593	29.875	32.468	-13.532	46.000
607.783	4.433	24.431	28.864	-17.136	46.000
759.609	4.370	26.296	30.666	-15.334	46.000
822.870	6.077	24.693	30.771	-15.229	46.000
Vertical					
Peak Detector					
105.913	-0.261	27.239	26.978	-16.522	43.500
343.493	-3.321	26.731	23.410	-22.590	46.000
541.710	-0.172	24.009	23.837	-22.163	46.000
690.725	2.504	24.349	26.853	-19.147	46.000
791.942	2.897	28.868	31.765	-14.235	46.000
921.275	5.525	24.011	29.536	-16.464	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5290MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
305.536	-2.939	28.590	25.652	-20.348	46.000
373.014	-1.153	28.686	27.533	-18.467	46.000
429.246	-2.319	33.605	31.286	-14.714	46.000
572.638	2.411	27.136	29.547	-16.453	46.000
745.551	3.310	25.875	29.186	-16.814	46.000
829.899	6.321	23.988	30.309	-15.691	46.000
Vertical					
Peak Detector					
108.725	-0.372	25.513	25.141	-18.359	43.500
371.609	-2.706	27.524	24.819	-21.181	46.000
509.377	-0.143	24.340	24.197	-21.803	46.000
689.319	2.525	23.026	25.551	-20.449	46.000
791.942	2.897	29.938	32.835	-13.165	46.000
932.522	6.075	23.861	29.935	-16.065	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5530MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
105.660	-7.676	40.434	32.757	-10.743	43.500
235.640	-8.490	34.667	26.177	-19.823	46.000
398.600	0.879	29.982	30.861	-15.139	46.000
604.240	4.289	25.493	29.783	-16.217	46.000
792.420	6.391	33.787	40.178	-5.822	46.000
968.960	7.356	22.723	30.079	-23.921	54.000
Vertical					
Peak Detector					
84.320	-4.204	36.766	32.562	-7.438	40.000
179.380	-0.824	28.356	27.532	-15.968	43.500
377.260	0.647	25.821	26.468	-19.532	46.000
612.000	1.943	26.261	28.203	-17.797	46.000
794.360	2.657	28.847	31.504	-14.496	46.000
928.220	3.640	22.383	26.023	-19.977	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 : OTT BOX
Test Item : General Radiated Emission
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) (5775MHz)

Frequency MHz	Correct Factor dB	Reading Level dBμV	Measurement Level dBμV/m	Margin dB	Limit dBμV/m
Horizontal					
Peak Detector					
121.180	-7.289	37.972	30.683	-12.817	43.500
237.580	-7.697	47.730	40.033	-5.967	46.000
375.320	0.918	42.439	43.357	-2.643	46.000
431.580	0.757	40.328	41.085	-4.915	46.000
664.380	1.882	33.861	35.743	-10.257	46.000
904.940	6.009	28.863	34.872	-11.128	46.000
Vertical					
Peak Detector					
88.200	-4.076	39.169	35.093	-8.407	43.500
276.380	-6.006	41.665	35.659	-10.341	46.000
429.640	-8.060	43.427	35.366	-10.634	46.000
600.360	1.302	33.538	34.840	-11.160	46.000
753.620	2.730	33.658	36.388	-9.612	46.000
899.120	1.647	29.068	30.715	-15.285	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 Equipment

RF Conducted Measurement

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

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

Note:

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

RF Radiated Measurement:

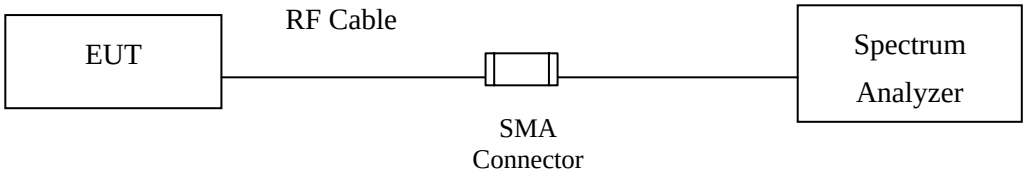
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒CB # 8	X	Spectrum Analyzer	R&S	FSP40/ 100339	Oct., 2014
	X	Horn Antenna	ETS-Lindgren	3117/ 35205	Mar., 2015
	X	Horn Antenna	Schwarzbeck	BBHA9170/209	Jan., 2015
	X	Horn Antenna	TRC	AH-0801/95051	Aug., 2015
	X	Pre-Amplifier	EMCI	EMC012630SE/980210	Jan., 2015
	X	Pre-Amplifier	MITEQ	JS41-001040000-58-5P/153945	Jul., 2015
	X	Pre-Amplifier	NARDA	DBL-1840N506/013	Jul., 2015

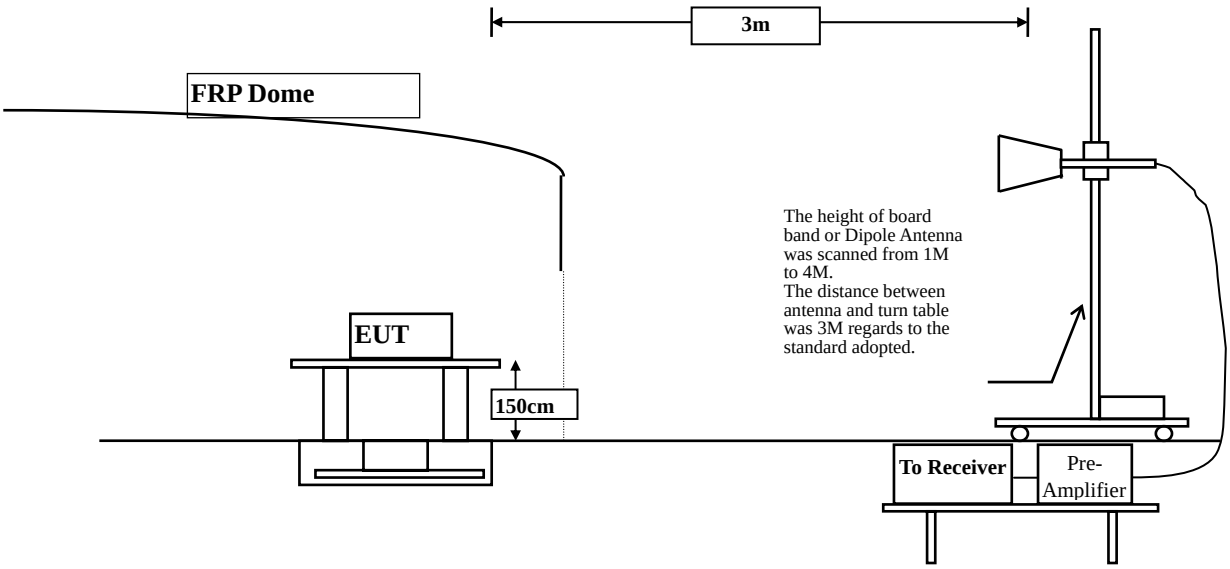
Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:



6.3. 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.

6.4. 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.

6.5. Uncertainty

± 3.8 dB below 1GHz

± 3.9 dB above 1GHz

6.6. Test Result of Band Edge

Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36 (5180MHz)

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)	5148.261	3.347	57.925	61.272	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	56.330	59.670	74.00	54.00	Pass
36 (Peak)	5175.797	3.249	95.235	98.484	--	--	--
36 (Average)	5150.000	3.340	39.065	42.405	74.00	54.00	Pass
36 (Average)	5186.522	3.211	83.983	87.194	--	--	--

Figure Channel 36: Horizontal (Peak)

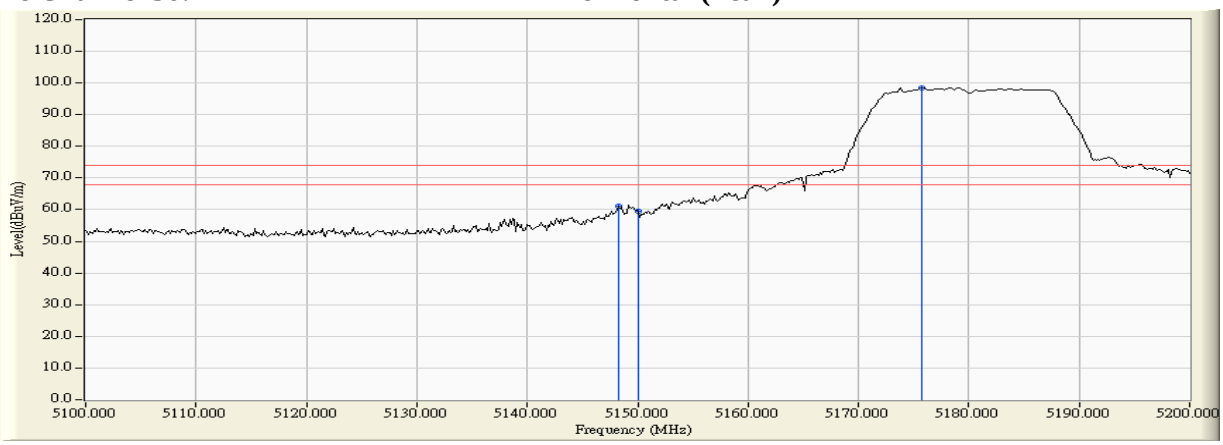
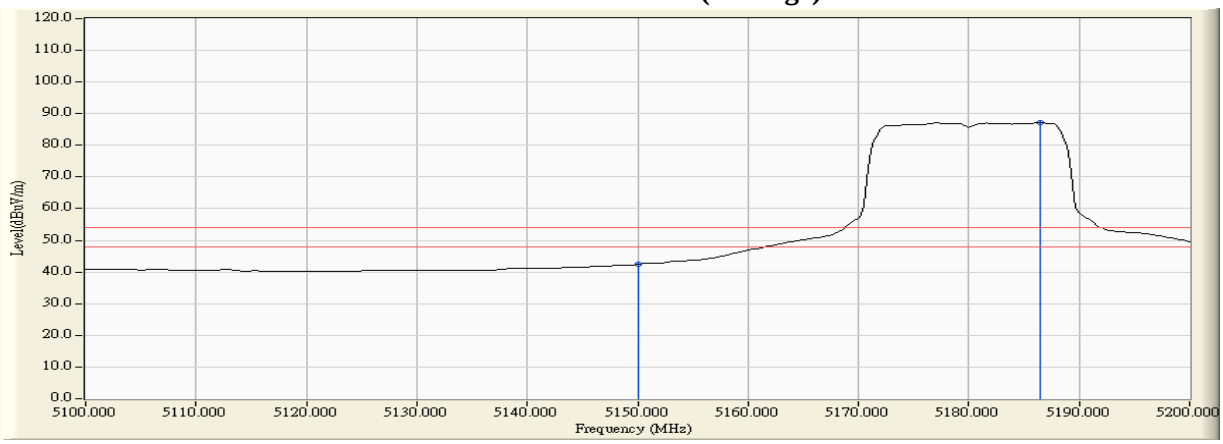


Figure Channel 36: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 36 (5180MHz)

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)	5148.261	5.255	54.238	59.493	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	53.286	58.546	74.00	54.00	Pass
36 (Peak)	5175.797	5.331	88.886	94.217	--	--	--
36 (Average)	5150.000	5.260	37.641	42.901	74.00	54.00	Pass
36 (Average)	5186.667	5.360	77.543	82.903	--	--	--

Figure Channel 36: Vertical (Peak)

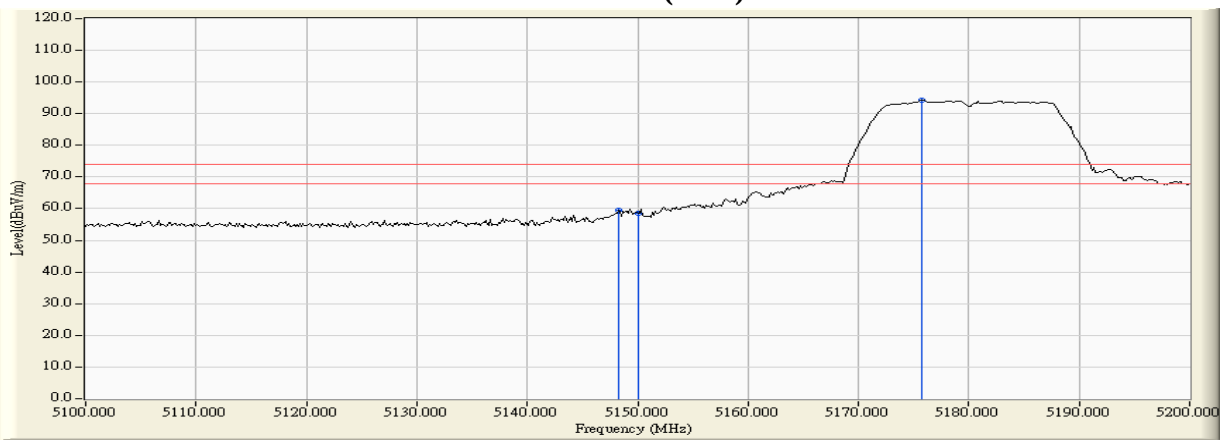
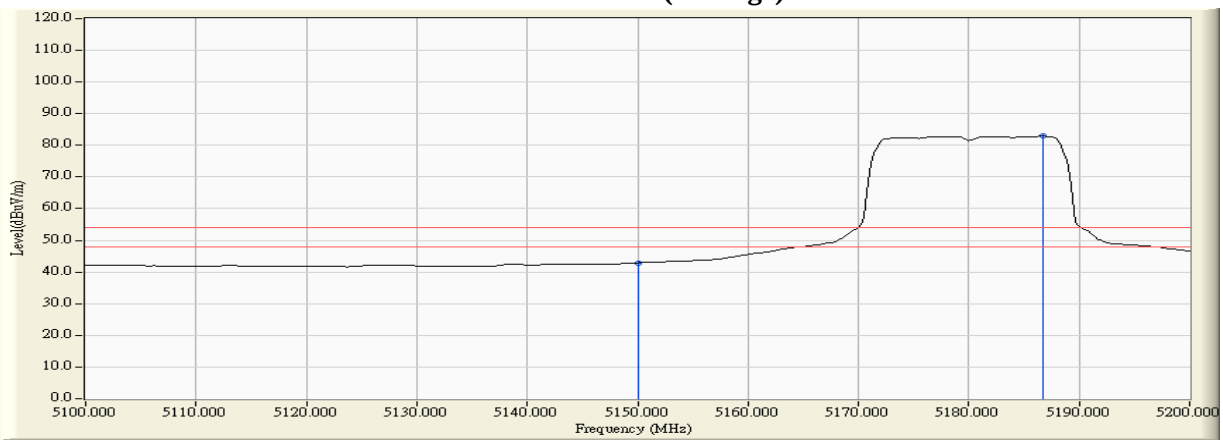


Figure Channel 36: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 64 (5320MHz)

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)	5322.600	3.637	99.205	102.843	--	--	--
64 (Peak)	5350.000	3.575	54.478	58.053	74.00	54.00	Pass
64 (Peak)	5350.600	3.573	54.791	58.364	74.00	54.00	Pass
64 (Average)	5322.000	3.639	88.040	91.679	--	--	--
64 (Average)	5350.000	3.575	37.648	41.223	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

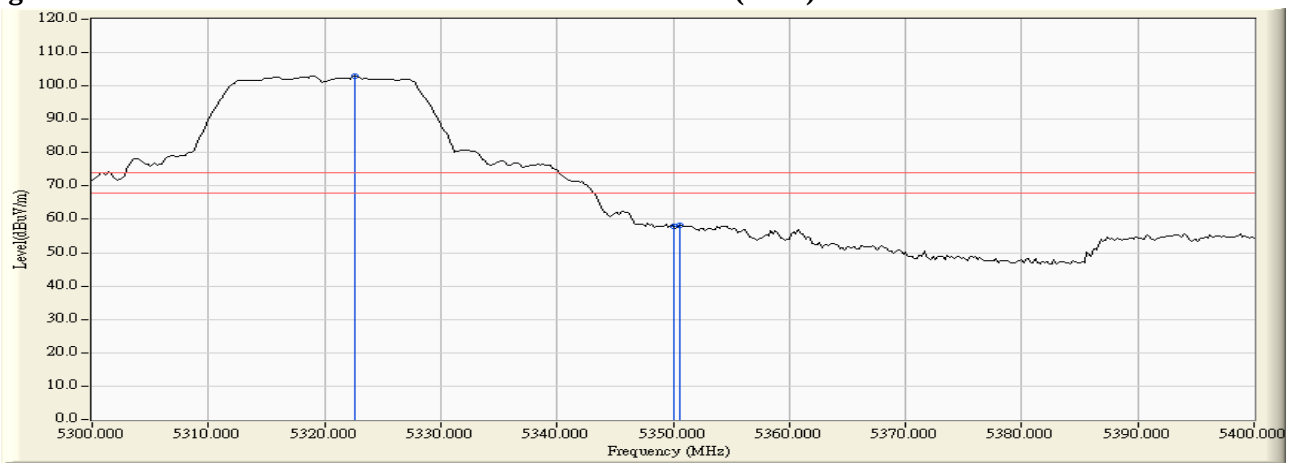
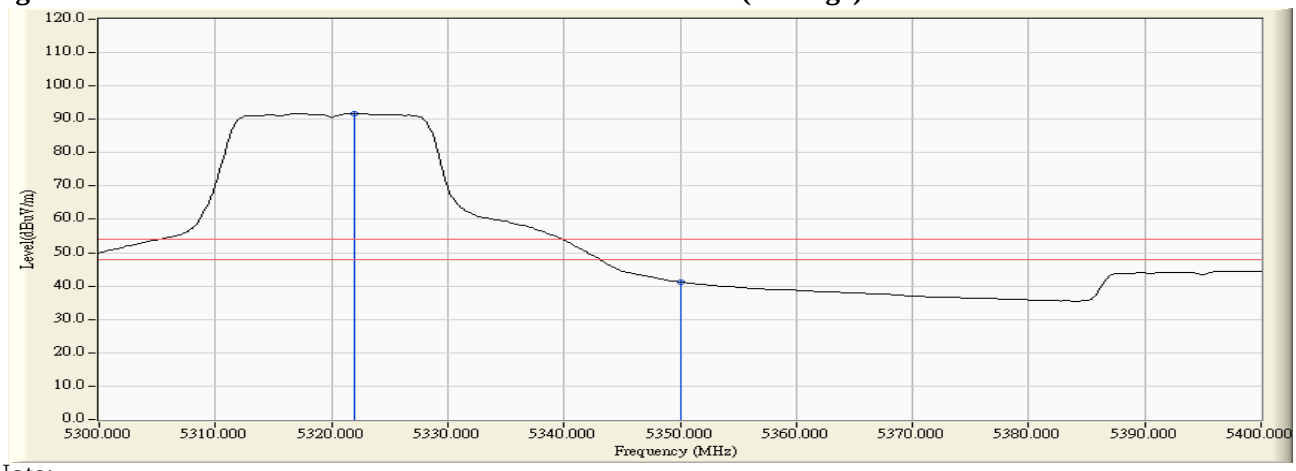


Figure Channel 64: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 64 (5320MHz)

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)	5315.800	3.883	96.838	100.721	--	--	--
64 (Peak)	5350.000	3.900	52.373	56.273	74.00	54.00	Pass
64 (Peak)	5354.800	3.886	53.518	57.404	74.00	54.00	Pass
64 (Average)	5317.400	3.885	85.606	89.491	--	--	--
64 (Average)	5350.000	3.900	35.812	39.712	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

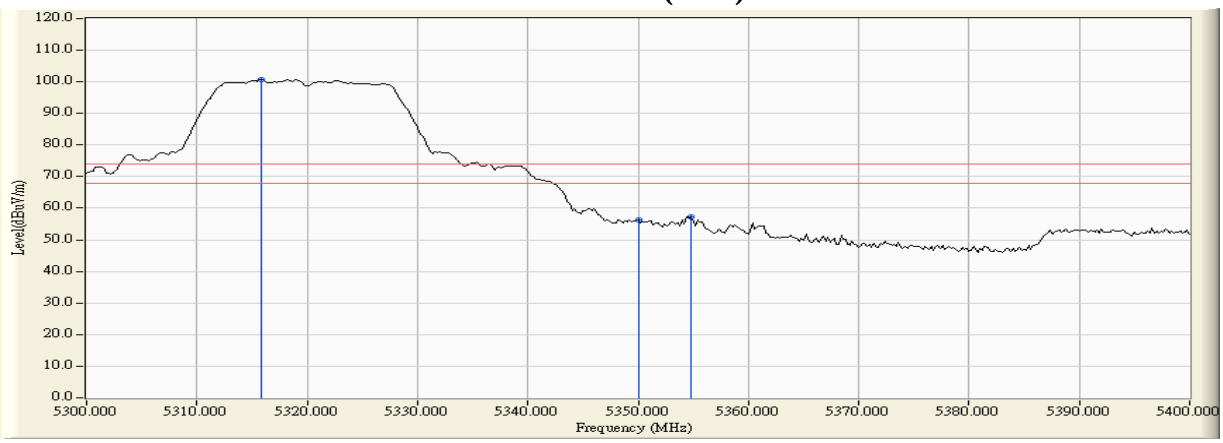
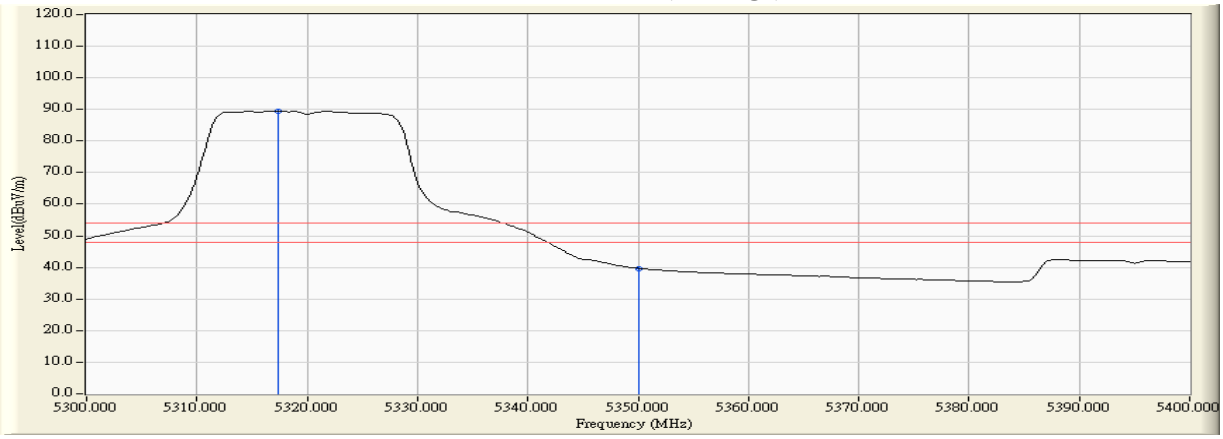


Figure Channel 64: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 100 (5500MHz)

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)	5431.400	3.436	54.099	57.535	74.00	54.00	Pass
100 (Peak)	5460.000	3.775	52.472	56.247	74.00	54.00	Pass
100 (Peak)	5498.400	4.457	98.830	103.287	--	--	--
100 (Average)	5422.600	3.367	42.171	45.538	74.00	54.00	Pass
100 (Average)	5460.000	3.775	36.667	40.442	74.00	54.00	Pass
100 (Average)	5497.200	4.440	87.461	91.902	--	--	--

Figure Channel 100: Horizontal (Peak)

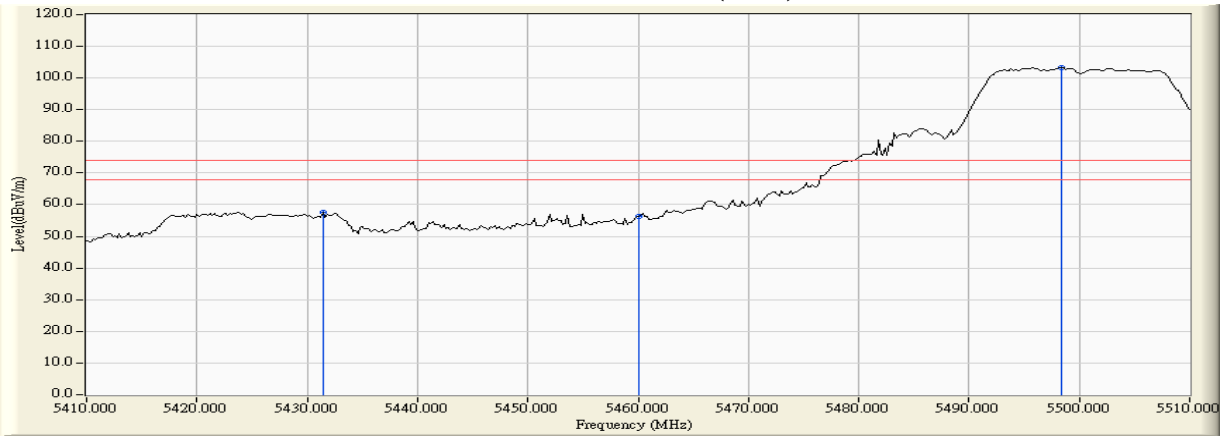
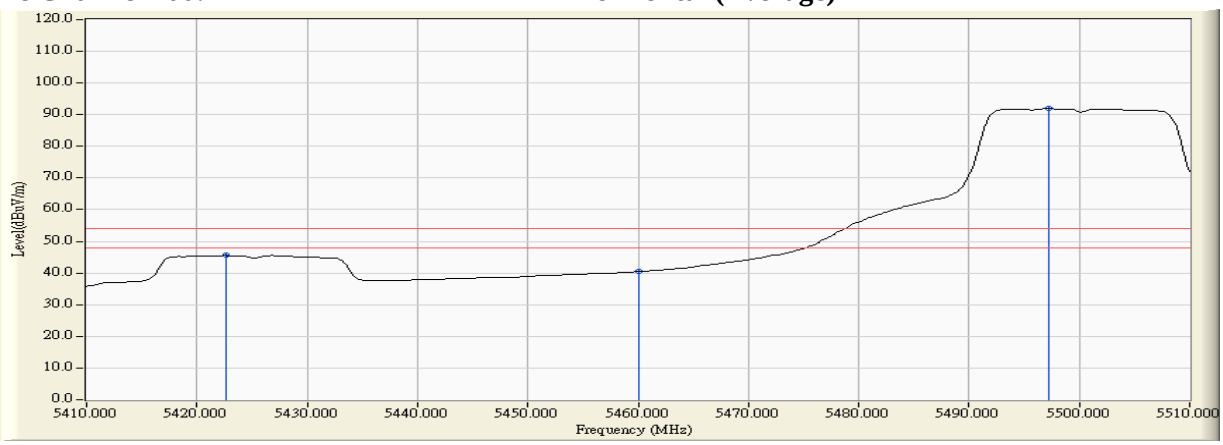


Figure Channel 100: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 100 (5500MHz)

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)	5460.000	3.934	50.765	54.700	74.00	54.00	Pass
100 (Peak)	5498.400	4.443	95.372	99.815	--	--	--
100 (Average)	5427.000	3.727	38.048	41.775	74.00	54.00	Pass
100 (Average)	5460.000	3.934	35.423	39.358	74.00	54.00	Pass
100 (Average)	5501.800	4.478	84.222	88.700	--	--	--

Figure Channel 100: Vertical (Peak)

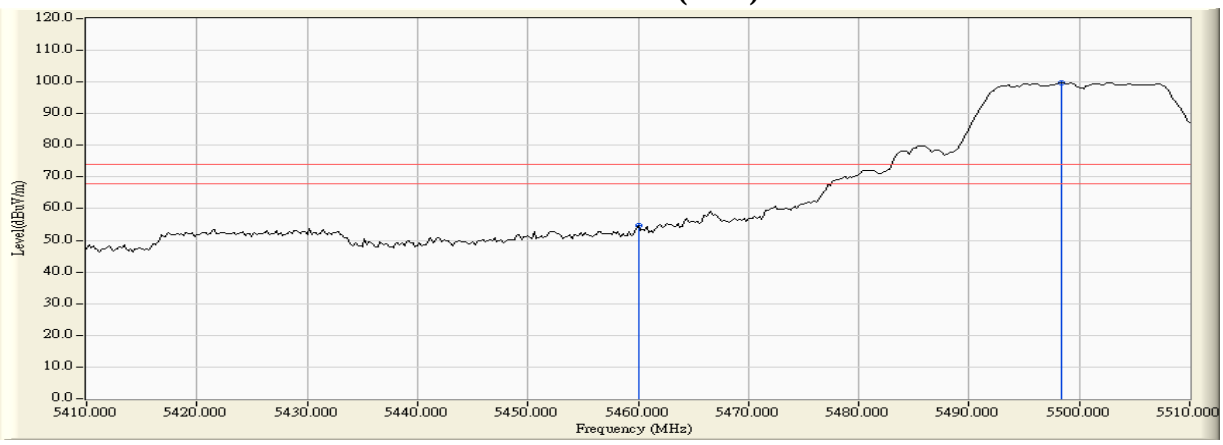
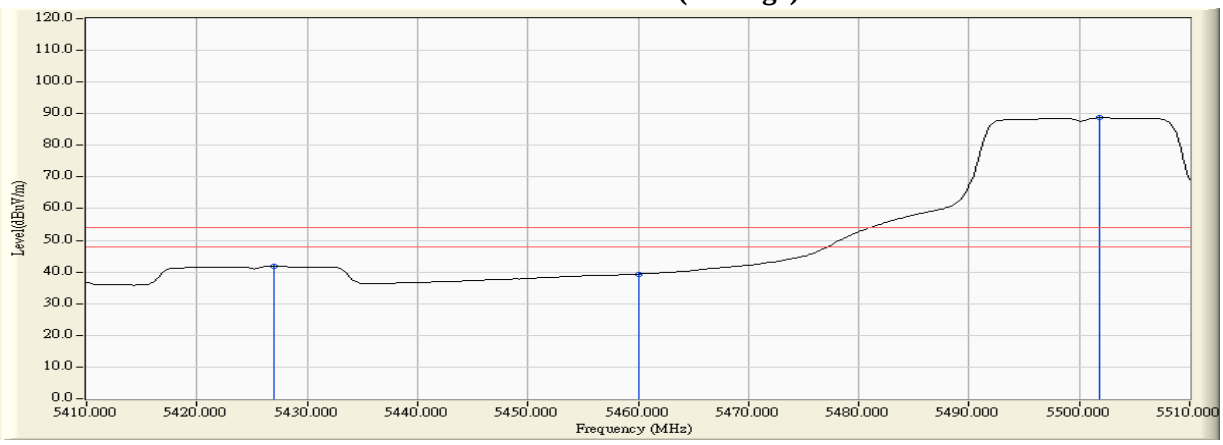


Figure Channel 100: Vertical (Average)



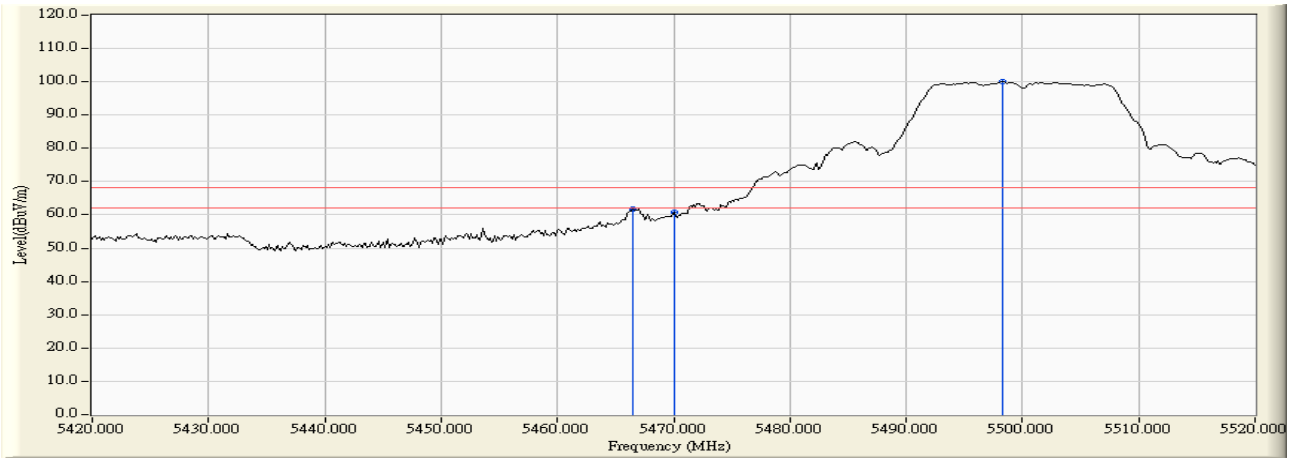
Note:

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.

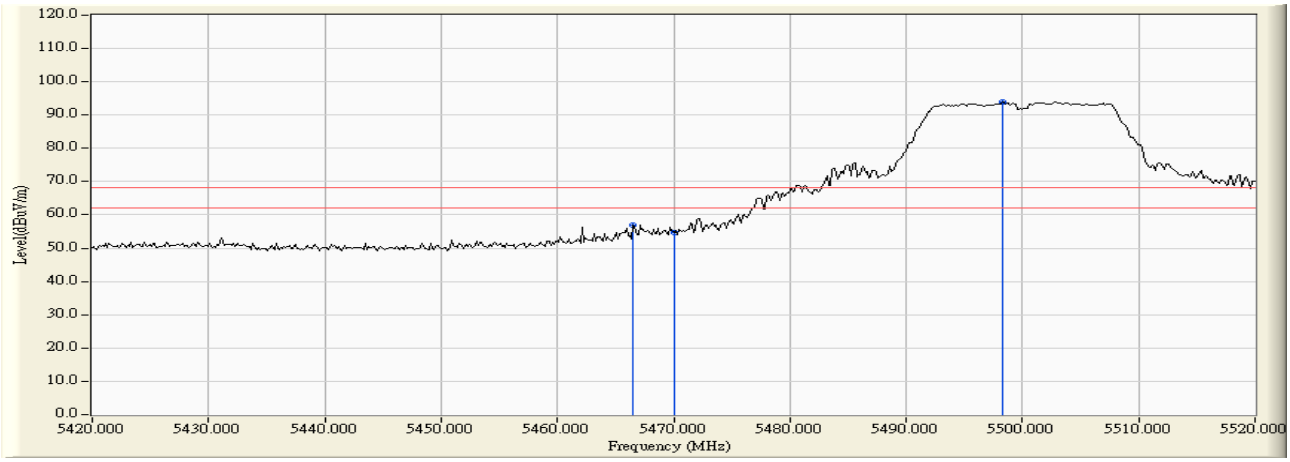
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 100

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5466.522	4.442	57.197	61.638	-6.582	68.220	Pass
Horizontal	5470.000	4.488	56.218	60.706	-7.514	68.220	Pass
Horizontal	5498.261	4.802	95.343	100.145	31.925	68.220	Pass



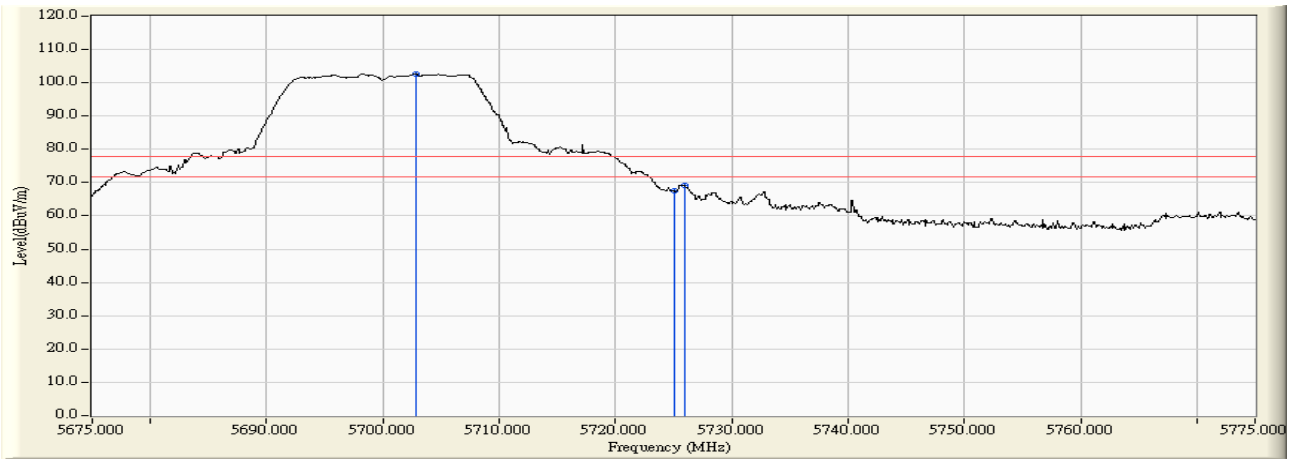
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5466.522	6.087	50.873	56.960	-11.260	68.220	Pass
Vertical	5470.000	6.112	48.494	54.605	-13.615	68.220	Pass
Vertical	5498.261	6.269	87.735	94.005	25.785	68.220	Pass



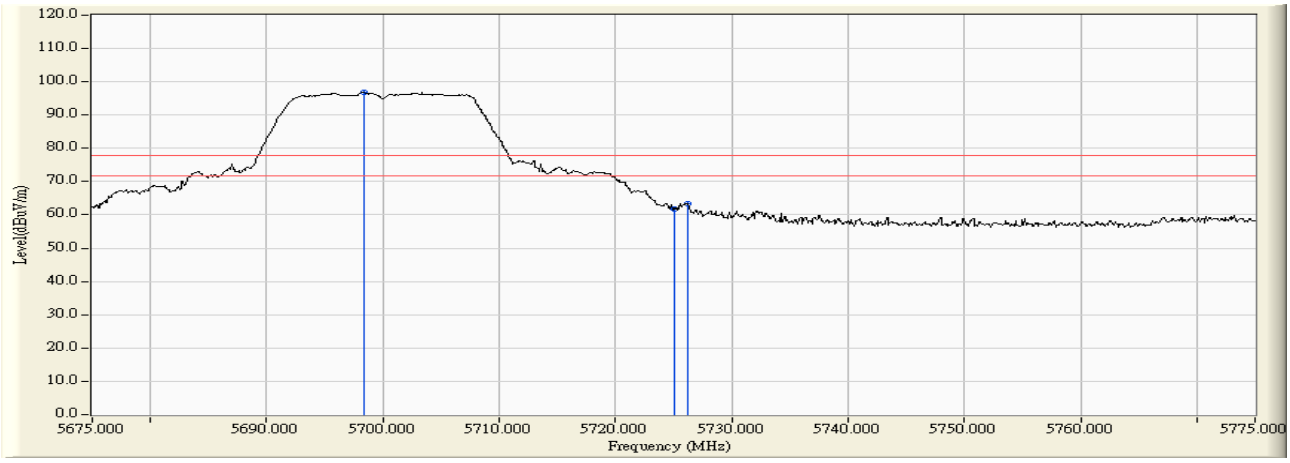
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps) -Channel 140

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5702.800	4.634	97.959	102.593	24.833	77.760	Pass
Horizontal	5725.000	4.654	62.806	67.460	-10.300	77.760	Pass
Horizontal	5725.900	4.655	64.639	69.293	-8.467	77.760	Pass



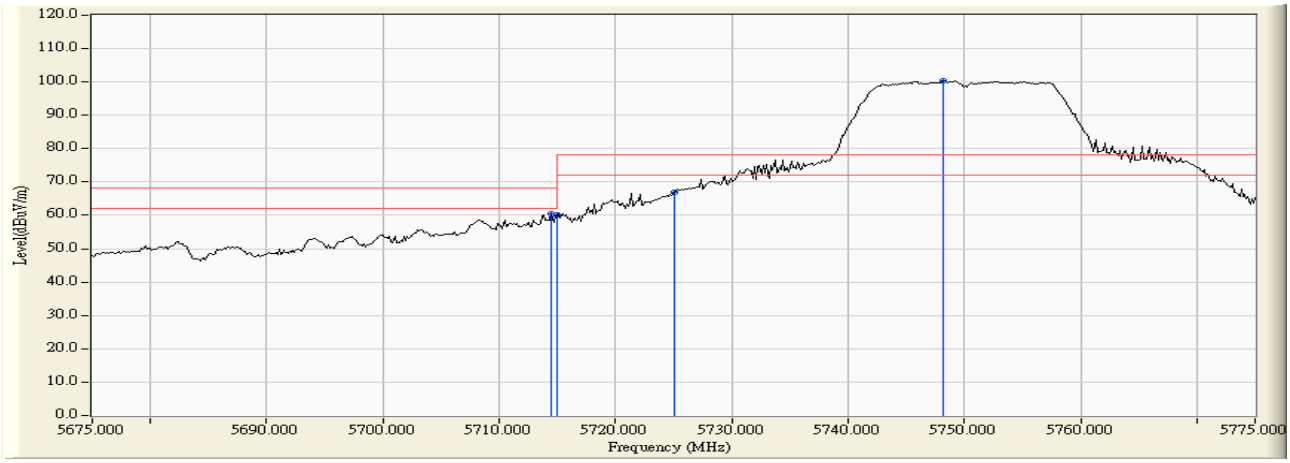
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5698.400	5.981	90.864	96.844	19.084	77.760	Pass
Vertical	5725.000	5.992	55.889	61.882	-15.878	77.760	Pass
Vertical	5726.200	5.992	57.263	63.255	-14.505	77.760	Pass



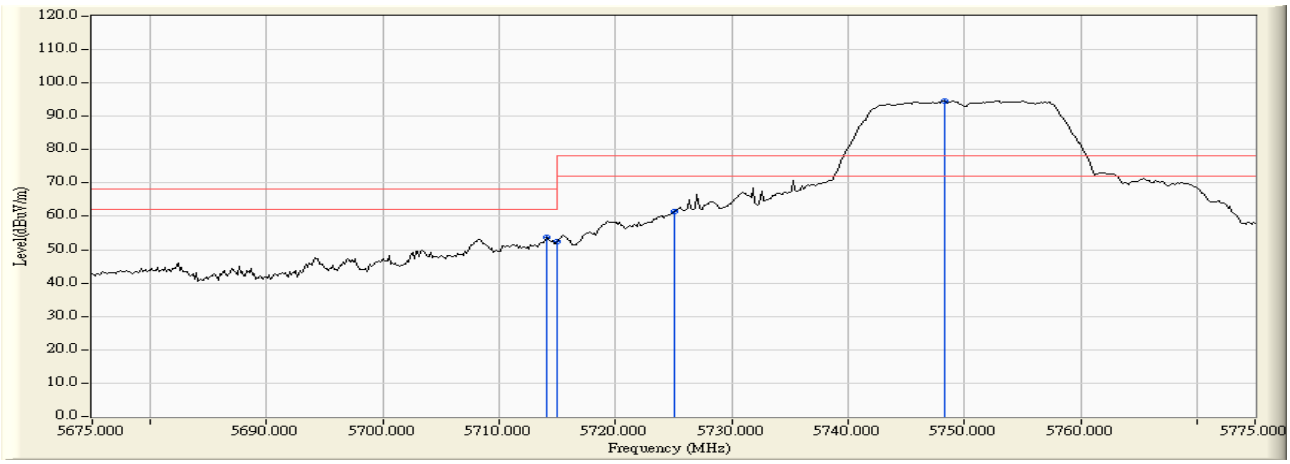
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 149

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5714.420	4.651	55.916	60.568	-7.652	68.220	Pass
Horizontal	5715.000	4.652	55.417	60.069	-8.151	68.220	Pass
Horizontal	5725.000	4.654	62.156	66.810	-11.410	78.220	Pass
Horizontal	5748.188	4.657	95.649	100.306	22.086	78.220	Pass



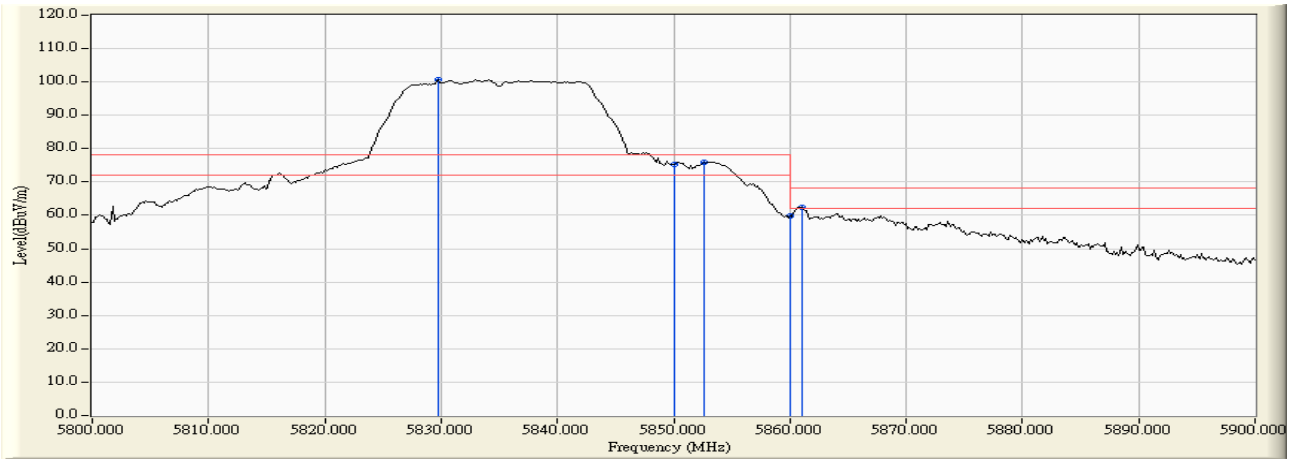
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5714.130	5.994	47.627	53.621	-14.599	68.220	Pass
Vertical	5715.000	5.994	46.562	52.556	-15.664	68.220	Pass
Vertical	5725.000	5.992	55.568	61.561	-16.659	78.220	Pass
Vertical	5748.333	5.988	88.657	94.645	16.425	78.220	Pass



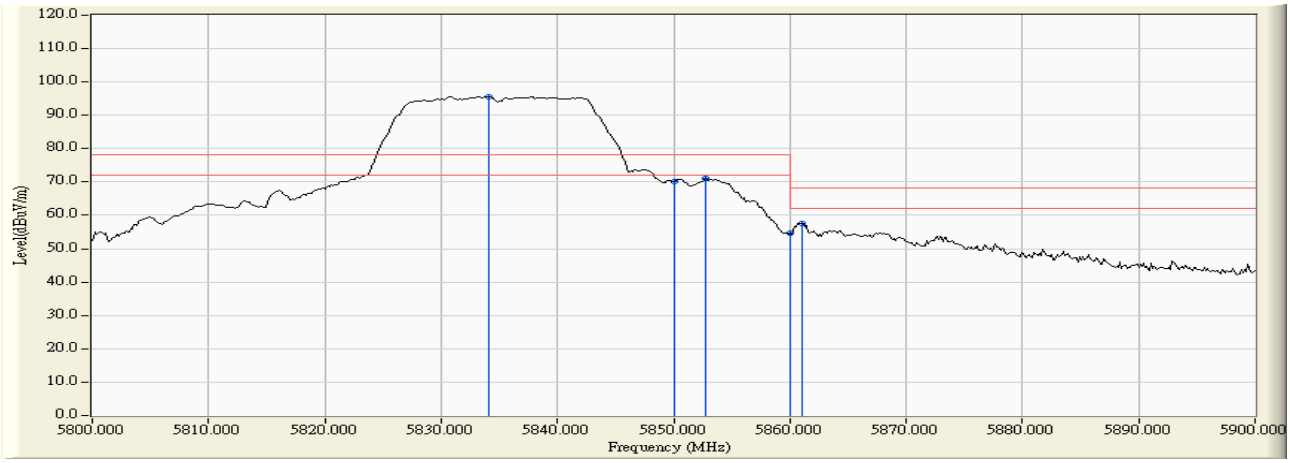
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)-Channel 165

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5829.710	4.842	95.744	100.586	22.366	78.220	Pass
Horizontal	5850.000	4.964	70.468	75.432	-2.788	78.220	Pass
Horizontal	5852.609	4.978	70.802	75.781	-2.439	78.220	Pass
Horizontal	5860.000	5.023	54.881	59.904	-8.316	68.220	Pass
Horizontal	5861.014	5.028	57.507	62.536	-5.684	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5834.058	6.018	89.651	95.669	17.449	78.220	Pass
Vertical	5850.000	6.037	64.062	70.099	-8.121	78.220	Pass
Vertical	5852.754	6.040	64.919	70.959	-7.261	78.220	Pass
Vertical	5860.000	6.047	48.643	54.690	-13.530	68.220	Pass
Vertical	5861.014	6.048	51.595	57.643	-10.577	68.220	Pass



Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 36 (5180MHz)

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)	5147.971	3.348	59.189	62.537	74.00	54.00	Pass
36 (Peak)	5150.000	3.340	55.920	59.260	74.00	54.00	Pass
36 (Peak)	5183.333	3.223	95.436	98.658	--	--	--
36 (Average)	5150.000	3.340	39.070	42.410	74.00	54.00	Pass
36 (Average)	5186.232	3.213	83.138	86.350	--	--	--

Figure Channel 36: Horizontal (Peak)

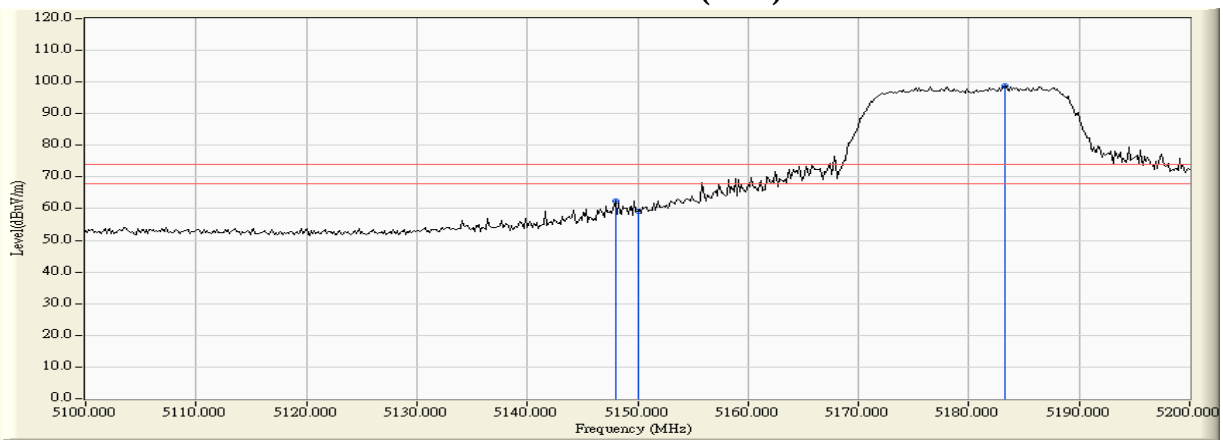
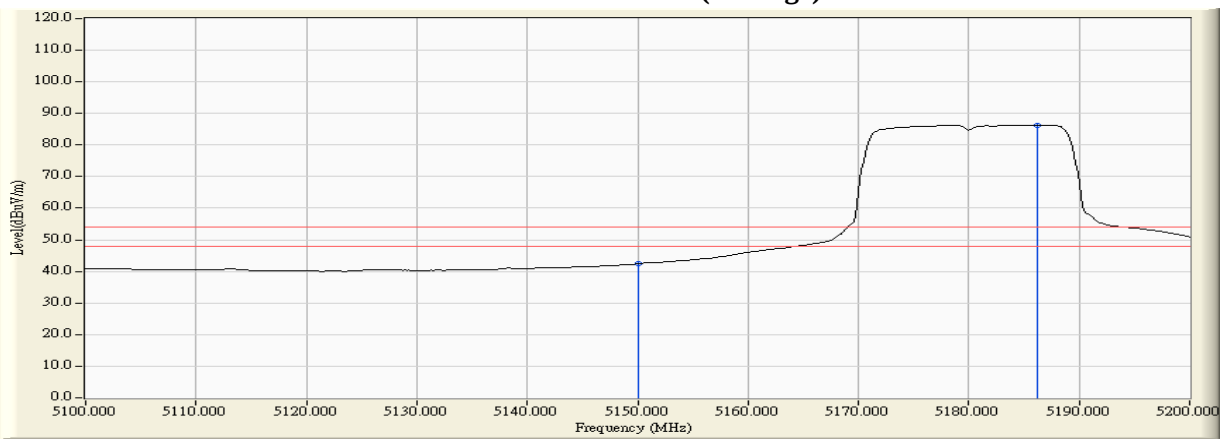


Figure Channel 36: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 36 (5180MHz)

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	5.258	56.336	61.594	74.00	54.00	Pass
36 (Peak)	5150.000	5.260	53.941	59.201	74.00	54.00	Pass
36 (Peak)	5177.826	5.336	90.475	95.811	--	--	--
36 (Average)	5150.000	5.260	37.570	42.830	74.00	54.00	Pass
36 (Average)	5185.217	5.357	76.708	82.064	--	--	--

Figure Channel 36: Vertical (Peak)

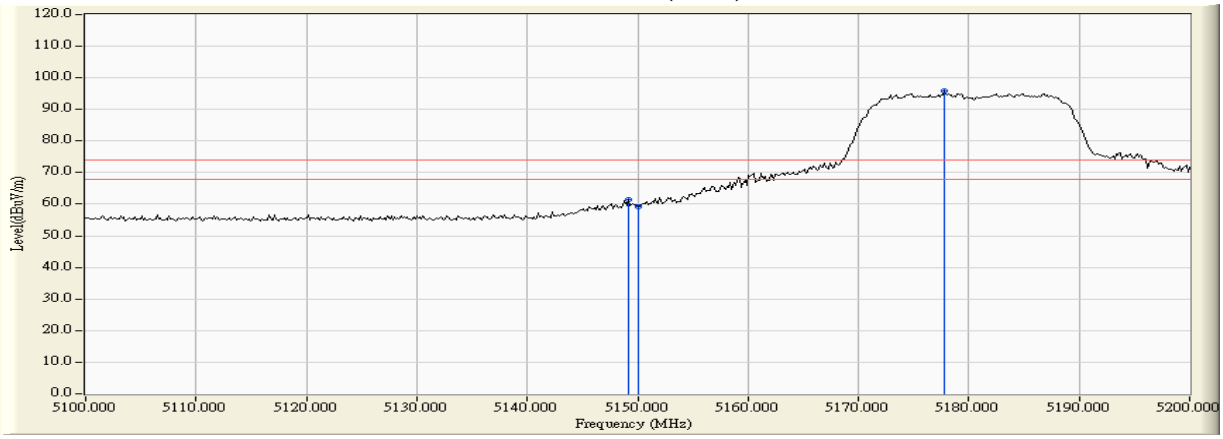
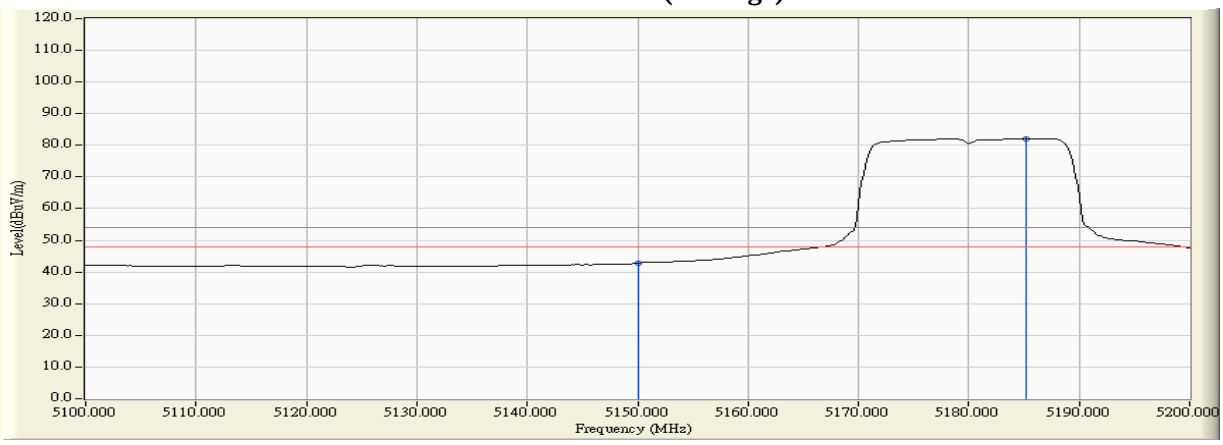


Figure Channel 36: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 64 (5320MHz)

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)	5317.200	3.648	99.395	103.043	--	--	--
64 (Peak)	5350.000	3.575	58.708	62.283	74.00	54.00	Pass
64 (Average)	5317.800	3.647	87.525	91.172	--	--	--
64 (Average)	5350.000	3.575	38.389	41.964	74.00	54.00	Pass
64 (Average)	5392.600	3.268	40.521	43.790	74.00	54.00	Pass

Figure Channel 64: Horizontal (Peak)

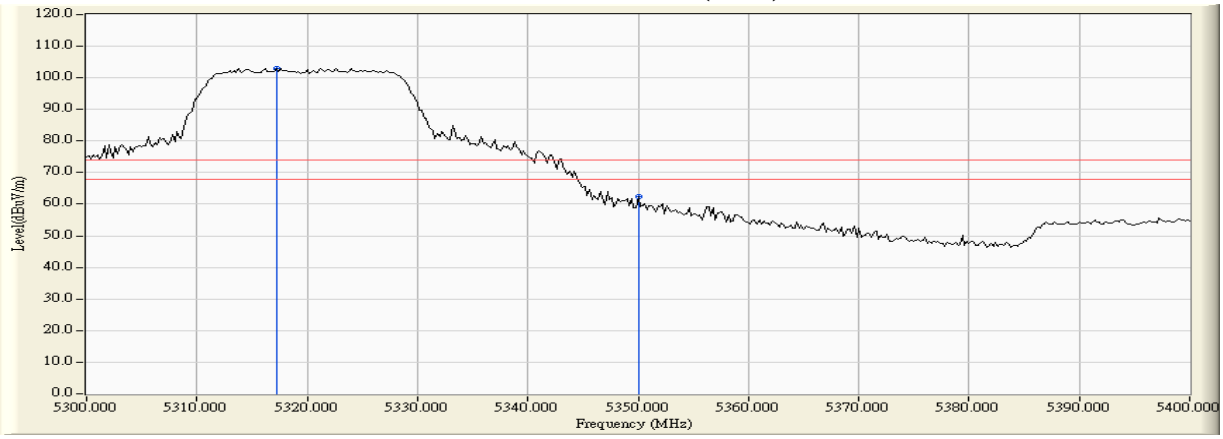
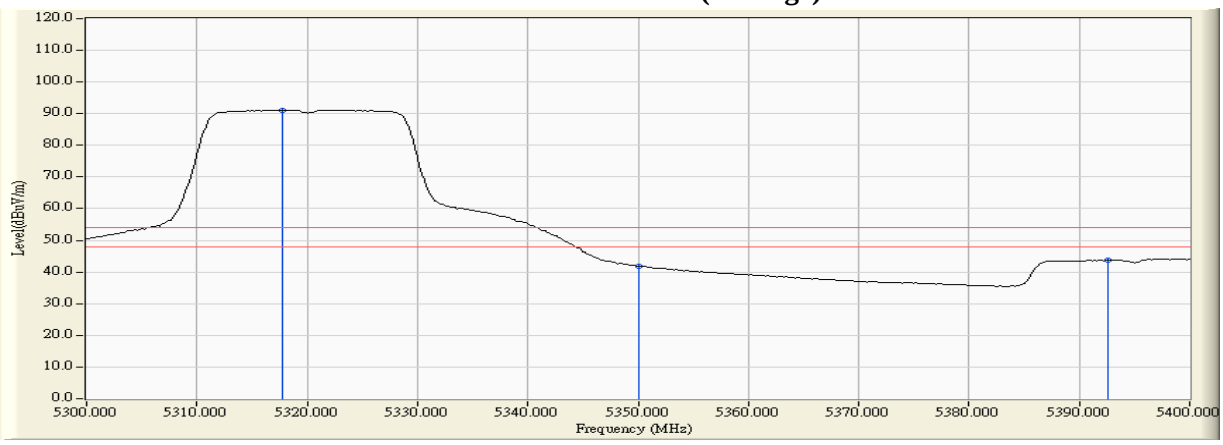


Figure Channel 64: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 64 (5320MHz)

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)	5317.600	3.885	97.631	101.516	--	--	--
64 (Peak)	5350.000	3.900	53.633	57.533	74.00	54.00	Pass
64 (Peak)	5351.000	3.901	53.989	57.889	74.00	54.00	Pass
64 (Average)	5317.400	3.885	85.054	88.939	--	--	--
64 (Average)	5350.000	3.900	36.699	40.599	74.00	54.00	Pass

Figure Channel 64: Vertical (Peak)

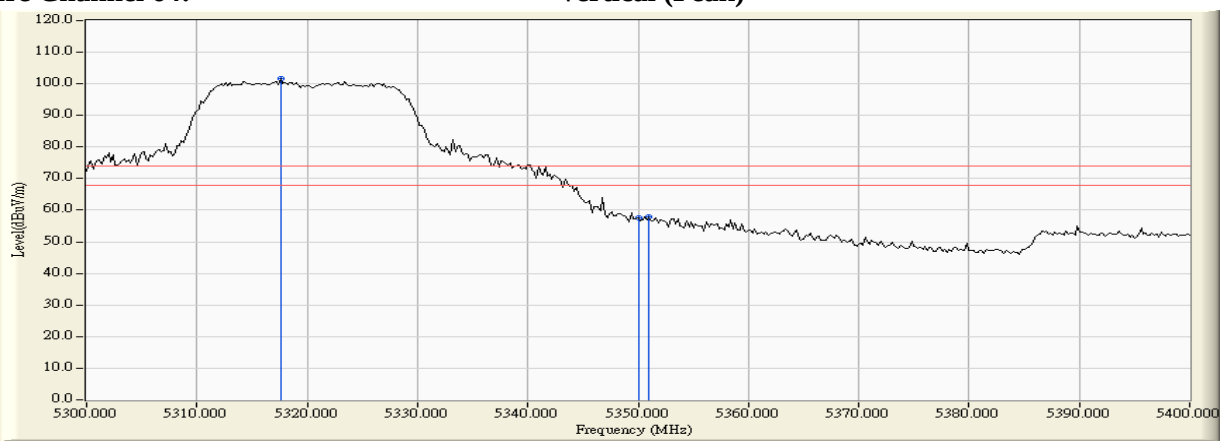
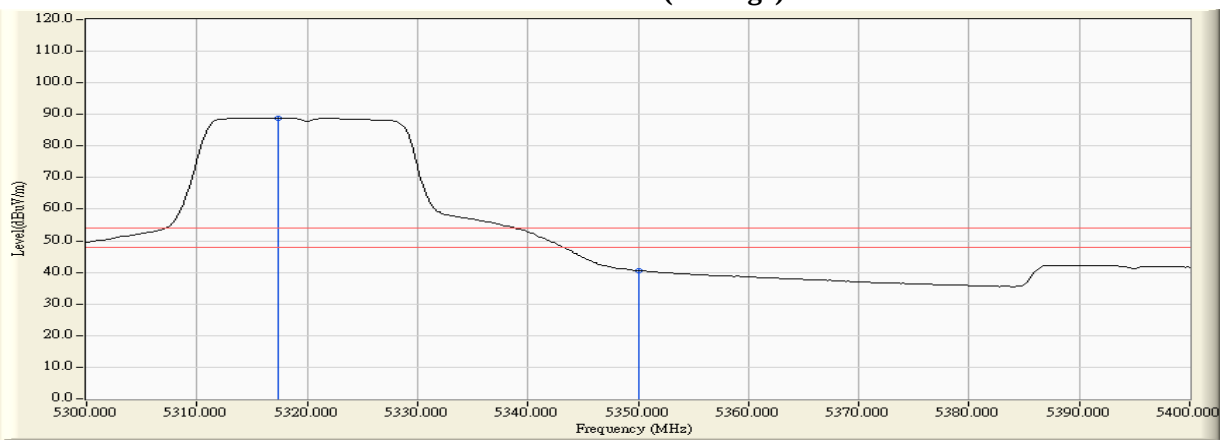


Figure Channel 64: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 100 (5500MHz)

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)	5460.000	3.775	55.088	58.863	74.00	54.00	Pass
100 (Peak)	5497.800	4.449	99.172	103.621	--	--	--
100 (Average)	5423.000	3.370	41.987	45.357	74.00	54.00	Pass
100 (Average)	5460.000	3.775	37.227	41.002	74.00	54.00	Pass
100 (Average)	5497.600	4.446	86.972	91.418	--	--	--

Figure Channel 100: Horizontal (Peak)

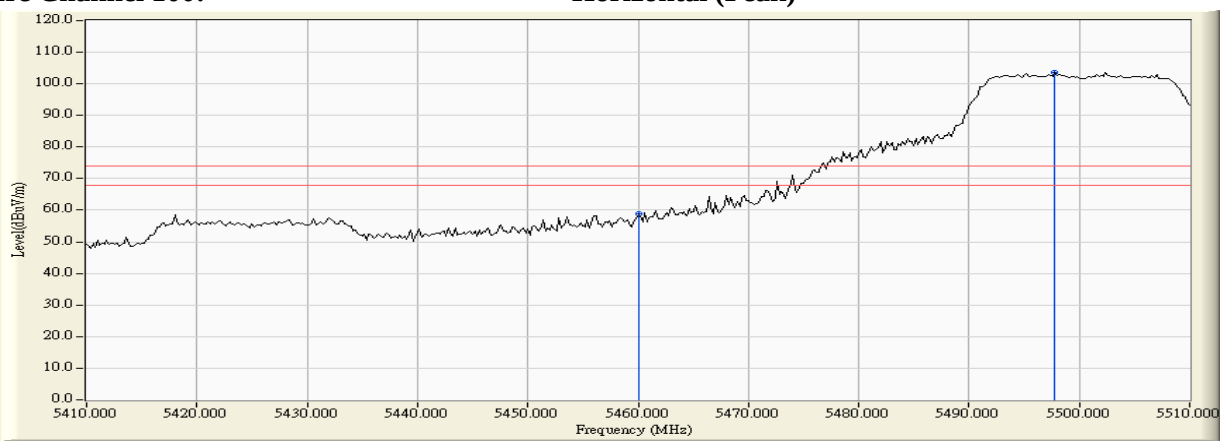
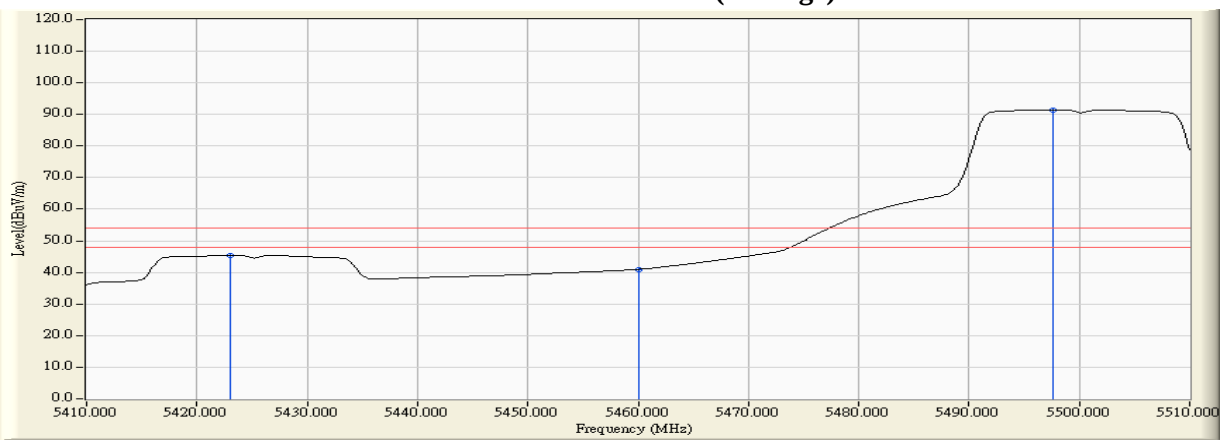


Figure Channel 100: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 100 (5500MHz)

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)	5454.000	3.849	53.884	57.733	74.00	54.00	Pass
100 (Peak)	5460.000	3.934	51.018	54.953	74.00	54.00	Pass
100 (Peak)	5499.000	4.450	95.889	100.338	--	--	--
100 (Average)	5426.800	3.727	37.959	41.686	74.00	54.00	Pass
100 (Average)	5460.000	3.934	36.323	40.258	74.00	54.00	Pass
100 (Average)	5503.800	4.499	84.096	88.595	--	--	--

Figure Channel 100: Vertical (Peak)

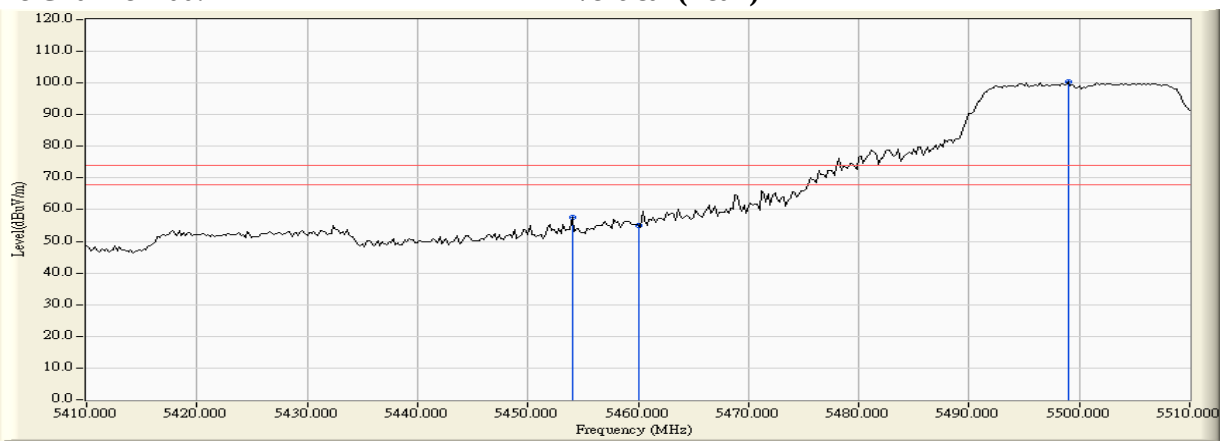
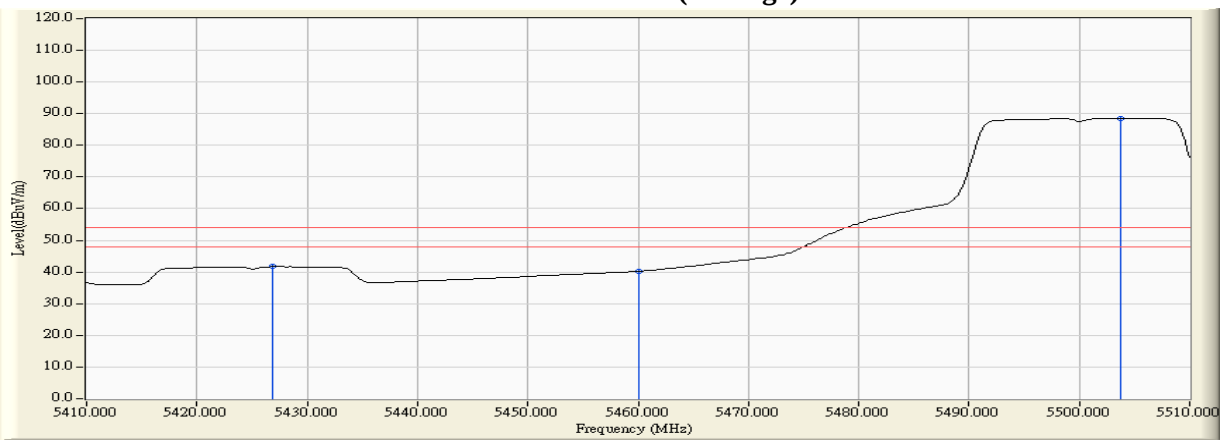


Figure Channel 100: Vertical (Average)



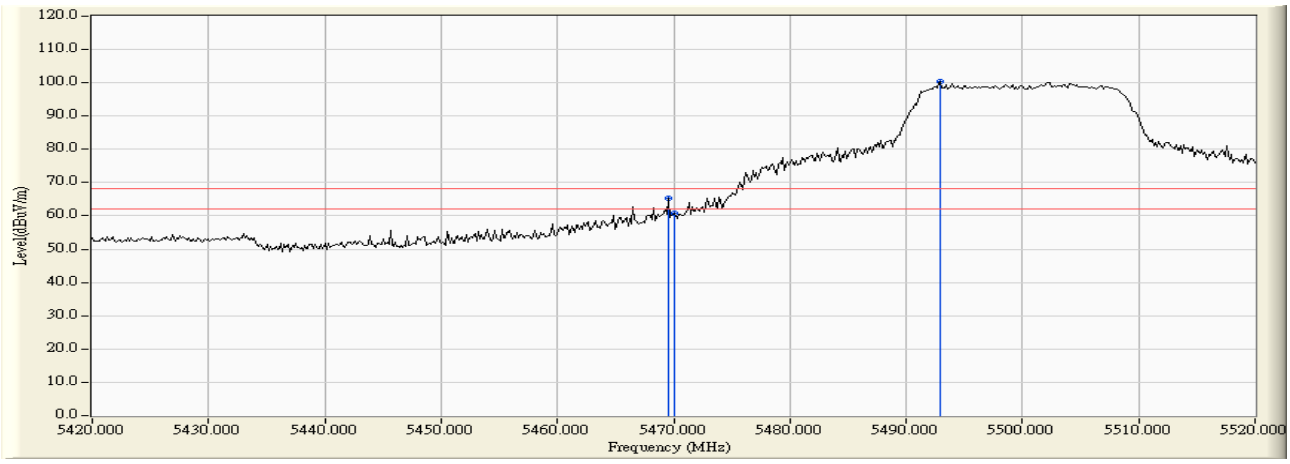
Note:

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.

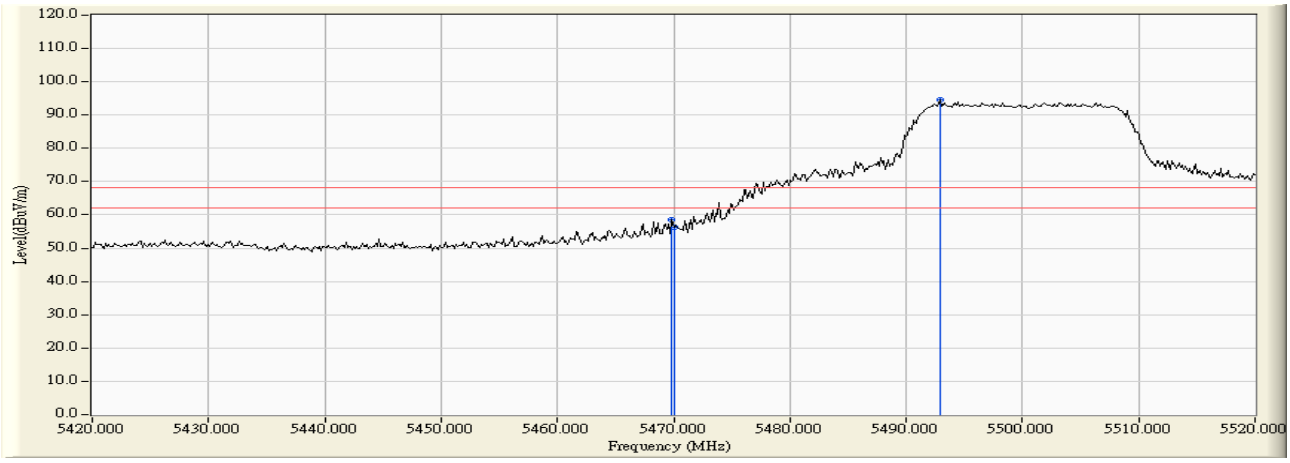
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 100

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5469.565	4.482	60.859	65.341	-2.879	68.220	Pass
Horizontal	5470.000	4.488	56.318	60.806	-7.414	68.220	Pass
Horizontal	5492.899	4.765	95.624	100.389	32.169	68.220	Pass



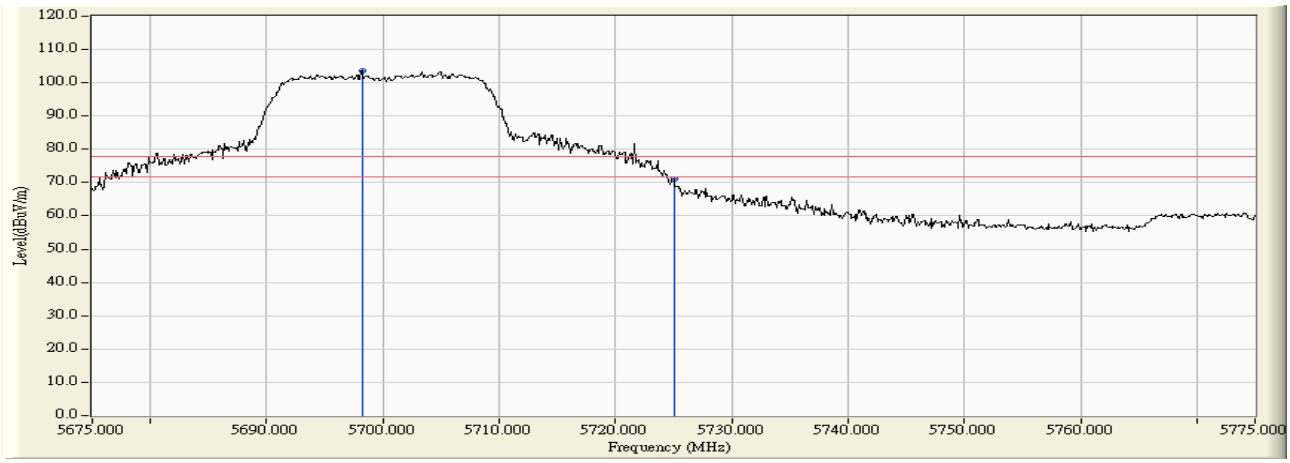
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5469.855	6.109	52.501	58.611	-9.609	68.220	Pass
Vertical	5470.000	6.112	50.142	56.253	-11.967	68.220	Pass
Vertical	5492.899	6.253	88.392	94.645	26.425	68.220	Pass



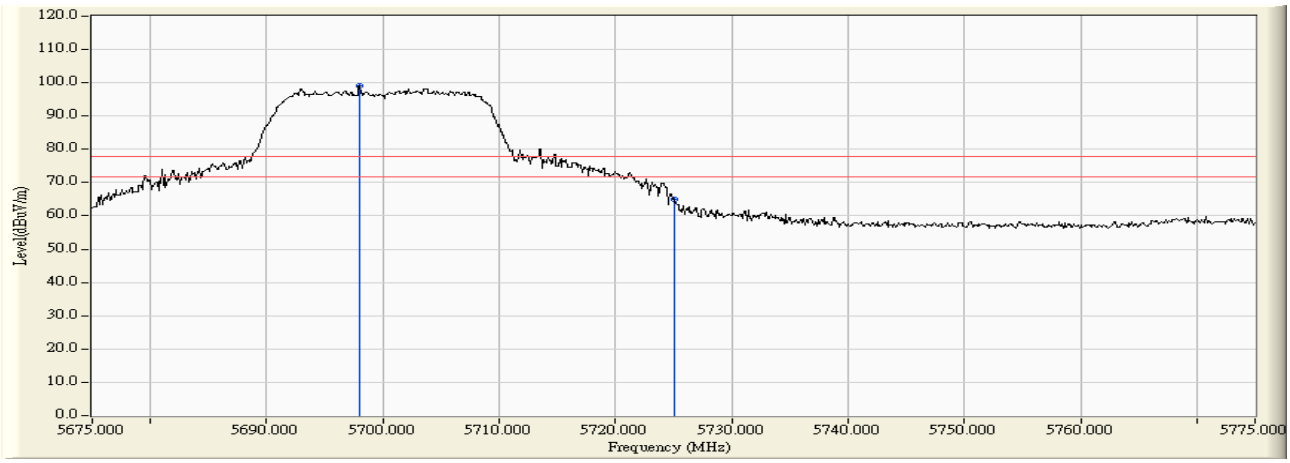
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 140

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5698.200	4.622	98.997	103.619	25.859	77.760	Pass
Horizontal	5725.000	4.654	66.499	71.153	-6.607	77.760	Pass



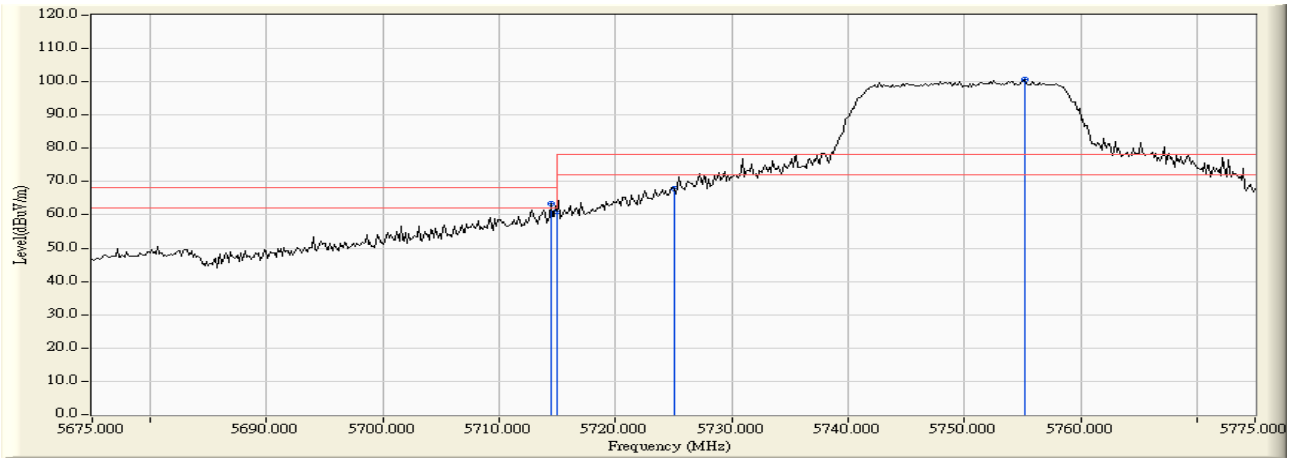
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5698.000	5.980	93.053	99.033	21.273	77.760	Pass
Vertical	5725.000	5.992	58.878	64.871	-12.889	77.760	Pass



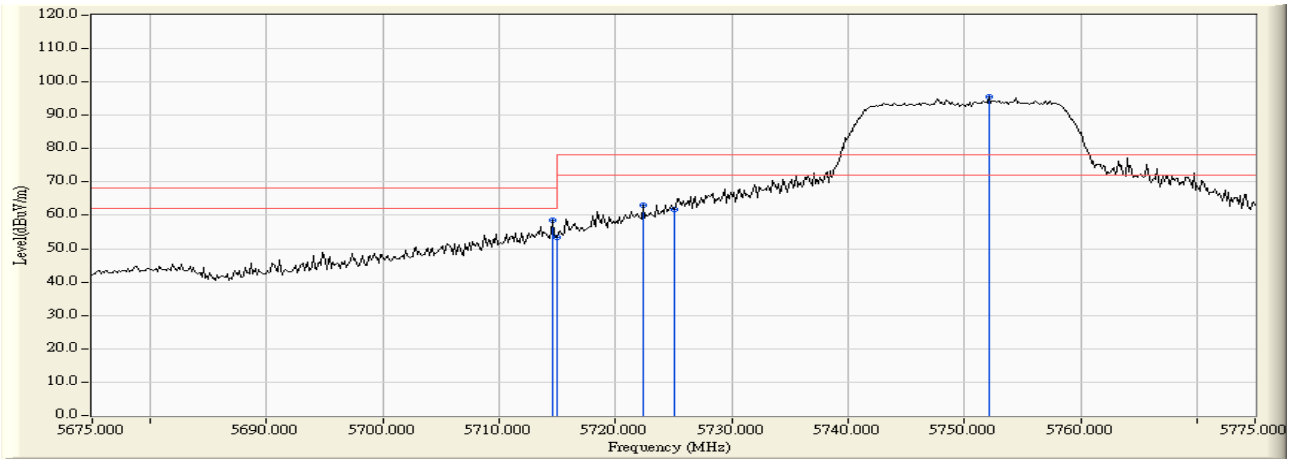
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 149

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5714.420	4.651	58.674	63.326	-4.894	68.220	Pass
Horizontal	5715.000	4.652	56.376	61.028	-7.192	68.220	Pass
Horizontal	5725.000	4.654	63.339	67.993	-10.227	78.220	Pass
Horizontal	5755.145	4.659	95.903	100.561	22.341	78.220	Pass



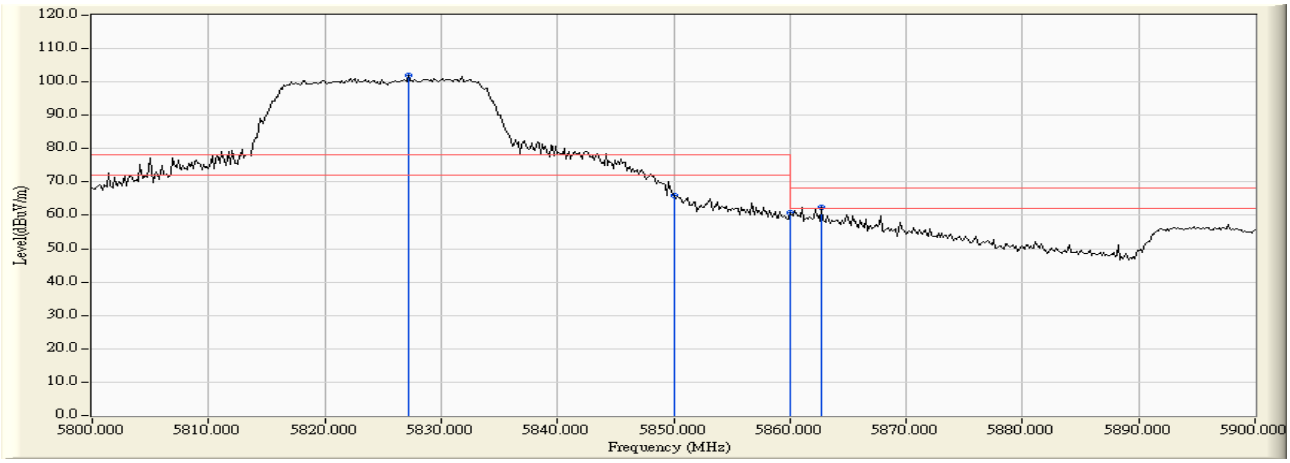
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5714.565	5.994	52.700	58.694	-9.526	68.220	Pass
Vertical	5715.000	5.994	47.504	53.498	-14.722	68.220	Pass
Vertical	5722.391	5.993	56.919	62.912	-15.308	78.220	Pass
Vertical	5725.000	5.992	55.794	61.787	-16.433	78.220	Pass
Vertical	5752.101	5.988	89.443	95.430	17.210	78.220	Pass



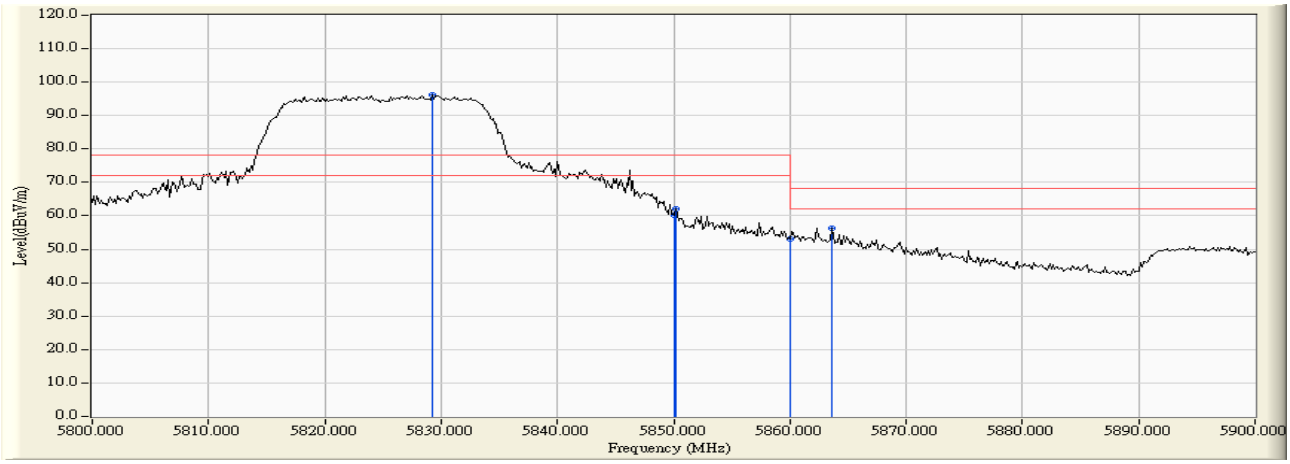
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps) -Channel 165

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5827.246	4.827	97.142	101.969	23.749	78.220	Pass
Horizontal	5850.000	4.964	61.001	65.965	-12.255	78.220	Pass
Horizontal	5860.000	5.023	55.657	60.680	-7.540	68.220	Pass
Horizontal	5862.754	5.039	57.488	62.527	-5.693	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5829.275	6.012	90.168	96.180	17.960	78.220	Pass
Vertical	5850.000	6.037	54.167	60.204	-18.016	78.220	Pass
Vertical	5850.145	6.037	56.187	62.224	-15.996	78.220	Pass
Vertical	5860.000	6.047	46.947	52.994	-15.226	68.220	Pass
Vertical	5863.623	6.051	50.371	56.422	-11.798	68.220	Pass



Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 38 (5190MHz)

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)	5147.101	3.350	63.231	66.582	74.00	54.00	Pass
38 (Peak)	5150.000	3.340	63.182	66.522	74.00	54.00	Pass
38 (Peak)	5176.232	3.248	92.608	95.856	--	--	--
38 (Average)	5150.000	3.340	41.035	44.375	74.00	54.00	Pass
38 (Average)	5196.377	3.167	79.264	82.432	--	--	--

Figure Channel 38: Horizontal (Peak)

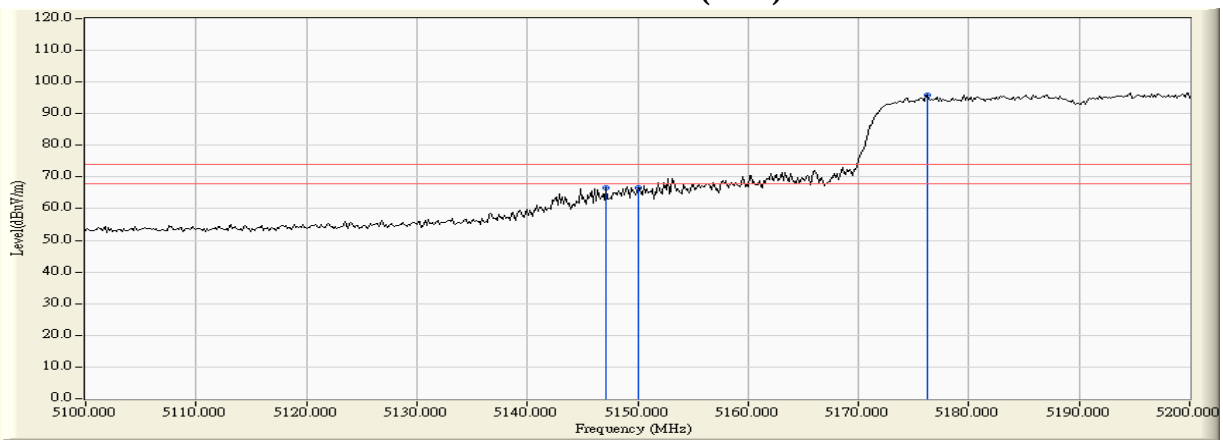
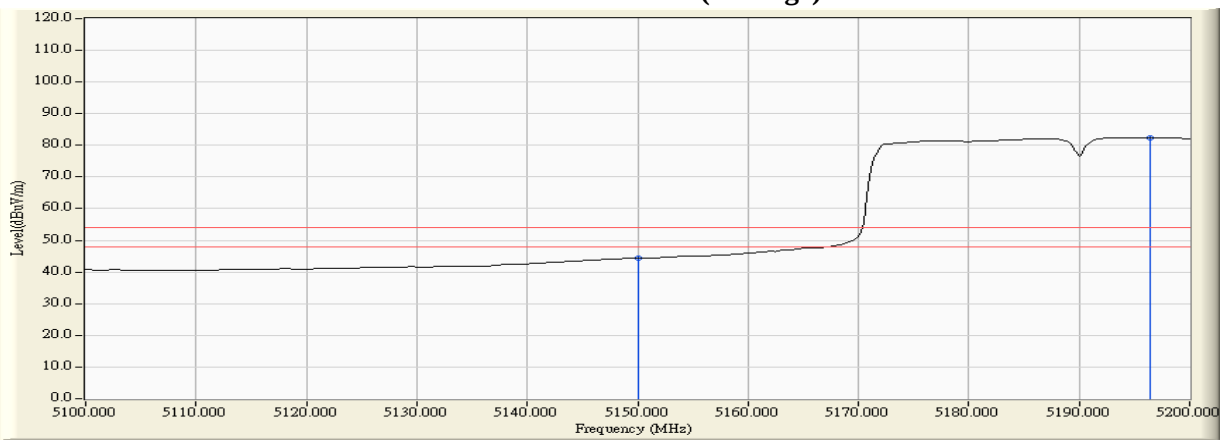


Figure Channel 38: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 38 (5190MHz)

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)	5144.493	5.244	56.513	61.758	74.00	54.00	Pass
38 (Peak)	5150.000	5.260	56.255	61.515	74.00	54.00	Pass
38 (Peak)	5186.667	5.360	86.477	91.837	--	--	--
38 (Average)	5150.000	5.260	38.600	43.860	74.00	54.00	Pass
38 (Average)	5195.942	5.377	72.743	78.120	--	--	--

Figure Channel 38: Vertical (Peak)

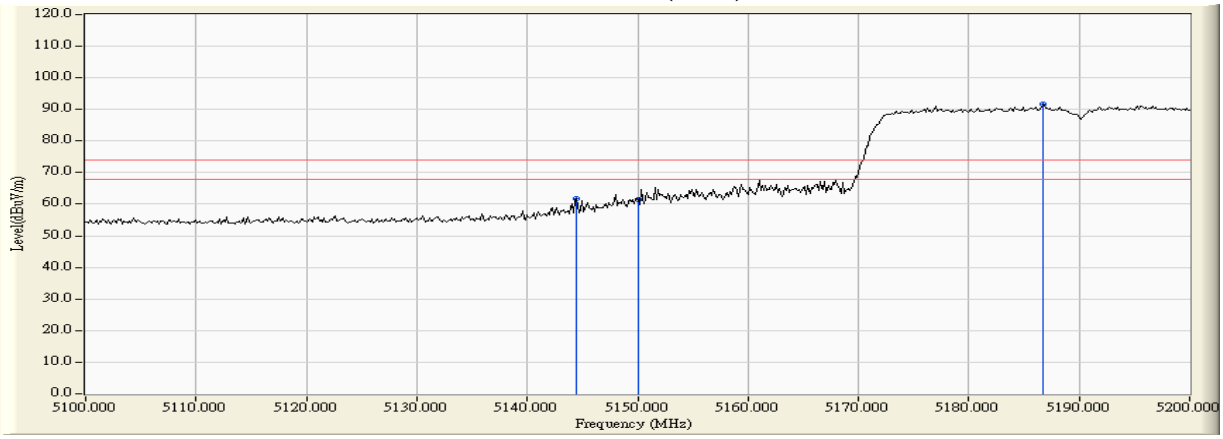
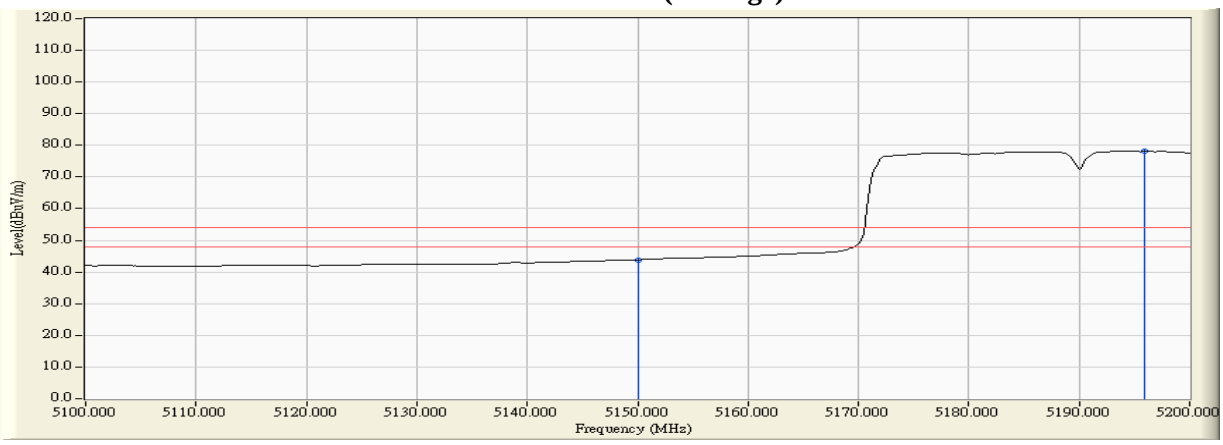


Figure Channel 38: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 62 (5310MHz)

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)	5301.000	3.679	97.076	100.755	--	--	--
62 (Peak)	5350.000	3.575	64.444	68.019	74.00	54.00	Pass
62 (Peak)	5350.200	3.575	69.860	73.434	74.00	54.00	Pass
62 (Average)	5303.800	3.674	83.402	87.076	--	--	--
62 (Average)	5350.000	3.575	45.156	48.731	74.00	54.00	Pass

Figure Channel 62: Horizontal (Peak)

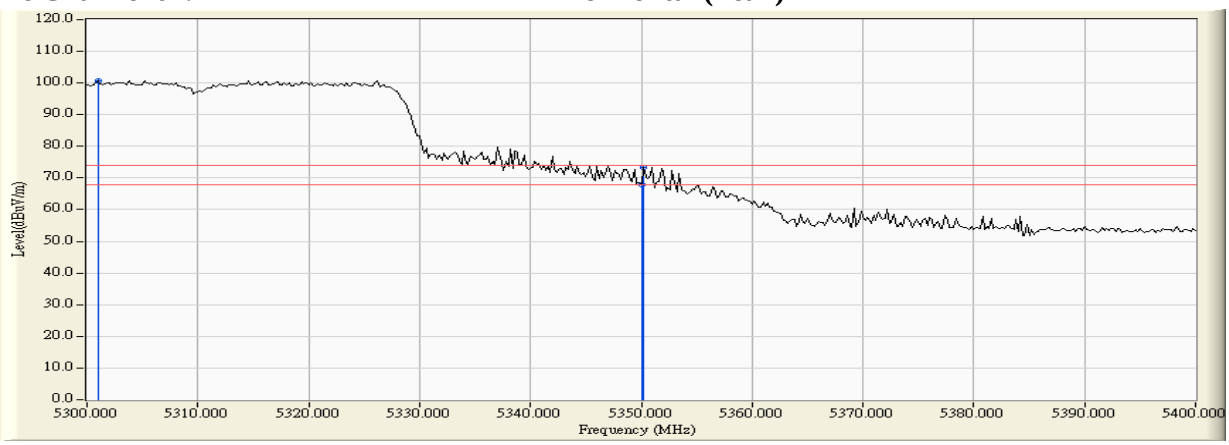
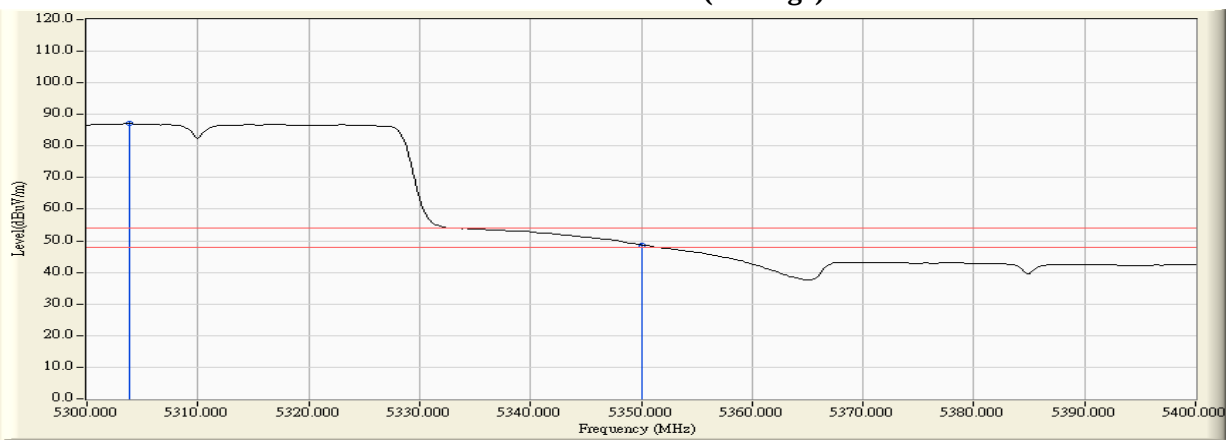


Figure Channel 62: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 62 (5310MHz)

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)	5306.600	3.876	93.249	97.125	--	--	--
62 (Peak)	5350.000	3.900	60.327	64.227	74.00	54.00	Pass
62 (Peak)	5350.800	3.900	65.381	69.281	74.00	54.00	Pass
62 (Average)	5303.800	3.874	79.439	83.312	--	--	--
62 (Average)	5350.000	3.900	41.649	45.549	74.00	54.00	Pass

Figure Channel 62: Vertical (Peak)

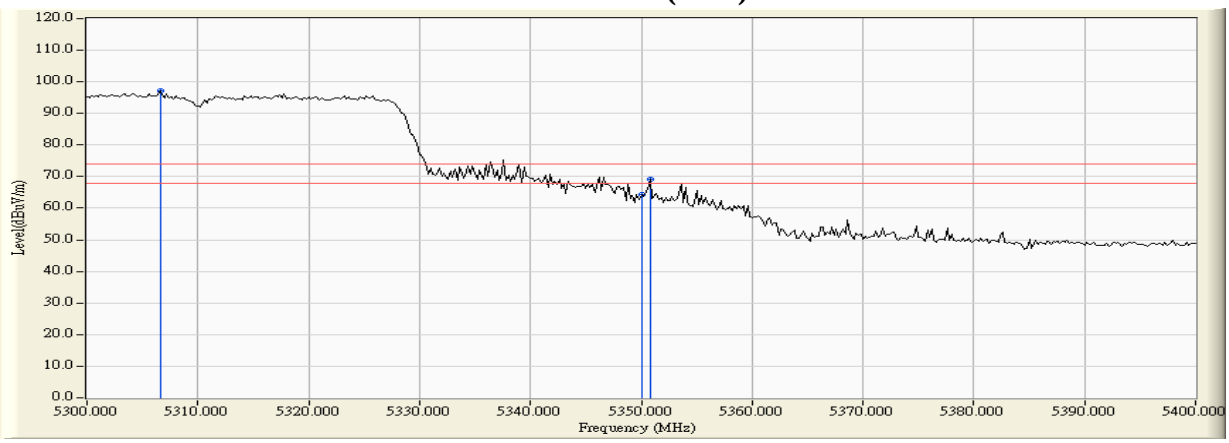
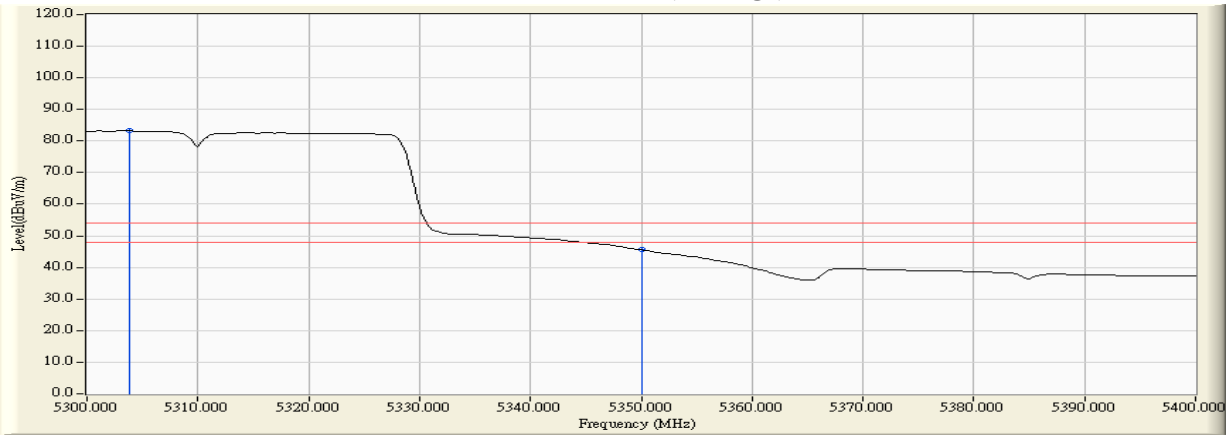


Figure Channel 62: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 102 (5510MHz)

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)	5459.200	3.760	64.284	68.044	74.00	54.00	Pass
102 (Peak)	5460.000	3.775	62.625	66.400	74.00	54.00	Pass
102 (Peak)	5496.400	4.430	95.921	100.351	--	--	--
102 (Average)	5460.000	3.775	45.380	49.155	74.00	54.00	Pass
102 (Average)	5504.000	4.533	82.012	86.545	--	--	--

Figure Channel 102: Horizontal (Peak)

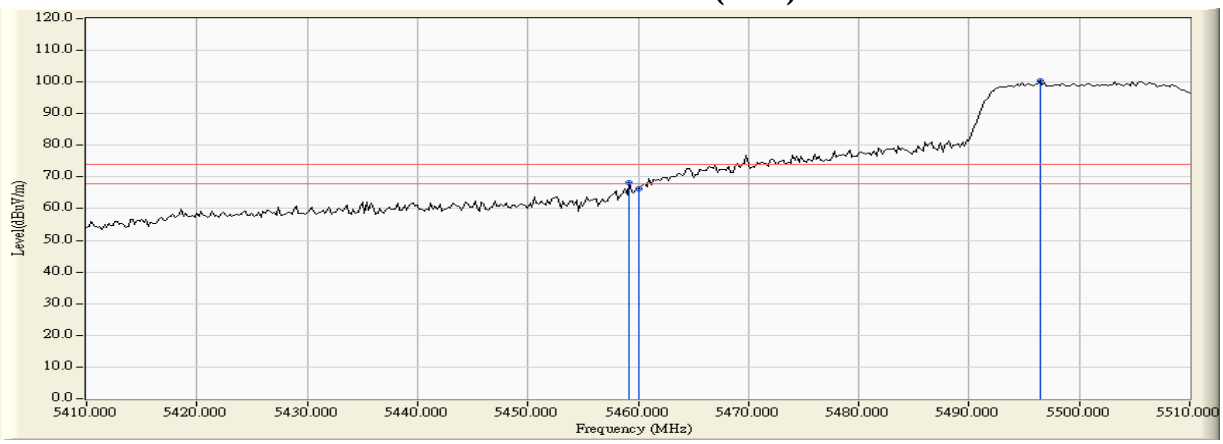
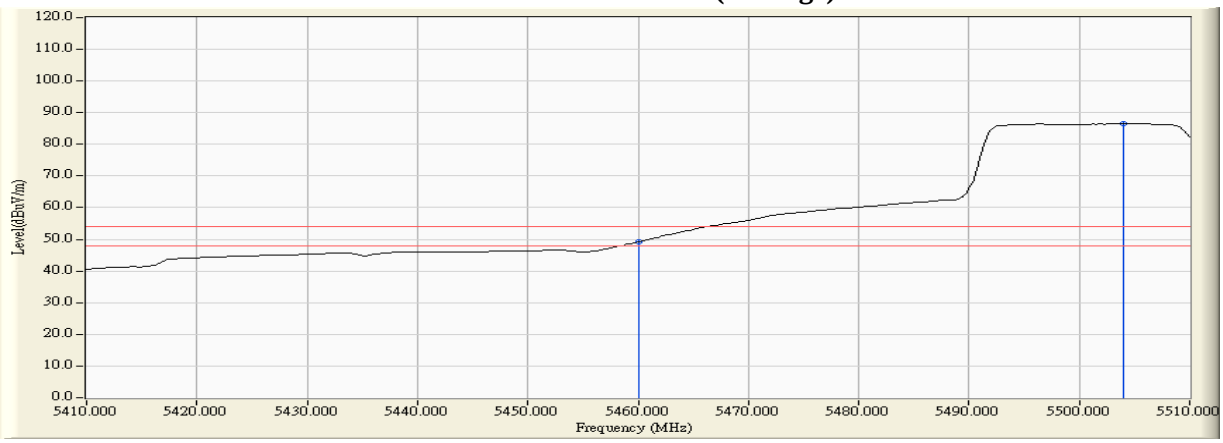


Figure Channel 102: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 102 (5510MHz)

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)	5460.000	3.934	62.599	66.534	74.00	54.00	Pass
102 (Peak)	5506.800	4.512	93.215	97.726	--	--	--
102 (Average)	5460.000	3.934	44.593	48.528	74.00	54.00	Pass
102 (Average)	5505.600	4.511	79.445	83.956	--	--	--

Figure Channel 102: Vertical (Peak)

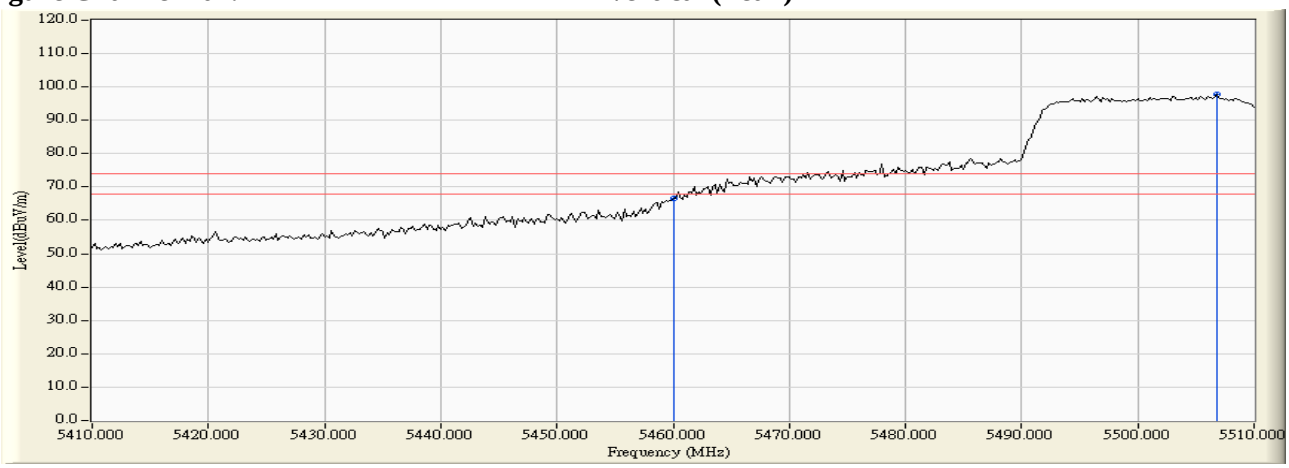
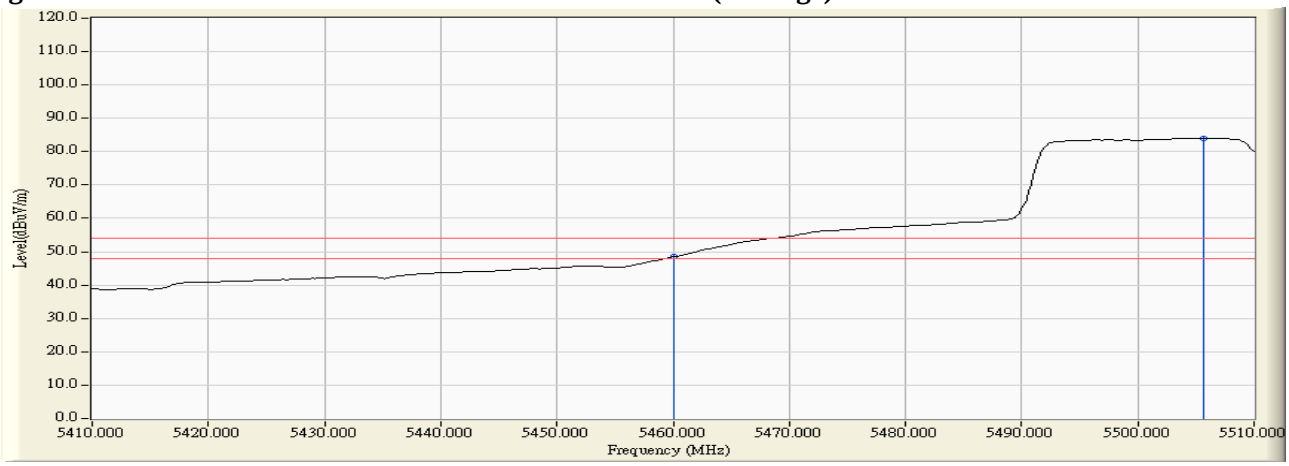


Figure Channel 102: Vertical (Average)



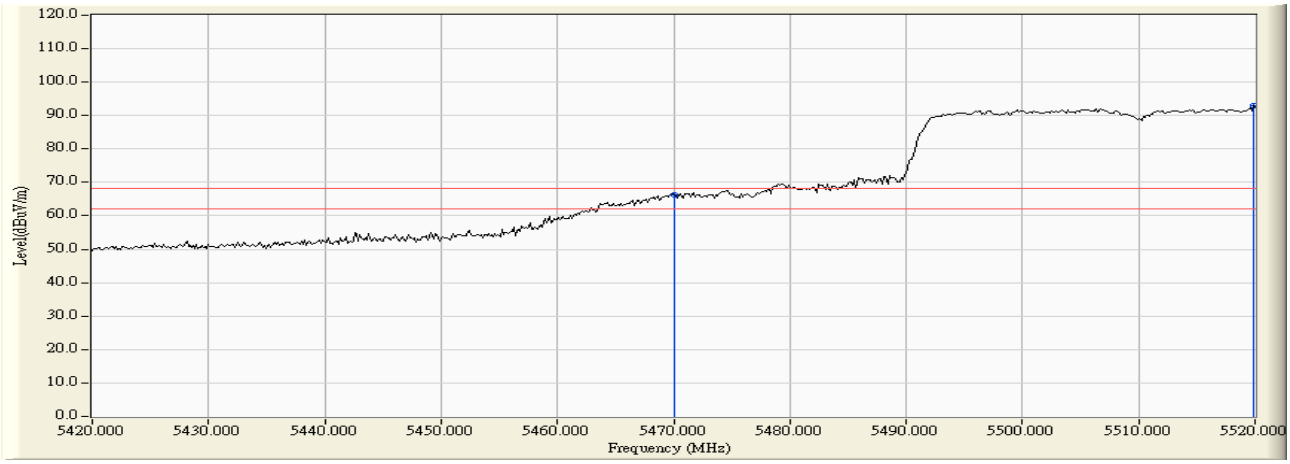
Note:

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.

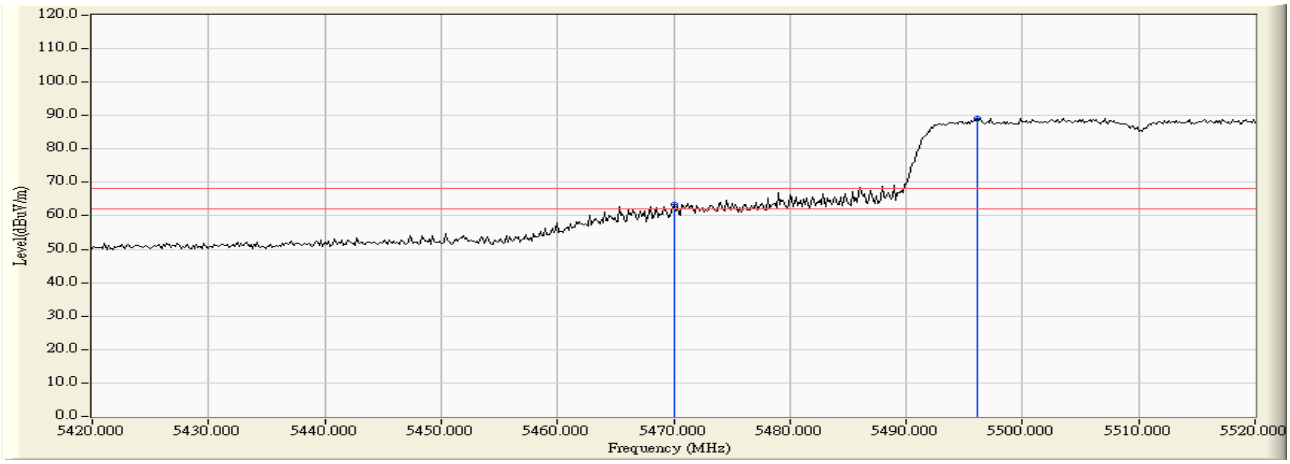
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 102

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5470.000	4.488	61.704	66.192	-2.028	68.220	Pass
Horizontal	5519.855	4.729	88.087	92.817	24.597	68.220	Pass



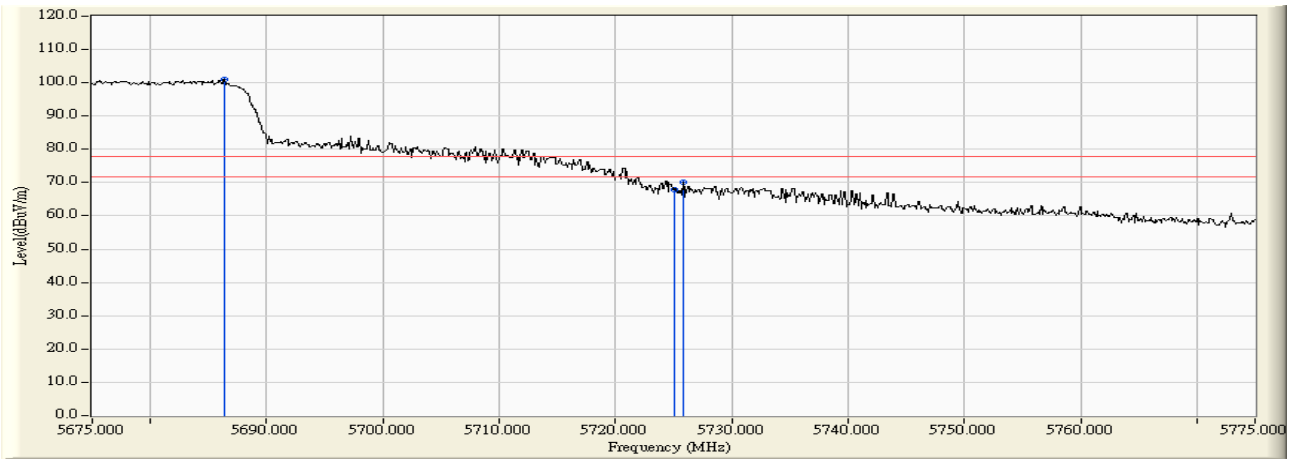
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5470.000	6.112	57.387	63.498	-4.722	68.220	Pass
Vertical	5496.087	6.263	82.883	89.146	20.926	68.220	Pass



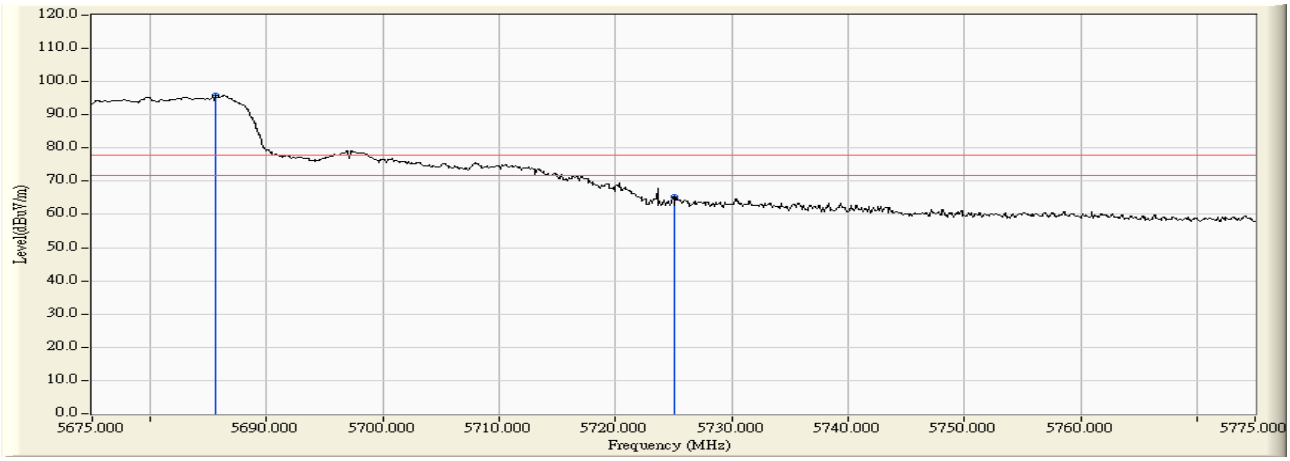
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n-40BW 15Mbps) -Channel 134

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5686.400	4.575	96.596	101.171	23.411	77.760	Pass
Horizontal	5725.000	4.654	63.081	67.735	-10.025	77.760	Pass
Horizontal	5725.800	4.655	65.454	70.108	-7.652	77.760	Pass



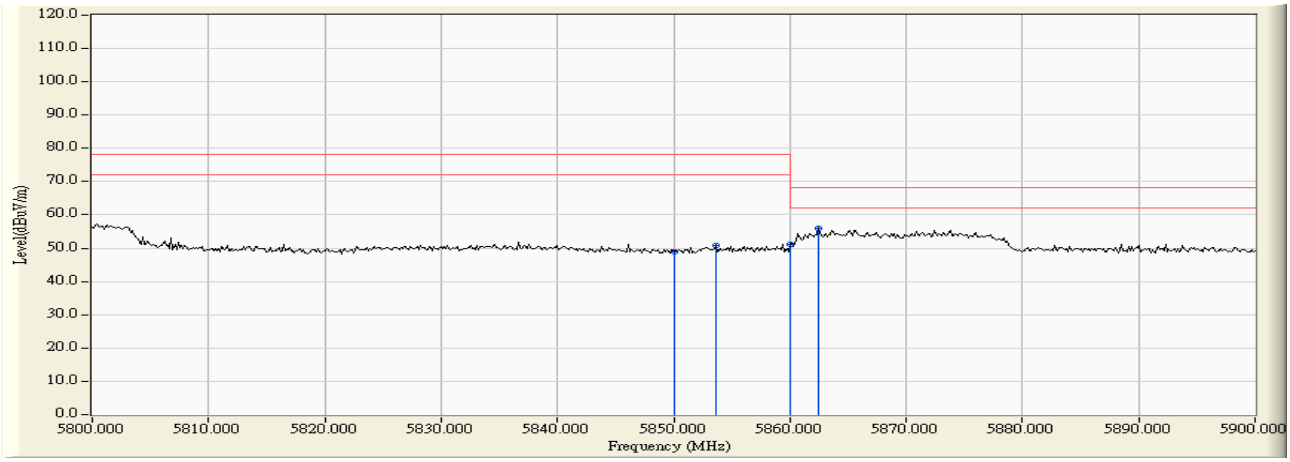
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5685.600	5.953	89.896	95.849	18.089	77.760	Pass
Vertical	5725.000	5.992	59.328	65.321	-12.439	77.760	Pass



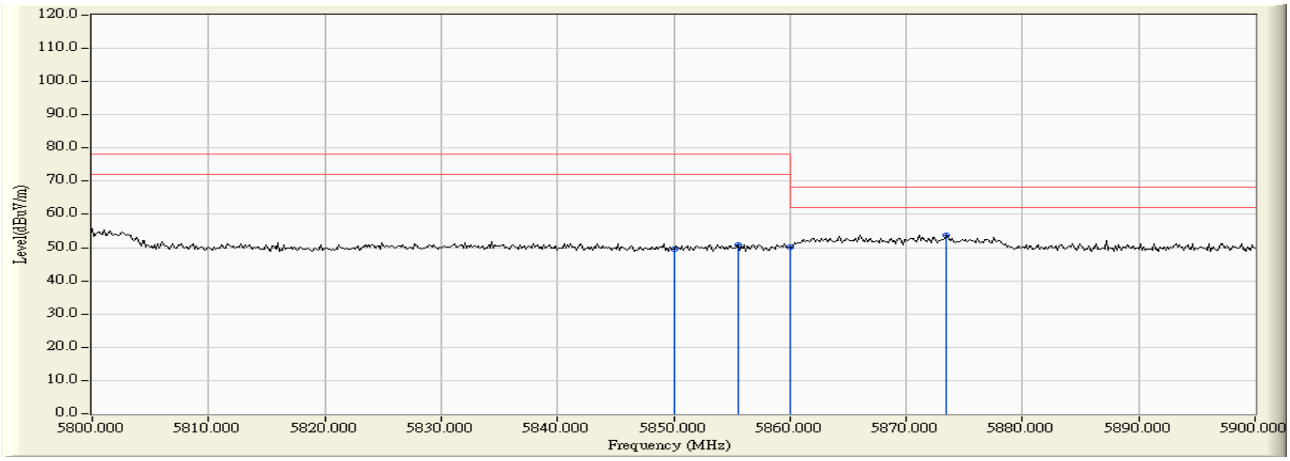
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 4: Transmit (802.11ac-20BW-7.2Mbps) -Channel 44

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5850.000	4.964	43.948	48.912	-29.308	78.220	Pass
Horizontal	5853.623	4.986	45.959	50.944	-27.276	78.220	Pass
Horizontal	5860.000	5.023	46.121	51.144	-17.076	68.220	Pass
Horizontal	5862.464	5.037	50.856	55.893	-12.327	68.220	Pass



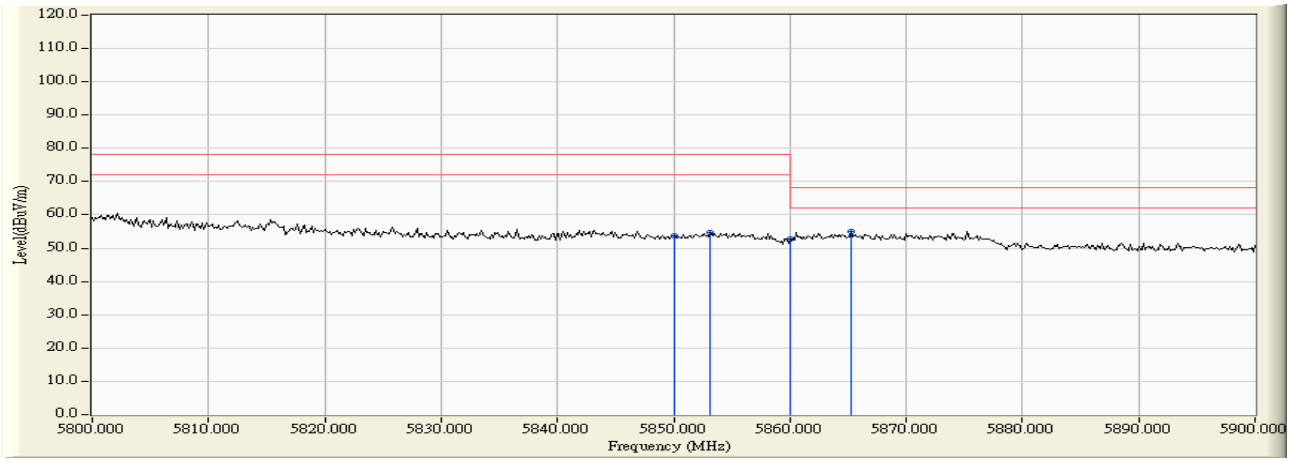
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5850.000	6.037	43.572	49.609	-28.611	78.220	Pass
Vertical	5855.507	6.043	44.848	50.891	-27.329	78.220	Pass
Vertical	5860.000	6.047	44.130	50.177	-18.043	68.220	Pass
Vertical	5873.478	6.063	47.759	53.821	-14.399	68.220	Pass



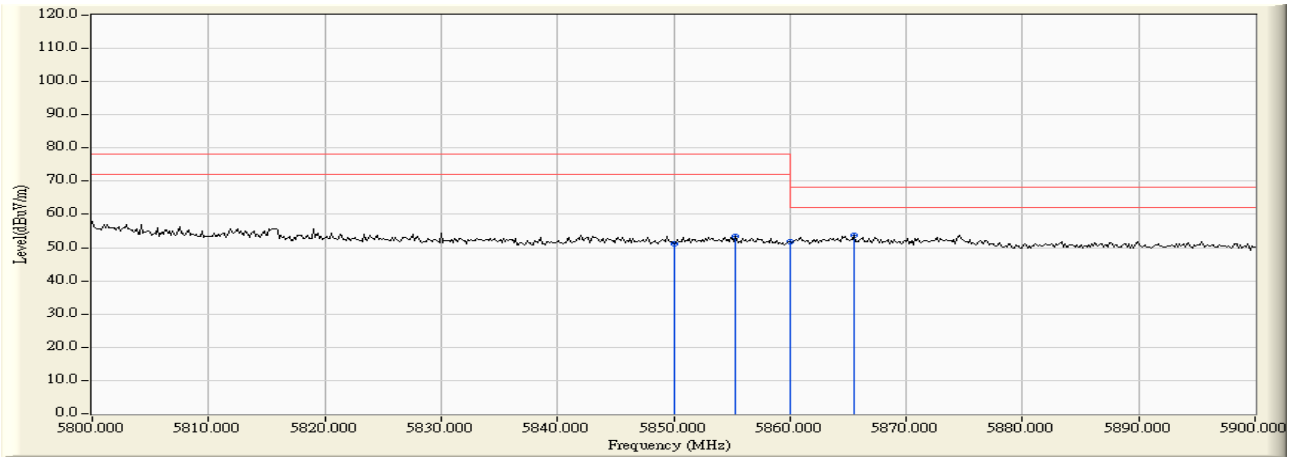
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 5: Transmit (802.11ac-40BW-15Mbps) -Channel 42

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5850.000	4.964	48.624	53.588	-24.632	78.220	Pass
Horizontal	5853.188	4.982	49.635	54.618	-23.602	78.220	Pass
Horizontal	5860.000	5.023	47.600	52.623	-15.597	68.220	Pass
Horizontal	5865.217	5.053	49.974	55.027	-13.193	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5850.000	6.037	45.033	51.070	-27.150	78.220	Pass
Vertical	5855.362	6.043	47.406	53.448	-24.772	78.220	Pass
Vertical	5860.000	6.047	45.835	51.882	-16.338	68.220	Pass
Vertical	5865.507	6.052	47.537	53.590	-14.630	68.220	Pass



Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) -Channel 42 (5210MHz)

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
42 (Peak)	5150.000	3.340	58.515	61.855	74.00	54.00	Pass
42 (Peak)	5194.058	3.179	89.840	93.018	--	--	--
42 (Average)	5150.000	3.340	42.826	46.166	74.00	54.00	Pass
42 (Average)	5199.130	3.157	74.551	77.708	--	--	--

Figure Channel 42: Horizontal (Peak)

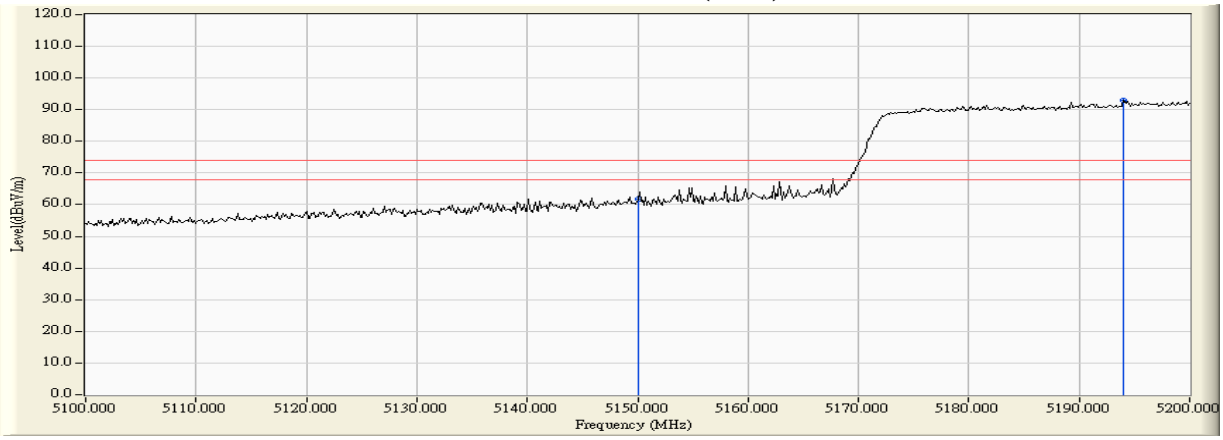
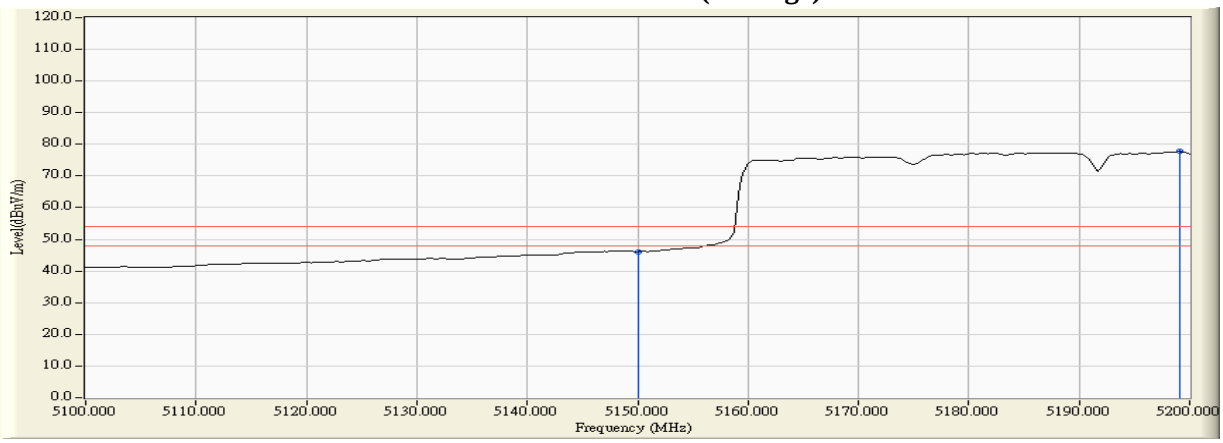


Figure Channel 42: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) -Channel 42 (5210MHz)

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
42 (Peak)	5150.000	5.260	52.001	57.261	74.00	54.00	Pass
42 (Peak)	5194.058	5.374	81.045	86.419	--	--	--
42 (Average)	5150.000	5.260	38.348	43.608	74.00	54.00	Pass
42 (Average)	5199.130	5.383	66.564	71.948	--	--	--

Figure Channel 42: Vertical (Peak)

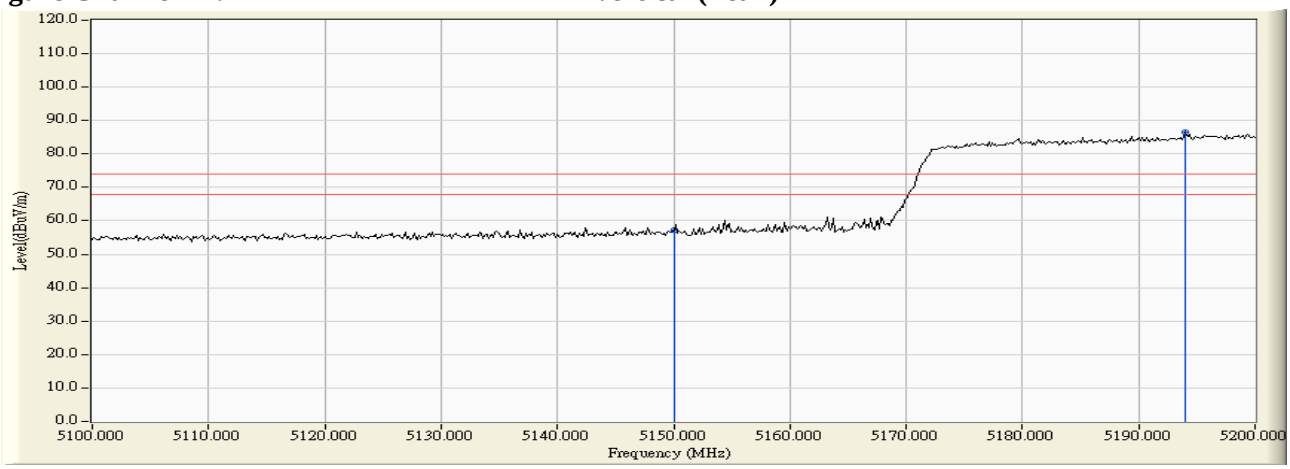
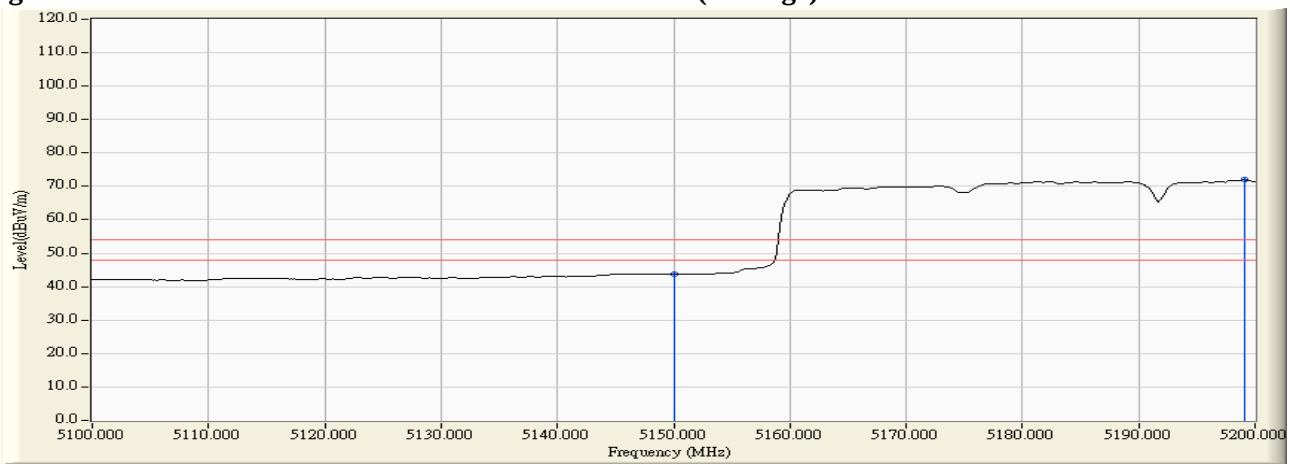


Figure Channel 42: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) -Channel 58 (5290MHz)

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
58 (Peak)	5301.739	3.871	90.195	94.066	--	--	--
58 (Peak)	5350.000	3.716	64.620	68.337	74.00	54.00	Pass
58 (Average)	5301.449	3.872	74.195	78.067	--	--	--
58 (Average)	5350.000	3.716	47.251	50.968	74.00	54.00	Pass

Figure Channel 58: Horizontal (Peak)

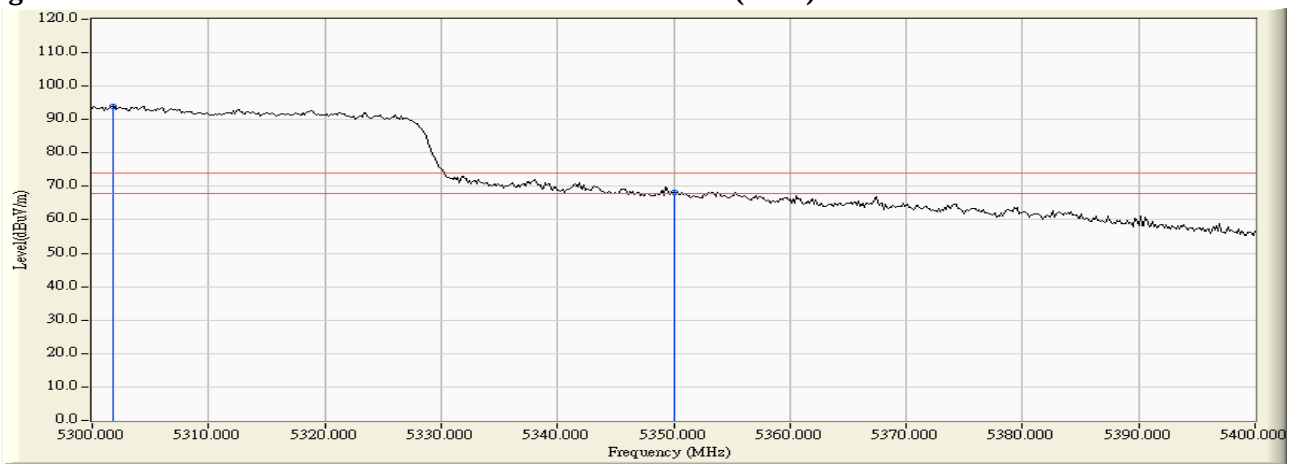
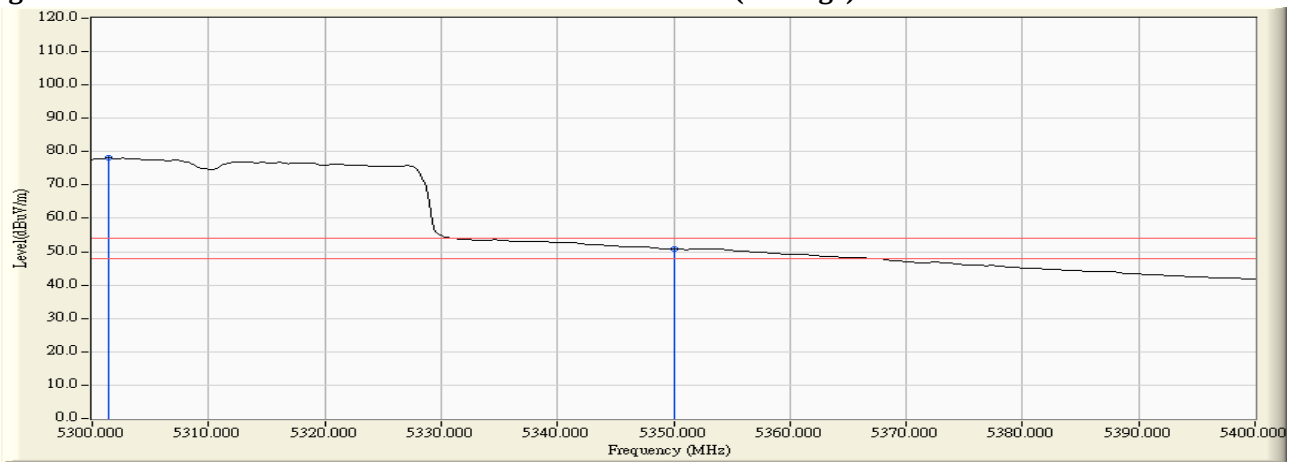


Figure Channel 58: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) -Channel 58 (5290MHz)

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
58 (Peak)	5300.145	5.751	81.470	87.221	--	--	--
58 (Peak)	5350.000	5.691	55.206	60.898	74.00	54.00	Pass
58 (Average)	5301.304	5.753	66.865	72.618	--	--	--
58 (Average)	5350.000	5.691	41.280	46.972	74.00	54.00	Pass

Figure Channel 58: Vertical (Peak)

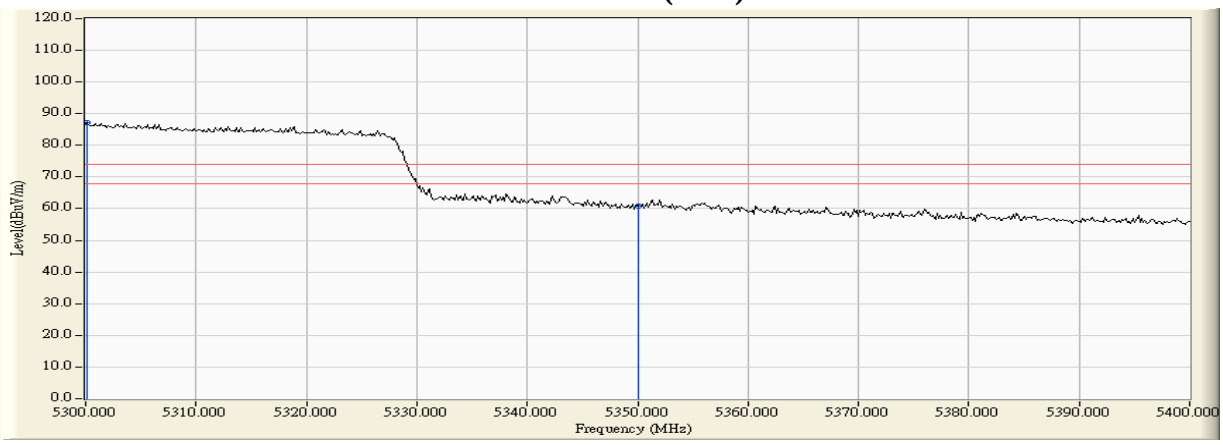
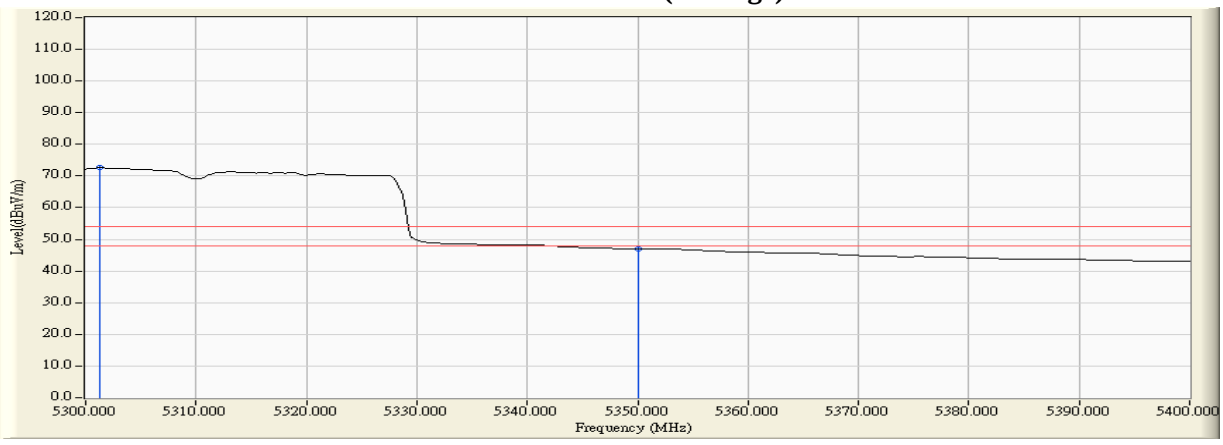


Figure Channel 58: Vertical (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) -Channel 106 (5530MHz)

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
106 (Peak)	5451.600	3.634	67.562	71.195	74.00	54.00	Pass
106 (Peak)	5460.000	3.775	65.180	68.955	74.00	54.00	Pass
106 (Peak)	5501.600	4.500	91.708	96.208	--	--	--
106 (Average)	5460.000	3.775	48.968	52.743	74.00	54.00	Pass
106 (Average)	5501.600	4.500	75.885	80.385	--	--	--

Figure Channel 106: Horizontal (Peak)

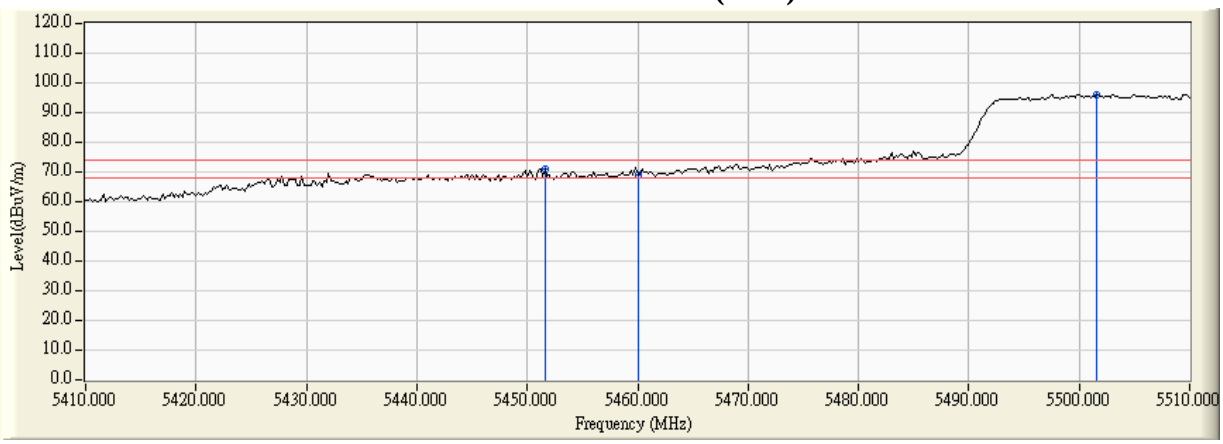
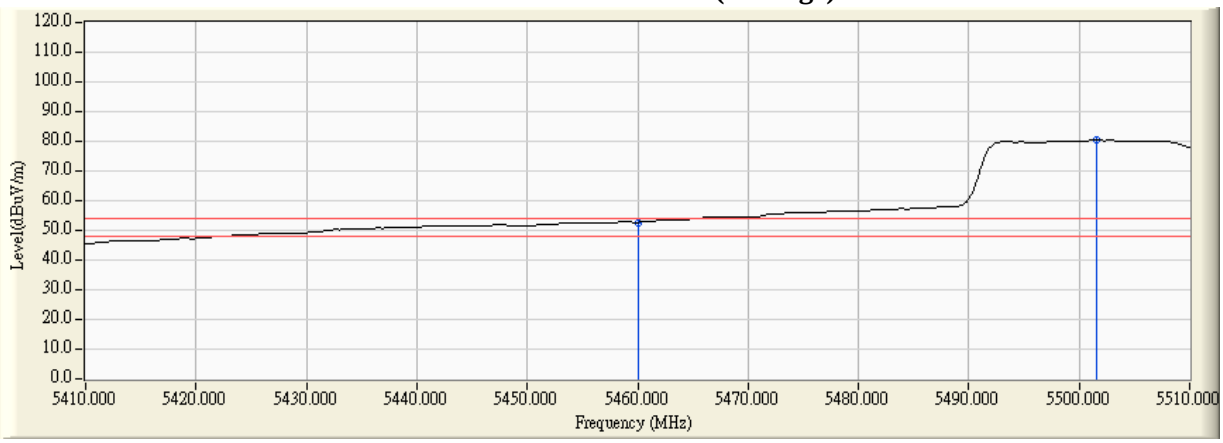


Figure Channel 106: Horizontal (Average)



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 : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) -Channel 106 (5530MHz)

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
106 (Peak)	5456.800	3.888	65.782	69.671	74.00	54.00	Pass
106 (Peak)	5460.000	3.934	64.454	68.389	74.00	54.00	Pass
106 (Peak)	5505.200	4.511	88.941	93.452	--	--	--
106 (Average)	5460.000	3.934	47.653	51.588	74.00	54.00	Pass
106 (Average)	5501.600	4.476	73.105	77.581	--	--	--

Figure Channel 106: Vertical (Peak)

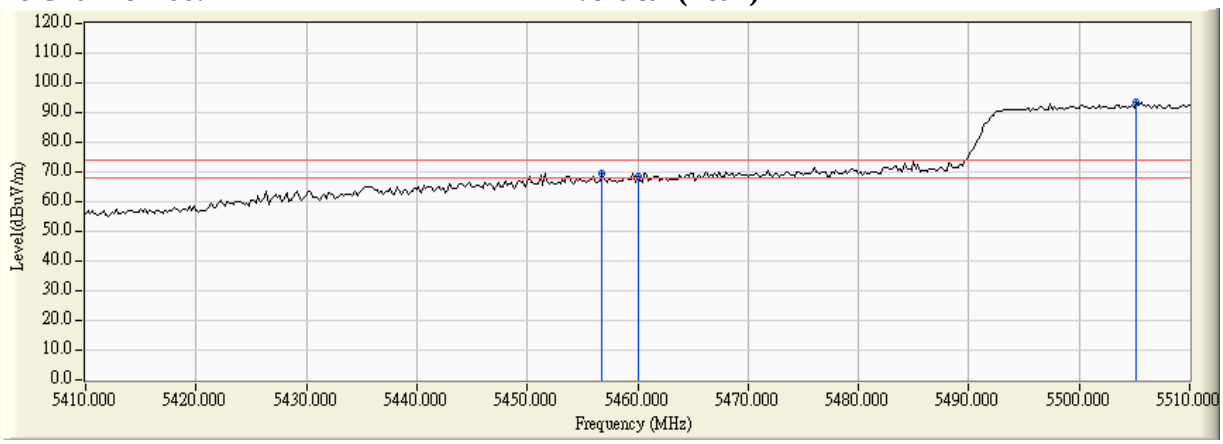
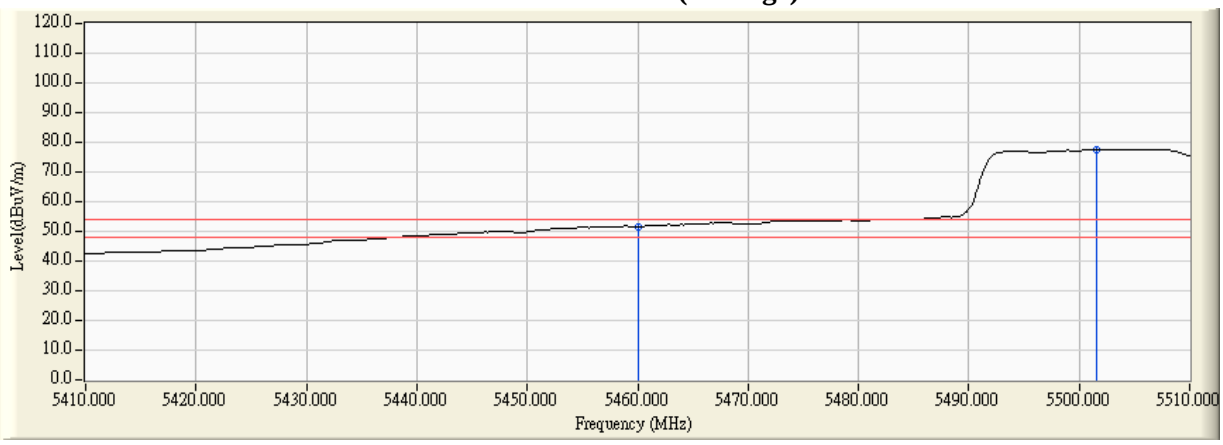


Figure Channel 106: Vertical (Average)



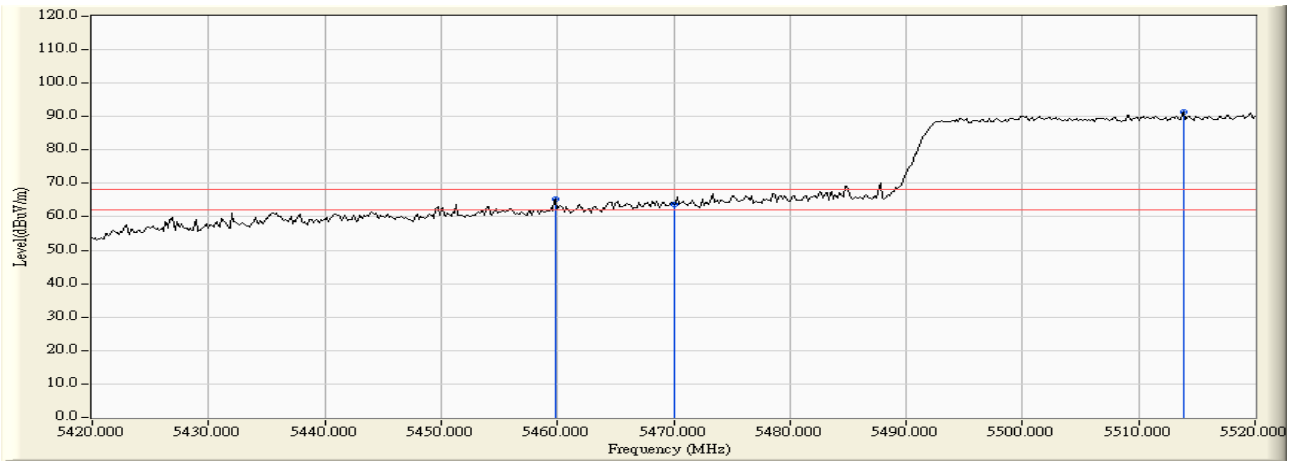
Note:

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.

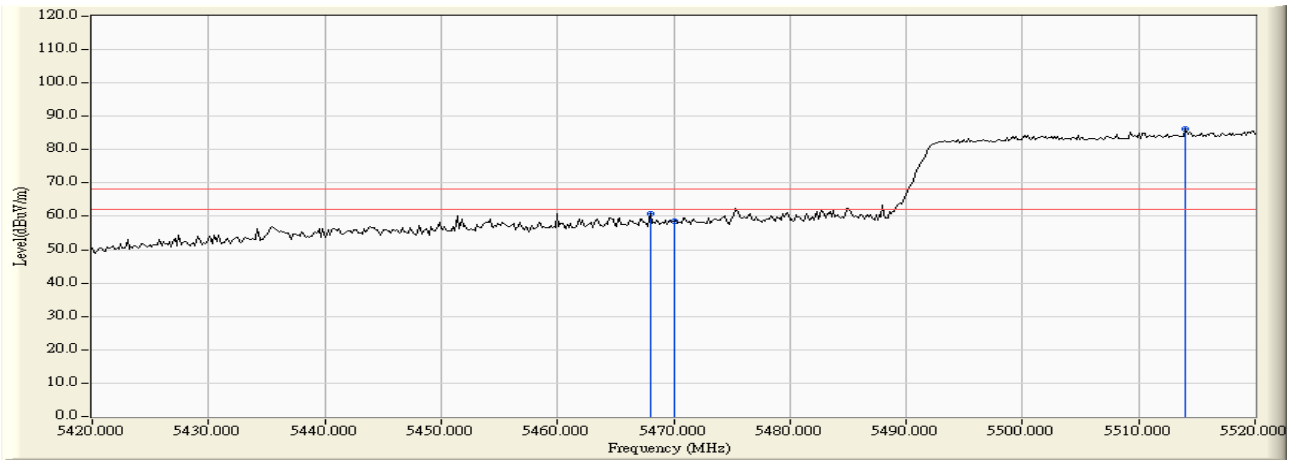
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps) -Channel 106

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5459.855	4.353	60.971	65.323	-2.897	68.220	Pass
Horizontal	5470.000	4.488	59.068	63.556	-4.664	68.220	Pass
Horizontal	5513.913	4.777	86.462	91.239	23.019	68.220	Pass



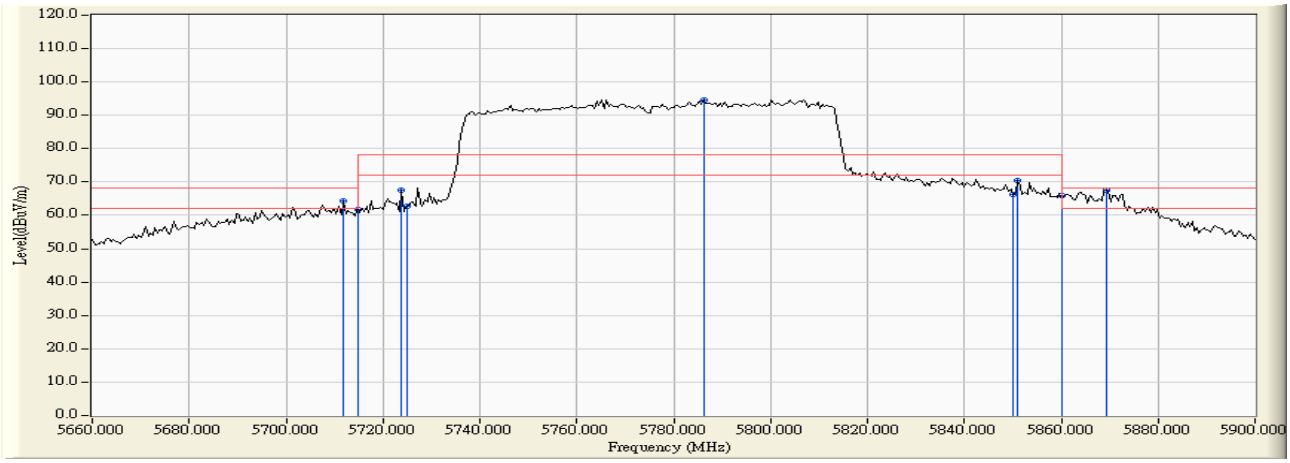
	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5467.971	4.461	56.208	60.669	-7.551	68.220	Pass
Vertical	5470.000	4.488	54.161	58.649	-9.571	68.220	Pass
Vertical	5514.058	4.776	81.432	86.208	17.988	68.220	Pass



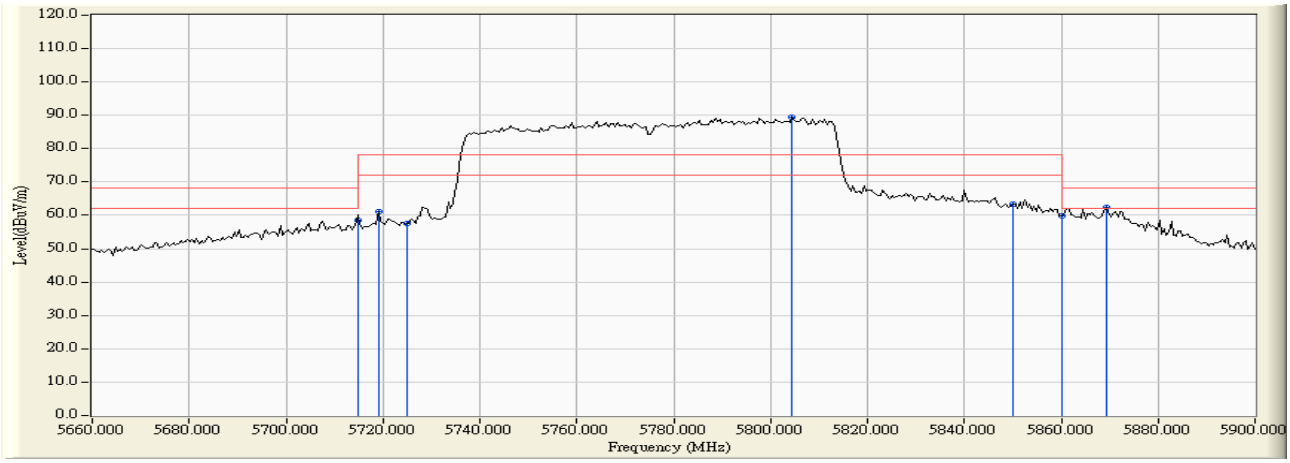
Product : OTT BOX
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps)-Channel 155

RF Radiated Measurement:

	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Horizontal	5711.840	4.652	59.576	64.227	-3.993	68.220	Pass
Horizontal	5715.000	4.652	57.001	61.653	-6.567	68.220	Pass
Horizontal	5723.840	4.654	63.003	67.657	-10.563	78.220	Pass
Horizontal	5725.000	4.654	58.080	62.734	-15.486	78.220	Pass
Horizontal	5786.240	4.662	90.040	94.703	16.483	78.220	Pass
Horizontal	5850.000	4.964	61.419	66.383	-11.837	78.220	Pass
Horizontal	5851.040	4.969	65.480	70.450	-7.770	78.220	Pass
Horizontal	5860.000	5.023	60.818	65.841	-2.379	68.220	Pass
Horizontal	5869.280	5.078	62.480	67.558	-0.662	68.220	Pass



	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBμV)	Measure Level (dBμV /m)	Margin (dB)	Limit (dBμV /m)	Result
Vertical	5715.000	5.994	52.693	58.687	-9.533	68.220	Pass
Vertical	5719.040	5.993	54.990	60.983	-17.237	78.220	Pass
Vertical	5725.000	5.992	51.515	57.508	-20.712	78.220	Pass
Vertical	5804.480	5.984	83.536	89.520	11.300	78.220	Pass
Vertical	5850.000	6.037	57.291	63.328	-14.892	78.220	Pass
Vertical	5860.000	6.047	53.728	59.775	-8.445	68.220	Pass
Vertical	5869.280	6.058	56.259	62.316	-5.904	68.220	Pass



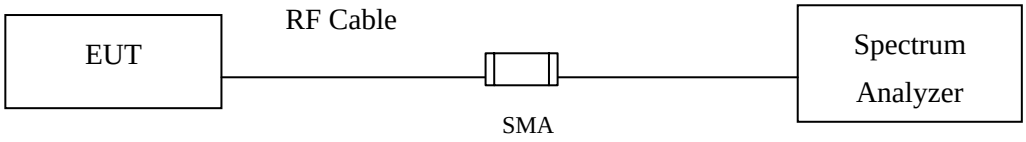
7. Occupied Bandwidth

7.1. Test Equipment

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

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

7.2. Test Setup



7.3. Limits

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

7.4. .Test Procedure

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

7.5. Uncertainty

± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : OTT BOX
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11a-6Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	16450	>500	Pass
157	5785.00	16450	>500	Pass
165	5825.00	16450	>500	Pass

Figure Channel 149:

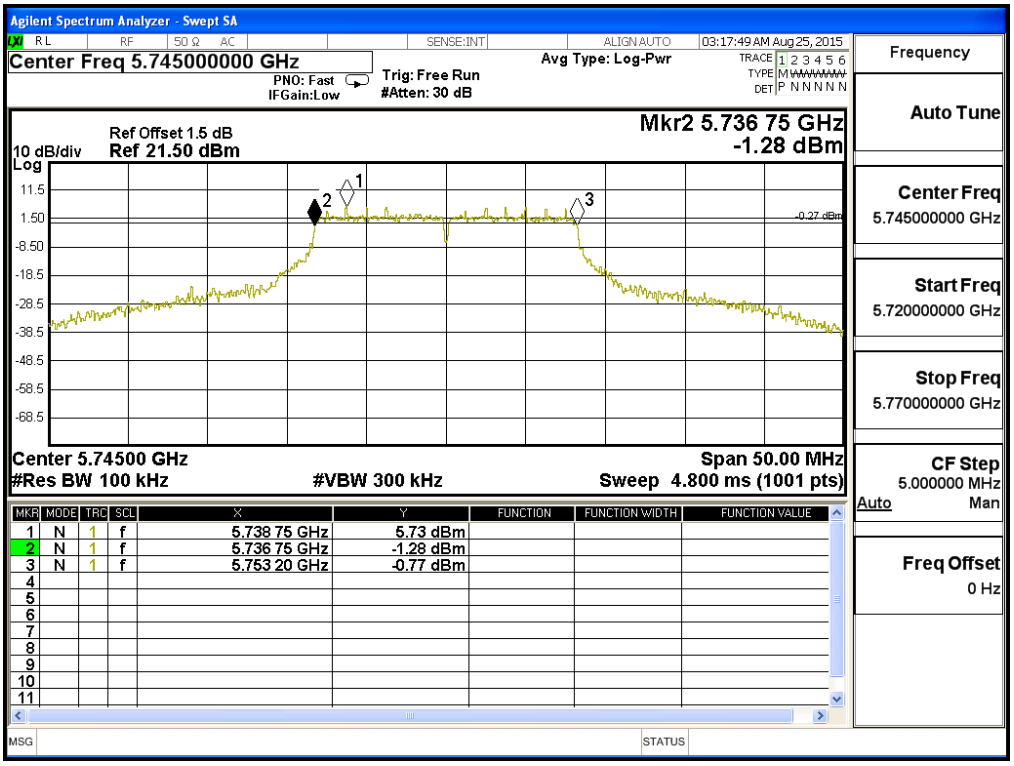


Figure Channel 157:

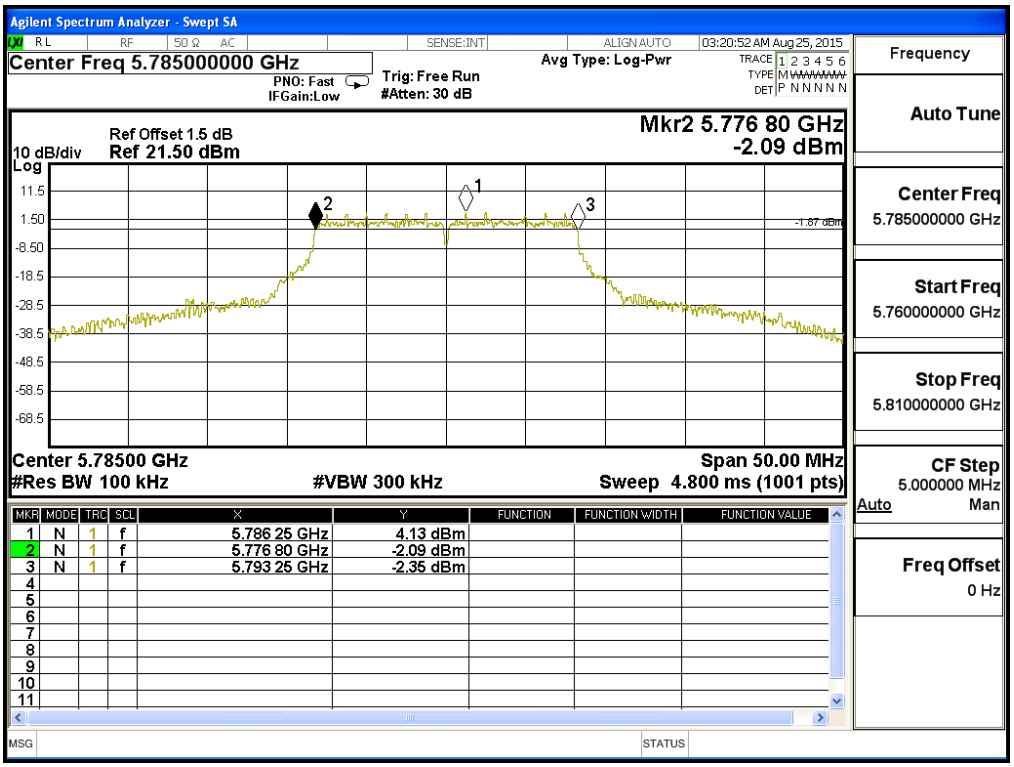
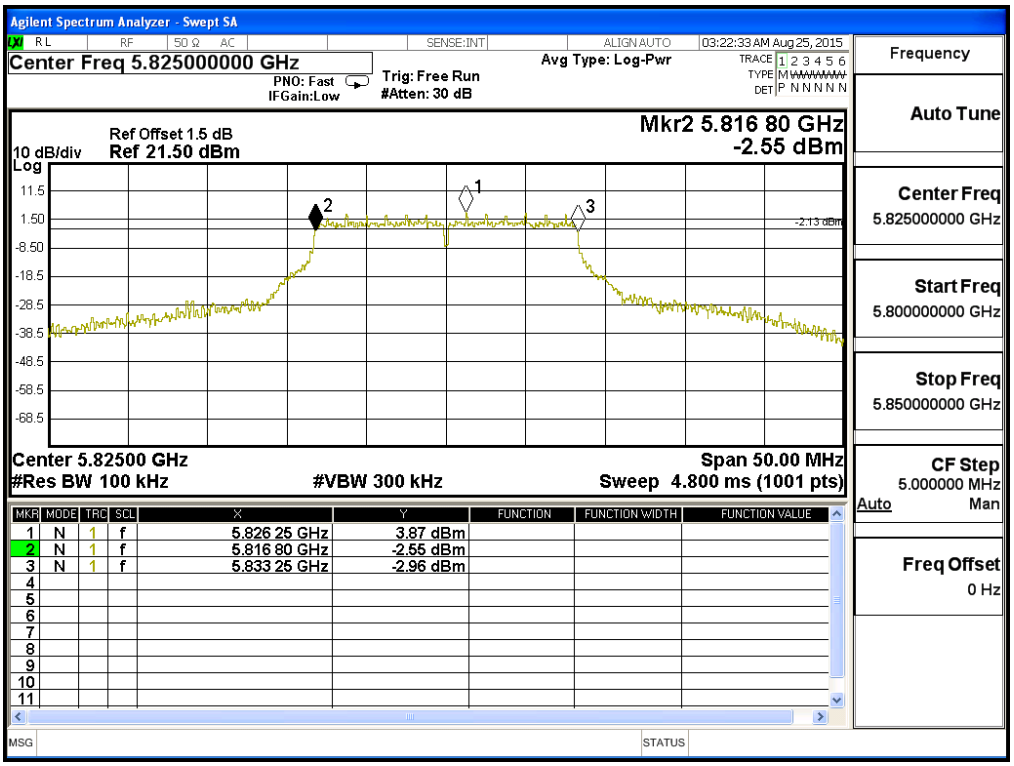


Figure Channel 165:



Product : OTT BOX
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11n-20BW 7.2Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17700	>500	Pass
157	5785.00	17700	>500	Pass
165	5825.00	17650	>500	Pass

Figure Channel 149

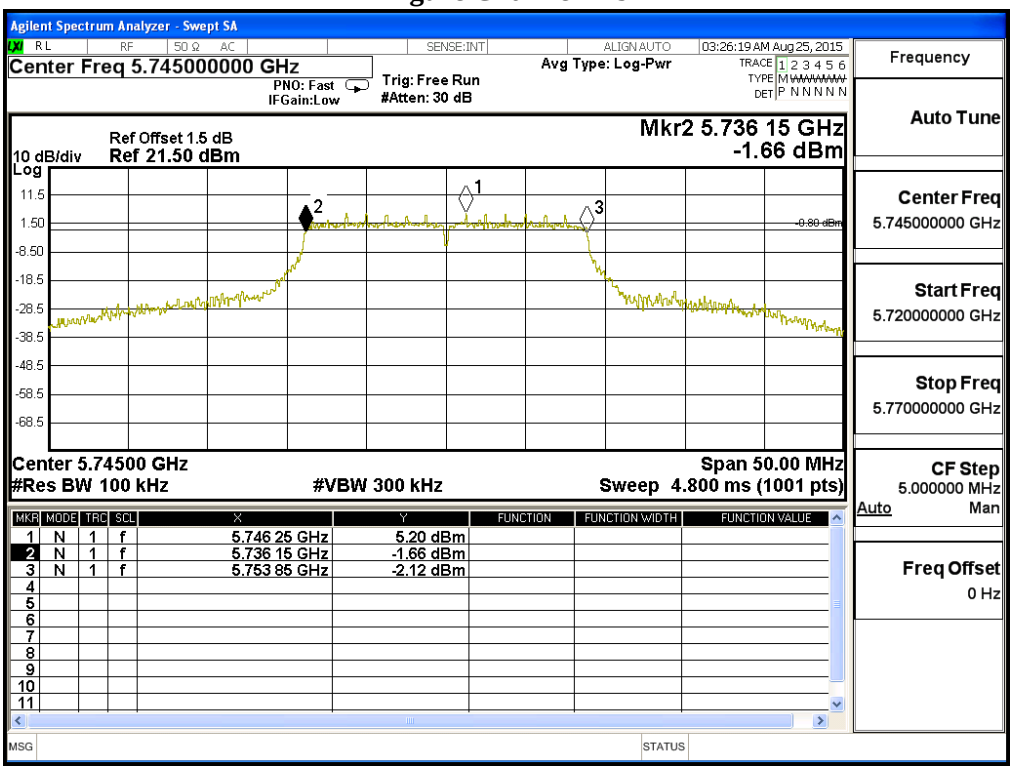


Figure Channel 157

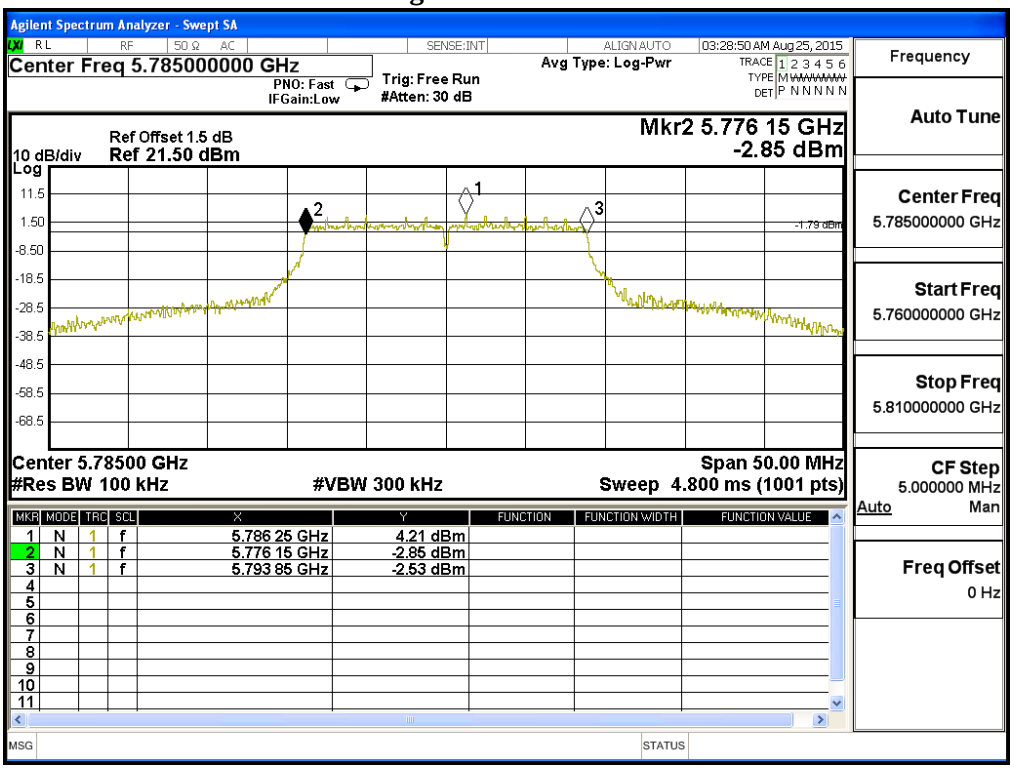
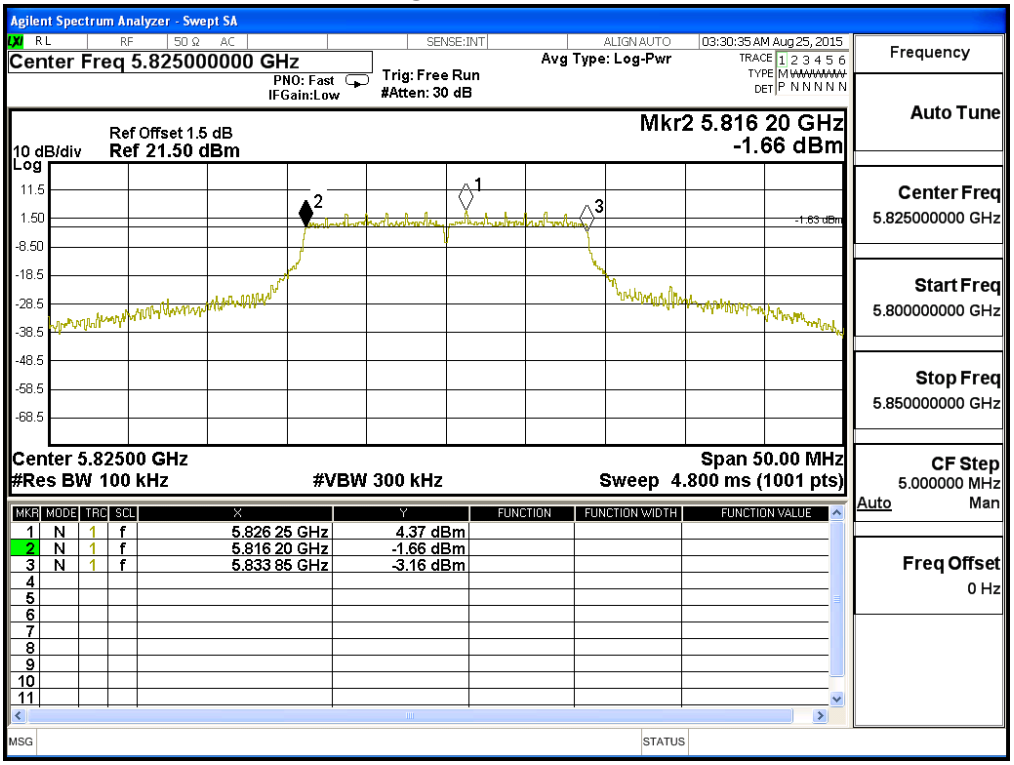


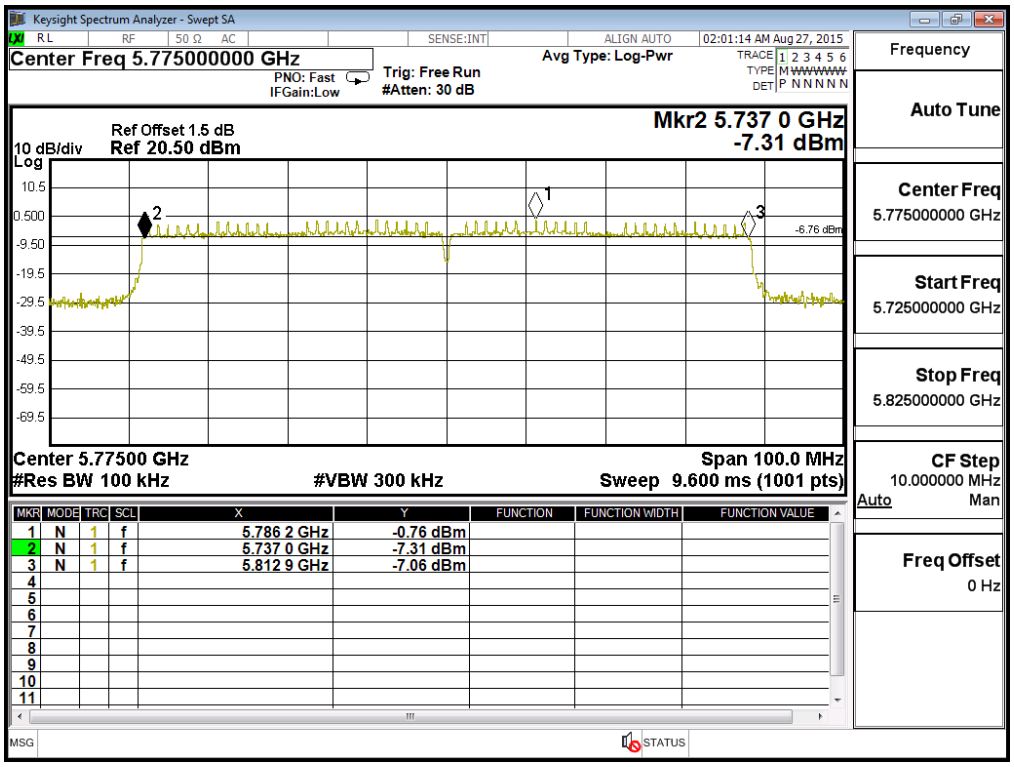
Figure Channel 165



Product : OTT BOX
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 6: Transmit (802.11ac-80BW-32.5Mbps)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
155	5775.00	75900	>500	Pass

Figure Channel 155



8. Frequency Stability

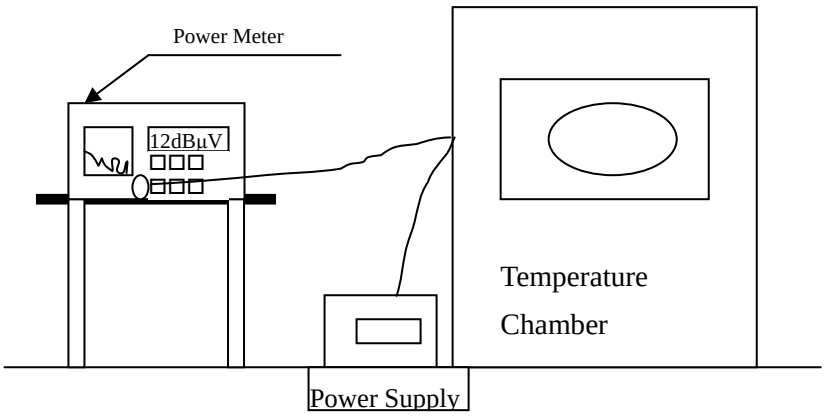
8.1. Test Equipment

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

Note:

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

8.2. Test Setup



8.3. 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

8.4. Test Procedure

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

8.5. Uncertainty

± 150 Hz

8.6. Test Result of Frequency Stability

Product : OTT BOX
Test Item : Frequency Stability
Test Site : Temperature Chamber
Test Mode : Carrier Wave

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (20) oC	Vnom (110)V	36	5180.0000	5180.0032	-0.0032
		38	5190.0000	5190.0021	-0.0021
		44	5220.0000	5220.0036	-0.0036
		46	5230.0000	5230.0021	-0.0021
		48	5240.0000	5240.0014	-0.0014
		52	5260.0000	5260.0036	-0.0036
		54	5270.0000	5270.0047	-0.0047
		60	5300.0000	5300.0035	-0.0035
		62	5310.0000	5310.0038	-0.0038
		64	5320.0000	5320.0041	-0.0041
		100	5500.0000	5500.0043	-0.0043
		102	5510.0000	5510.0047	-0.0047
		110	5550.0000	5550.0035	-0.0035
		116	5580.0000	5580.0038	-0.0038
		134	5670.0000	5670.0044	-0.0044
		140	5700.0000	5700.0048	-0.0048
		149	5745.0000	5745.0065	-0.0065
		157	5785.0000	5785.0032	-0.0032
		165	5825.0000	5825.0014	-0.0014

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50) oC	Vmax (126.5)V	36	5180.0000	5180.0036	-0.0036
		38	5190.0000	5190.0022	-0.0022
		44	5220.0000	5220.0037	-0.0037
		46	5230.0000	5230.0029	-0.0029
		48	5240.0000	5240.0018	-0.0018
		52	5260.0000	5260.0031	-0.0031
		54	5270.0000	5270.0041	-0.0041
		60	5300.0000	5300.0028	-0.0028
		62	5310.0000	5310.0024	-0.0024
		64	5320.0000	5320.0031	-0.0031
		100	5500.0000	5500.0035	-0.0035
		102	5510.0000	5510.0027	-0.0027
		110	5550.0000	5550.0034	-0.0034
		116	5580.0000	5580.0036	-0.0036
		134	5670.0000	5670.0025	-0.0025
		140	5700.0000	5700.0033	-0.0033
		149	5745.0000	5745.0067	-0.0067
		157	5785.0000	5785.0039	-0.0039
		165	5825.0000	5825.0011	-0.0011

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50) °C	Vmin (93.5)V	36	5180.0000	5180.0031	-0.0031
		38	5190.0000	5190.0022	-0.0022
		44	5220.0000	5220.0034	-0.0034
		46	5230.0000	5230.0024	-0.0024
		48	5240.0000	5240.0018	-0.0018
		52	5260.0000	5260.0074	-0.0074
		54	5270.0000	5270.0075	-0.0075
		60	5300.0000	5300.0039	-0.0039
		62	5310.0000	5310.0038	-0.0038
		64	5320.0000	5320.0042	-0.0042
		100	5500.0000	5500.0044	-0.0044
		102	5510.0000	5510.0048	-0.0048
		110	5550.0000	5550.0031	-0.0031
		116	5580.0000	5580.0036	-0.0036
		134	5670.0000	5670.0048	-0.0048
		140	5700.0000	5700.0047	-0.0047
		149	5745.0000	5745.0063	-0.0063
		157	5785.0000	5785.0035	-0.0035
		165	5825.0000	5825.0035	-0.0035

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (0) oC	Vnom (126.5)V	36	5180.0000	5180.0074	-0.0074
		38	5190.0000	5190.0028	-0.0028
		44	5220.0000	5220.0036	-0.0036
		46	5230.0000	5230.0077	-0.0077
		48	5240.0000	5240.0055	-0.0055
		52	5260.0000	5260.0069	-0.0069
		54	5270.0000	5270.0000	0.0000
		60	5300.0000	5300.0032	-0.0032
		62	5310.0000	5310.0036	-0.0036
		64	5320.0000	5320.0034	-0.0034
		100	5500.0000	5500.0038	-0.0038
		102	5510.0000	5510.0027	-0.0027
		110	5550.0000	5550.0025	-0.0025
		116	5580.0000	5580.0035	-0.0035
		134	5670.0000	5670.0028	-0.0028
		140	5700.0000	5700.0033	-0.0033
		149	5745.0000	5745.0063	-0.0063
		157	5785.0000	5785.0085	-0.0085
		165	5825.0000	5825.0035	-0.0035

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (0) oC	Vmax (93.5)V	36	5180.0000	5180.0014	-0.0014
		38	5190.0000	5190.0033	-0.0033
		44	5220.0000	5220.0014	-0.0014
		46	5230.0000	5230.0046	-0.0046
		48	5240.0000	5240.0031	-0.0031
		52	5260.0000	5260.0041	-0.0041
		54	5270.0000	5270.0040	-0.0040
		60	5300.0000	5300.0042	-0.0042
		62	5310.0000	5310.0036	-0.0036
		64	5320.0000	5320.0034	-0.0034
		100	5500.0000	5500.0044	-0.0044
		102	5510.0000	5510.0047	-0.0047
		110	5550.0000	5550.0042	-0.0042
		116	5580.0000	5580.0038	-0.0038
		134	5670.0000	5670.0033	-0.0033
		140	5700.0000	5700.0043	-0.0043
		149	5745.0000	5745.0000	0.0000
		157	5785.0000	5785.0250	-0.0250
		165	5825.0000	5825.0200	-0.0200

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tnom (20) °C	Vnom (110)V	42	5210.0000	5210.0220	-0.0220
		58	5290.0000	5290.0046	-0.0046
		138	5690.0000	5690.0046	-0.0046
		138	5690.0000	5690.0046	-0.0046
		142	5710.0000	5710.0029	-0.0029
		144	5720.0000	5720.0064	-0.0064
		155	5775.0000	5775.0034	-0.0034
Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50) °C	Vmax (126.5)V	42	5210.0000	5210.0024	-0.0024
		58	5290.0000	5290.0046	-0.0046
		138	5530.0000	5530.0016	-0.0016
		138	5690.0000	5690.0064	-0.0064
		142	5710.0000	5710.0044	-0.0044
		144	5720.0000	5720.0037	-0.0037
		155	5775.0000	5775.0029	-0.0029
Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmax (50) °C	Vmin (93.5)V	42	5210.0000	5210.0024	-0.0024
		58	5290.0000	5290.0046	-0.0046
		138	5530.0000	5530.0036	-0.0036
		138	5690.0000	5690.0027	-0.0027
		142	5710.0000	5710.0046	-0.0046
		144	5720.0000	5720.0033	-0.0033
		155	5775.0000	5775.0016	-0.0016

Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmin (0) °C	Vmax (126.5)V	42	5210.0000	5210.0024	-0.0024
		58	5290.0000	5290.0046	-0.0046
		138	5530.0000	5530.0025	-0.0025
		138	5690.0000	5690.0017	-0.0017
		142	5710.0000	5710.0039	-0.0039
		144	5720.0000	5720.0047	-0.0047
		155	5775.0000	5775.0046	-0.0046
Test Conditions		Channel	Frequency (MHz)	Frequency (MHz)	△F (MHz)
Tmin (0) °C	Vmin (93.5)V	42	5210.0000	5210.0024	-0.0024
		58	5290.0000	5290.0046	-0.0046
		138	5530.0000	5530.0026	-0.0026
		138	5690.0000	5690.0021	-0.0021
		142	5710.0000	5710.0036	-0.0036
		144	5720.0000	5720.0039	-0.0039
		155	5775.0000	5775.0045	-0.0045

9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs