Test Report

Industry Canada RSS-Gen Issue 3/RSS-210 Issue 8
FCC Part15 Subpart E

Product Name	:	IP-STB
Model No.	:	3400, 3420
FCC ID	:	TC2-R1005
IC	:	5959A-R1005

Applicant	:	Roku Inc.
Address	:	12980 Saratoga Ave, Suite D Saratoga, CA 95070

Date of Receipt	:	25/06/2012
Test Date	:	26/06/2012~19/09/2012
Issued Date	:	20/09/2012
Report No.	:	126S063R-RF-US-P09V01
Report Version	:	V2.1

Test Report Certification

Issued Date : 20/09/2012
Report No. : 126S063R-RF-US-P09V01

QuieTek

Product Name	:	IP-STB
Applicant	:	Roku Inc.
Address	:	12980 Saratoga Ave, Suite D Saratoga, CA 95070
Manufacturer	:	Ambit Mircosystems (Shanghai) LTD.
Address	:	1925, Nanle Road, Songjiang Export Processing Zone, Shanghai, China 201613
Model No.	:	3400, 3420
FCC ID	:	TC2-R1005
IC	:	5959A-R1005
EUT Voltage	:	5V
Brand Name	:	Roku
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart E: 2011 ANSI C63.4: 2009; ANSI C63.10: 2009 Industry Canada RSS-Gen Issue 3/RSS-210 Issue 8
Test Result	:	Complied
Performed Location	:	Suzhou EMC Laboratory No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., Suzhou, China TEL: +86-512-6251-5088 / FAX: +86-512-6251-5098 FCC Registration Number: 800392; IC Lab Code: 4075B

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(Manager: Marlin Chen)

Laboratory Information

We, **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted(audited or listed) by the following related bodies in compliance with ISO 17025, EN 45001 and specified testing scope:

Taiwan R.O.C.	**:**	**BSMI, NCC, TAF**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**
China	**:**	**CNAS**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site :http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

TABLE OF CONTENTS

1. General Information

1.1. EUT Description

Product Name	IP-STB
Brand Name	Roku
Model No.	3400, 3420
EUT Voltage	5V
Frequency Range	**For 2.4GHz Band** 802.11b/g/n(20MHz): 2412~2462MHz 802.11n(40MHz): 2422~2452MHz **For 5.0GHz Band** 802.11a/n(20MHz): 5180~5240MHz, 5745~5825MHz 802.11n(40MHz): 5190~5230MHz, 5755~5795MHz
Channel Number	For 2.4GHz Band 802.11b/g/n(20MHz): 11 802.11n(40MHz): 7 For 5.0GHz Band 802.11a/n(20MHz): 9 802.11n(40MHz): 4
Type of Modulation	802.11b: DSSS
	802.11a/g/n: OFDM
Data Rate	802.11a/g: 6/9/12/18/24/36/48/54 Mbps
	802.11b: 1/2/5.5/11 Mbps
	802.11n: up to 300 Mbps
Channel Control	Auto
Antenna Delivery	2*Tx + 2*Rx
Antenna Type	Reference to Antenna List
Peak Antenna Gain	Reference to Antenna List

Note: 3400, 3420 has the same PCB board, and just has different housing colors, 3420 is black, while 3400 is purple.

For 2.4GHz Band

802.11b/g/n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz	04	2427 MHz
05	2432 MHz	06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	10	2457 MHz	11	2462 MHz	N/A	N/A
802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
03	2422 MHz	04	2427 MHz	05	2432 MHz	06	2437 MHz
07	2442 MHz	08	2447 MHz	09	2452 MHz	N/A	N/A

For 5.0GHz Band

802.11a/n(20MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
36	5180 MHz	40	5200 MHz	44	5220 MHz	48	5240 MHz
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz
165	5825 MHz	N/A	N/A	N/A	N/A	N/A	N/A
802.11n(40MHz) Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz	151	5755 MHz	159	5795 MHz

802.11a/b/g/n Antenna List

Antenna	Manufacturer	Model No.	Peak Gain
PIFA Antenna	Cortec Technology Inc.	N/A	2dBi for 2.4GHz and 5GHz

1.2. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Transmit by 802.11a
Mode 2: Transmit by 802.11n (20MHz)
Mode 3: Transmit by 802.11n (40MHz)

Note:

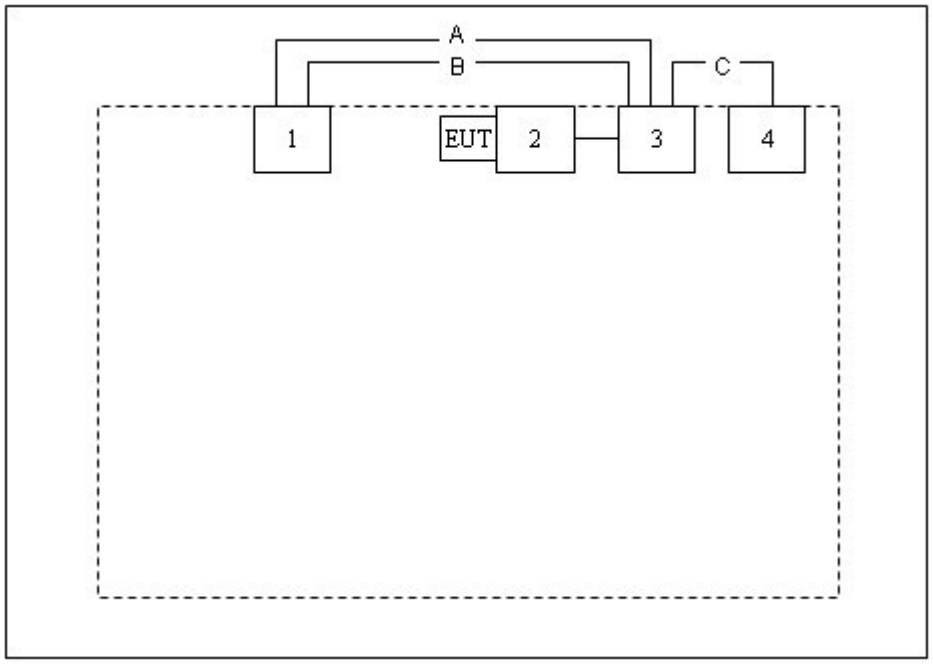
1. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 126S063R-RF-CE-P01V02.

1.3. Tested System Details

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

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook	ASUS	N80V	8BN0AS226971468	Non-Shielded, 1.8m
2	PCB boarol	N/A	N/A	N/A	N/A
3	Dongle	N/A	N/A	N/A	N/A
4	LCD Monitor	DELL	ST2420Lb	CN-0VTTD2-74261-17P-04TU	N/A

1.4. Configuration of Tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	RS232 Cable	Shielded, 0.8m
B	USB Cable	Shielded, 0.5m
C	HDMI Cable	Shielded, 0.8m

1.5. EUT Exercise Software

1	Setup the EUT and simulators as shown on above.
2	Turn on the power of equipment.
3	Execute some commands on the PC provided by applicant.
4	Setup the test channel and the test mode press ok to start the continue transmit.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.207	Yes	No
Radiated Emission	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.209	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2011 15.215(c)	Yes	No
26dB Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.407(a)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.407(a)	Yes	No
Peak Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.407(a)	Yes	No
Peak Excursion	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.407(a)(6)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.205, 15.407(b)	Yes	No
Frequency Stability	FCC CFR Title 47 Part 15 Subpart C: 2007 Section 15.407(g)	Yes	No

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	RSS-Gen Issue 3 December 2010 Table 2	Yes	No
Radiated Emission	RSS-210 Issue 8 December 2010 Section 2.7 Table 2 and Table 3	Yes	No
99% Occupied Bandwidth	RSS-Gen Issue 3 December 2010 Section 4.6.1 and 4.6.2	Yes	No
Power Output	RSS-210 Issue 8 December 2010 A9.2	Yes	No
Peak Power Spectral Density	RSS-210 Issue 8 December 2010 A9.2/A9.5	Yes	No
Radiated Emission Band Edge	RSS-210 Issue 8 December 2010 A9.3	Yes	No
Frequency Stability	RSS-210 Issue 8 December 2010 A9.5(5)	Yes	No

2.2. Test Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950-1000

3. Conducted Emission

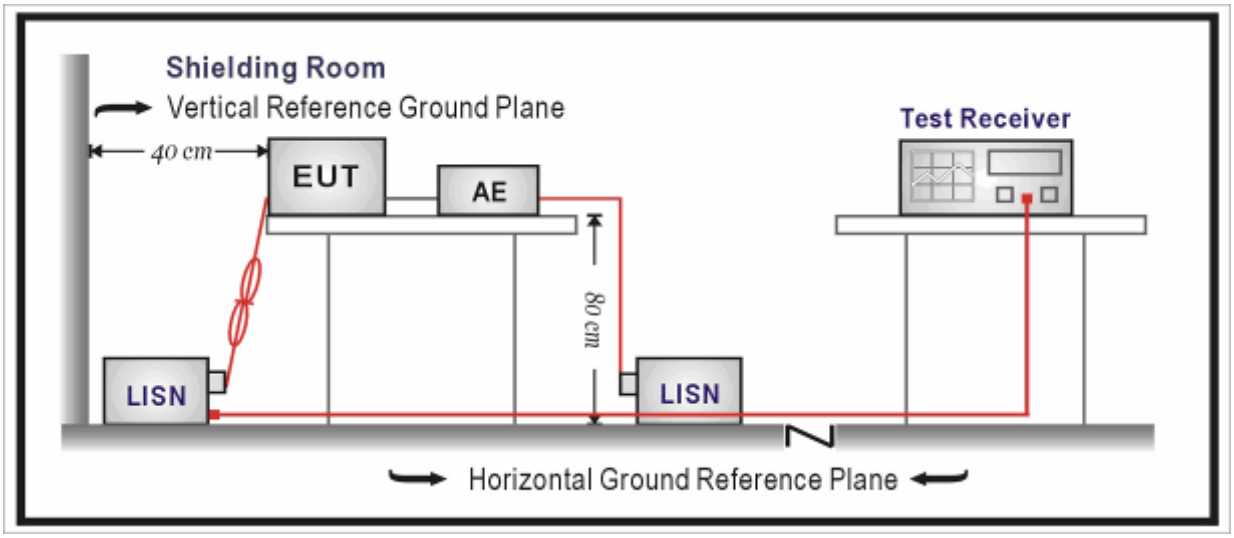
3.1. Test Equipment

Conducted Emission / TR-1

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100726	2013.04.18
Two-Line V-Network	R&S	ENV216	100043	2013.04.18
Two-Line V-Network	R&S	ENV216	100044	2013.09.07
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013.05.04
50ohm Termination	SHX	TF2	07081401	2012.09.22
Temperature/Humidity Meter	zhicheng	ZC1-2	TR1-TH	2013.01.10

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

3.2. Test Setup



3.3. Limit

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

Note 1: The lower limit shall apply at the transition frequencies.

Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.

3.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 & ANSI C63.10: 2009.

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

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

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

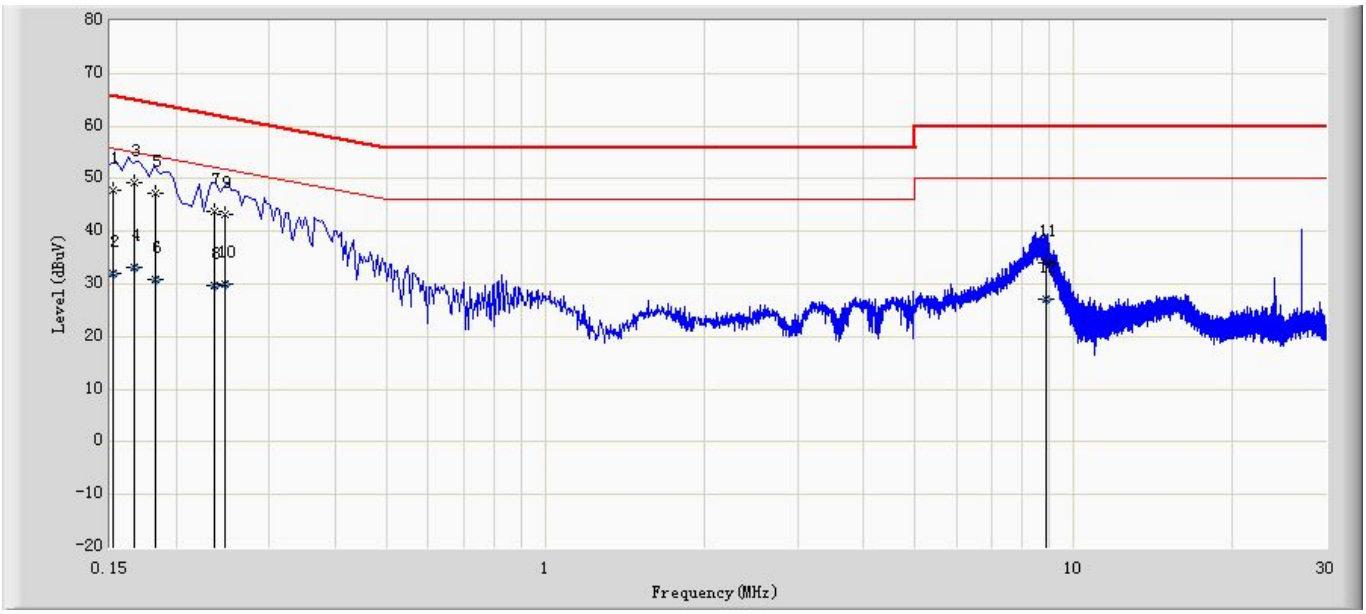
Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

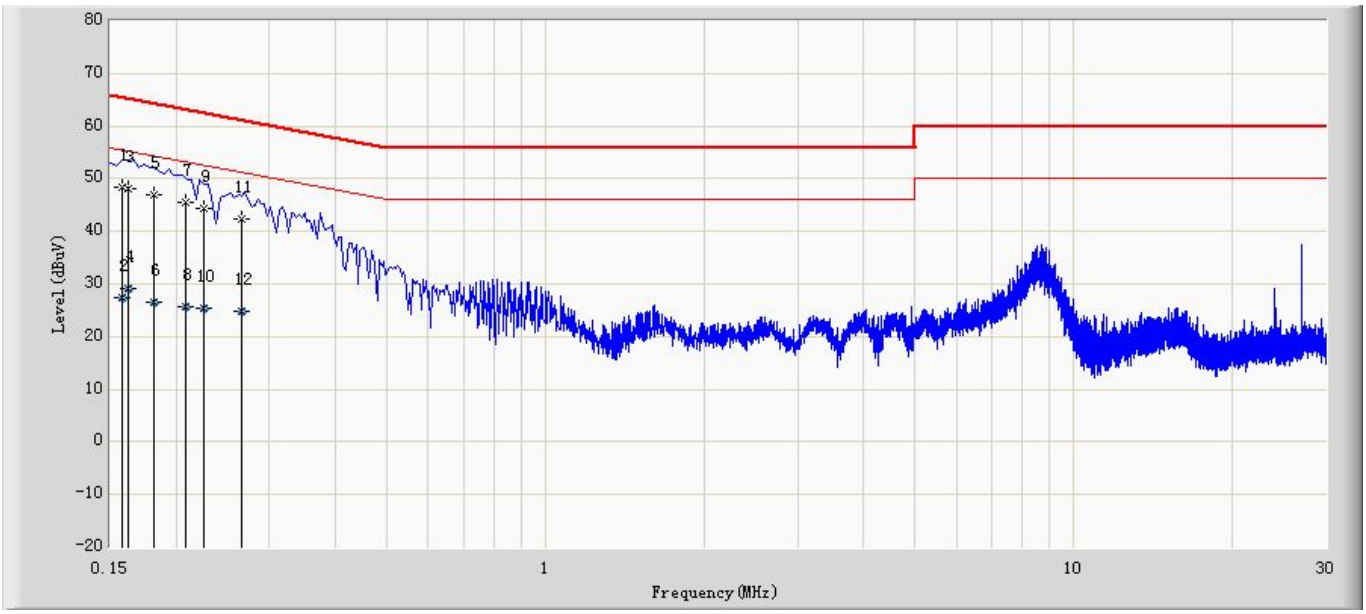
3.6. Test Result

Engineer: Jackzhang	
Site: TR1	Time: 2012/07/04 - 20:32
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Line
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.152	47.872	38.025	-18.018	65.890	9.848	QP
2		0.152	32.137	22.290	-23.753	55.890	9.848	AV
3	*	0.167	49.280	39.431	-15.828	65.108	9.850	QP
4		0.167	33.179	23.330	-21.929	55.108	9.850	AV
5		0.183	47.272	37.415	-17.076	64.348	9.857	QP
6		0.183	30.895	21.038	-23.453	54.348	9.857	AV
7		0.236	43.935	34.070	-18.301	62.236	9.865	QP
8		0.236	29.815	19.949	-22.421	52.236	9.865	AV
9		0.248	43.286	33.420	-18.538	61.824	9.867	QP
10		0.248	29.956	20.089	-21.868	51.824	9.867	AV
11		8.891	34.165	24.195	-25.835	60.000	9.970	QP
12		8.891	27.130	17.160	-22.870	50.000	9.970	AV

Engineer: Jackzhang	
Site: TR1	Time: 2012/07/04 - 20:32
Limit: FCC_Part15.207_CE_AC Power_ClassB	Margin: 0
Probe: ENV216_101044(0.009-30MHz)	Polarity: Neutral
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1	



No	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV)	Factor (dB)	Type
1		0.158	48.365	38.375	-17.203	65.568	9.991	QP
2		0.158	27.426	17.436	-28.142	55.568	9.991	AV
3	*	0.162	48.241	38.255	-17.120	65.361	9.986	QP
4		0.162	29.015	19.029	-26.346	55.361	9.986	AV
5		0.181	47.079	37.132	-17.361	64.440	9.947	QP
6		0.181	26.491	16.544	-27.949	54.440	9.947	AV
7		0.208	45.636	35.721	-17.649	63.285	9.915	QP
8		0.208	25.796	15.881	-27.489	53.285	9.915	AV
9		0.226	44.295	34.382	-18.300	62.595	9.913	QP
10		0.226	25.476	15.564	-27.119	52.595	9.913	AV
11		0.267	42.293	32.360	-18.918	61.211	9.933	QP
12		0.267	24.836	14.903	-26.375	51.211	9.933	AV

4. Radiated Emission

4.1. Test Equipment

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2012.11.22
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012.10.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2013.05.07

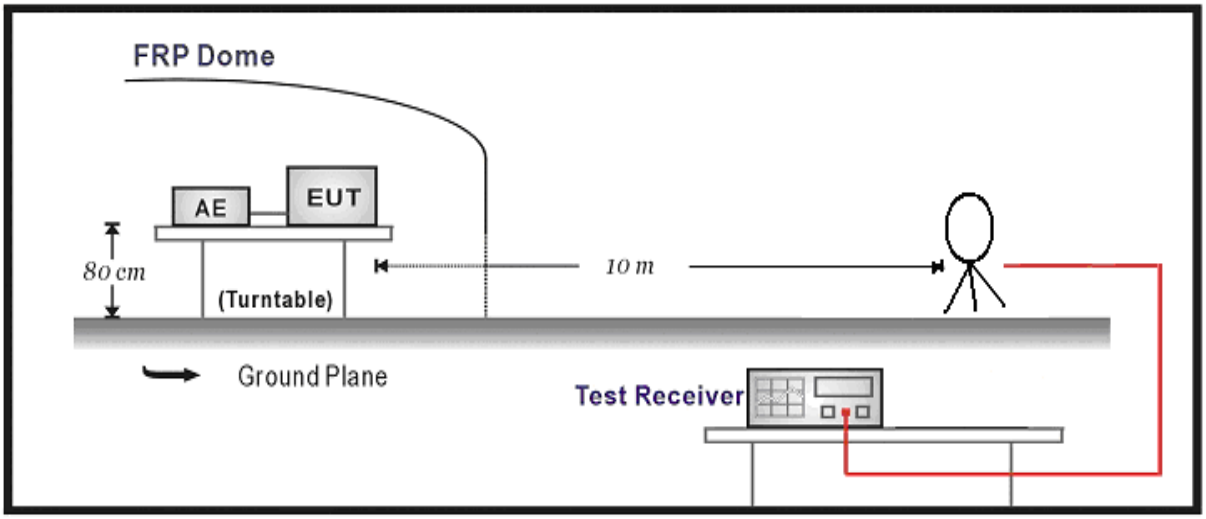
Radiated Emission / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	QuieTek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2014.06.08
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2013.01.10

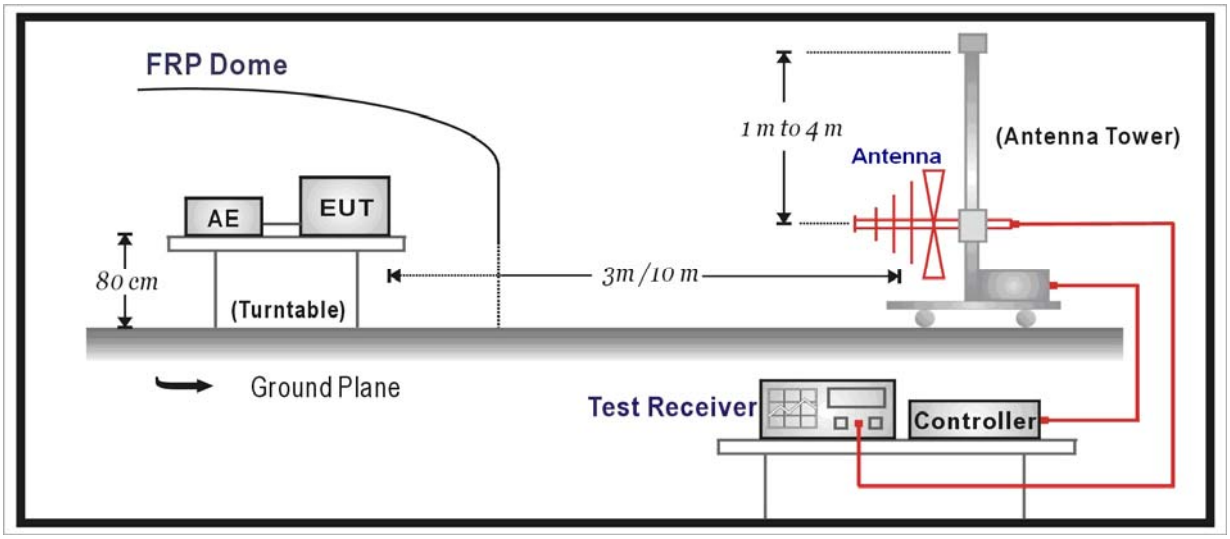
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

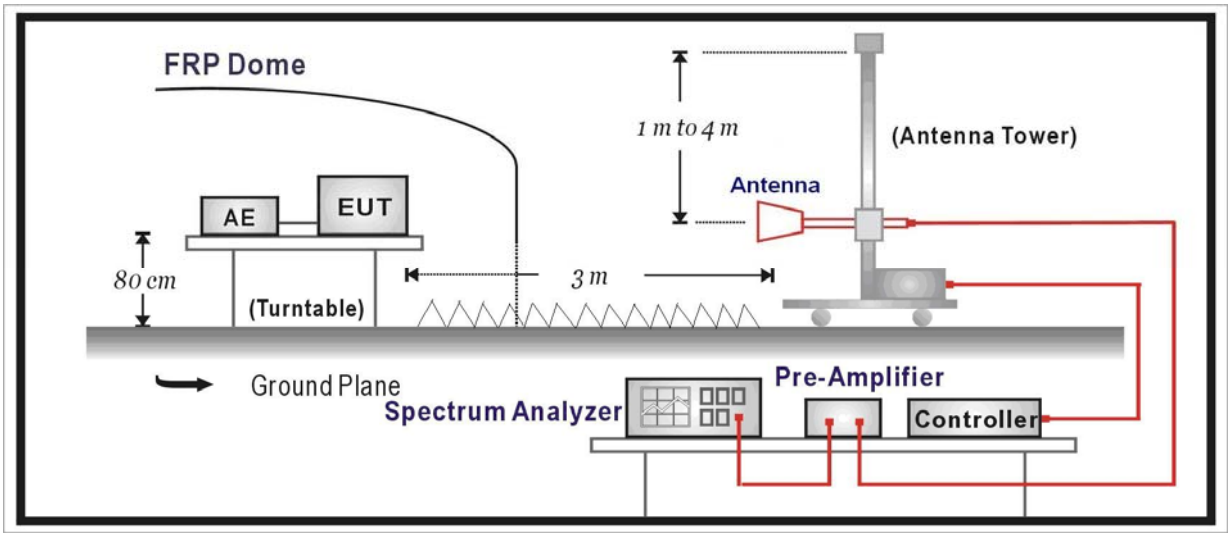
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limit

FCC Part 15 Subpart C Paragraph 15.209		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2009 & ANSI C63.10: 2009 & KDB 789033. The EUT is placed on a turn table which is 0.8 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 from 1 meter to 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 C63.4:2009 on radiated measurement.

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

The frequency range from 30MHz to 10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 60~10 degrees for H-plane and 90~10 degrees for E-plane.

4.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

below 1G is defined as ± 3.8 dB

4.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

802.11a

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 0	36	V	5178.9	106.2	-8.2	98.0	Fundamental	/	PK
		H	256.01	6.3	19.7	26.0	46	-20.0	QP
		H	299.781	8.4	20.5	28.9	46	-17.1	QP
		H	13000.0	38.9	9.8	48.7	54(Note3)	-5.3	PK
		H	14500.0	40.3	9.4	49.7	54(Note3)	-4.3	PK
		H	15543.5	47.5	7.2	54.7	74	-19.3	PK
		H	15543.2	39.3	7.2	46.5	54	-7.5	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	40	V	5200.0	108.8	-8.2	100.6	Fundamental	/	PK
		H	303.176	11.1	20.6	31.7	46	-14.3	QP
		H	565.319	5.4	26.6	32.0	46	-14.0	QP
		H	13000.0	38.9	9.8	48.7	54(Note3)	-25.3	PK
		H	12000.0	39.1	8.5	47.6	54	-6.4	PK
		H	15603.0	46.5	7.4	53.9	54	-0.1	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	48	V	5239.9	108.8	-8.2	100.5	Fundamental	/	PK
		H	207.146	6.2	15.9	22.1	43.5	-21.4	QP
		H	299.66	8.9	20.5	29.4	46	-16.6	QP
		H	13000.0	38.9	9.8	48.7	54(Note3)	-5.3	PK
		H	14500.0	40.2	9.4	49.6	54(Note3)	-4.4	PK
		H	15713.5	47.9	7.2	55.1	74	-18.9	PK
		H	15713.6	38	7.2	45.2	54	-8.8	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
Chain 1	36	V	5179.9	109.5	-8.2	101.3	Fundamental	/	PK
		H	303.176	11.1	20.6	31.7	46	-14.3	QP
		H	565.319	5.4	26.6	32.0	46	-14.0	QP

		V	13000.0	38.6	9.8	48.4	54(Note3)	-5.6	PK
		V	12000.0	39.1	8.5	47.6	54(Note3)	-6.4	PK
		V	15543.5	49.9	7.2	57.1	74	-16.9	PK
		V	15543.6	38.2	7.2	45.4	54	-8.6	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	40	V	5200.0	109.3	-8.2	101.1	Fundamental	/	PK
		H	301.115	11.5	20.5	32.0	46	-14.0	QP
		H	565.319	5.4	26.6	32.0	46	-14.0	QP
		V	13000.0	39.1	9.8	48.9	54(Note3)	-5.1	PK
		V	12000.0	39	8.5	47.5	54(Note3)	-6.5	PK
		V	15603.0	51	7.4	58.4	74	-15.6	PK
		V	15603.2	40.3	7.4	47.7	54	-6.3	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	48	V	5239.9	109.3	-8.2	98.9	Fundamental	/	PK
		H	201.447	7.3	16.1	23.4	43.5	-20.1	QP
		H	299.66	8.9	20.5	29.4	46	-16.6	QP
		H	13000.0	38.7	9.8	48.5	54(Note3)	-5.5	PK
		H	14500.0	40.1	9.4	49.5	54(Note3)	-4.5	PK
		H	15722.0	46.5	7.2	53.7	54(Note3)	-0.3	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

802.11n(20MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 0	36	V	5180.2	109.3	-8.2	97.5	Fundamental	/	PK
		H	544.343	5.3	26.5	31.8	46	-14.2	QP
		H	900	2.1	29.2	31.3	46	-14.7	QP
		V	13000.0	39.5	9.8	49.3	54(Note3)	-4.7	PK
		V	14500.0	40.5	9.4	49.9	54(Note3)	-4.1	PK
		V	15535.0	45.9	7.2	53.1	54(Note3)	-0.9	PK

		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	40	V	5200.0	105.9	-8.2	97.7	Fundamental	/	PK
		H	544.343	5.3	26.5	31.8	46	-14.2	QP
		H	900	2.8	29.2	32.0	46	-14.0	QP
		H	13000.0	39.5	9.8	49.3	54(Note3)	-4.7	PK
		H	12000.0	39.6	8.5	48.1	54(Note3)	-5.9	PK
		H	15594.5	48.9	7.4	56.3	74	-17.7	PK
		H	15593.5	39.2	7.4	46.6	54	-7.4	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	48	V	5239.7	109.3	-8.2	99.0	Fundamental	/	PK
		H	298.569	11.1	20.4	31.5	46	-14.5	QP
		H	606.18	6.0	27.0	33.0	46	-13.0	QP
		H	13000.0	38.9	9.8	48.7	54(Note3)	-5.3	PK
		H	14500.0	40.2	9.4	49.6	54(Note3)	-4.4	PK
		H	15722.0	47.2	7.2	54.4	74	-19.6	PK
		H	15722.3	36.2	7.2	43.4	54	-10.6	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
Chain 1	36	V	5179.2	114.0	-8.2	100.0	Fundamental	/	PK
		H	299.902	5.8	20.5	26.3	46	-19.7	QP
		H	548.829	5.1	26.6	31.7	46	-14.3	QP
		V	13000.0	39.4	9.8	49.2	54(Note3)	-4.8	PK
		V	14500.0	40.2	9.4	49.6	54(Note3)	-4.4	PK
		V	15535.0	49.5	7.2	56.7	74	-17.3	PK
		V	15535.2	38.3	7.2	45.5	54	-8.5	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	40	V	5200.0	107.9	-8.2	99.7	Fundamental	/	PK
		H	298.205	6.8	20.4	27.2	46	-18.8	QP
		H	571.503	5.2	26.6	31.8	46	-14.2	QP
		V	13000.0	39.6	9.8	49.4	54(Note3)	-4.6	PK
		V	12000.0	38.8	8.5	47.3	54(Note3)	-6.7	PK
		V	15603.0	49.2	7.4	56.6	74	-17.4	PK
		V	15610.1	36.8	7.3	44.1	54	-9.9	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	48	V	5239.7	114.5	-8.2	98.7	Fundamental	/	PK
		H	303.661	6.9	20.6	27.5	46	-18.5	QP
		H	571.503	5.2	26.6	31.8	46	-14.2	QP
		V	13000.0	38.5	9.8	48.3	54(Note3)	-5.7	PK

		V	14500.0	40.7	9.4	50.1	54(Note3)	-3.9	PK
		V	15722.0	48.9	7.2	56.1	74	-17.9	PK
		V	15722.4	38.9	7.2	46.1	54	-7.9	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
Chain 0+1	36	V	5179.5	111.6	-8.2	100.2	Fundamental	/	PK
		H	300	5.0	20.5	25.5	46	-20.5	QP
		H	900	0.8	29.2	30.0	46	-16.0	QP
		V	13000.0	38.8	9.8	48.6	54(Note3)	-5.4	PK
		V	12000.0	39.3	8.5	47.8	54(Note3)	-6.2	PK
		V	15543.2	39.2	7.2	46.4	54(Note3)	-7.6	AV
		V	15543.5	52.8	7.2	60	74	-14.0	PK
		H	24000.0	59.1	-8.9	50.2	54	-3.8	PK
	40	V	5200.0	108.2	-8.2	99.9	Fundamental	/	PK
		H	300	2.4	20.5	22.9	46	-23.1	QP
		H	900	3.0	29.2	32.2	46	-13.8	QP
		V	13000.0	39.3	9.8	49.1	54(Note3)	-4.9	PK
		V	12000.0	38.6	8.5	47.1	54(Note3)	-6.9	PK
		V	15603.0	46.8	7.4	54.2	74	-19.8	PK
		V	15603.1	37.3	7.4	44.7	54	-9.3	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	48	V	5239.2	109.3	-8.2	100.4	Fundamental	/	PK
		H	300	5.8	20.5	26.3	46	-19.7	QP
		H	900	0.7	29.2	29.9	46	-16.1	QP
		V	13000.0	38.9	9.8	48.7	54(Note3)	-5.3	PK
		V	12000.0	38.4	8.5	46.9	54(Note3)	-7.1	PK
		V	15722.0	45.6	7.2	52.8	54(Note3)	-1.2	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

802.11n(40MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector

Chain 0	38	V	5187.2	109.3	-8.2	94.1	Fundamental	/	PK
		H	300	5.0	20.5	25.5	46	-20.5	QP
		H	900	2.1	29.2	31.3	46	-14.7	QP
		H	13000.0	38.9	9.8	48.7	54(Note3)	-5.3	PK
		H	12000.0	38.8	8.5	47.3	54(Note3)	-6.7	PK
		H	15577.5	45.8	7.4	53.2	54(Note3)	-0.8	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	46	V	5225.9	105.9	-8.2	94.4	Fundamental	/	PK
		H	300	6.9	20.5	27.4	46	-18.6	QP
		H	900	1.6	29.2	30.8	46	-15.2	QP
		H	13000.0	38.6	9.8	48.4	54(Note3)	-5.6	PK
		H	14500.0	40.1	9.4	49.5	54(Note3)	-4.5	PK
		H	15679.5	45.1	7.2	52.3	54(Note3)	-1.7	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
Chain 1	38	V	5187.6	109.3	-8.2	91.7	Fundamental	/	PK
		H	300	5.7	20.5	26.2	46	-19.8	QP
		H	900	1.9	29.2	31.1	46	-14.9	QP
		V	13000.0	38.7	9.8	48.5	54(Note3)	-5.5	PK
		V	12000.0	38.6	8.5	47.1	54(Note3)	-6.9	PK
		V	15577.5	48.9	7.4	56.3	74	-17.7	PK
		V	15577.3	38.3	7.4	45.7	54	-8.3	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	46	V	5231.8	109.3	-8.2	91.2	Fundamental	/	PK
		H	300	4.1	20.5	24.6	46	-21.4	QP
		H	900	1.5	29.2	30.7	46	-15.3	QP
		V	13000.0	38.8	9.8	48.6	54(Note3)	-5.4	PK
		V	14500.0	40.8	9.4	50.2	54(Note3)	-3.8	PK
		V	15696.5	49.4	7.2	56.6	74	-17.4	PK
		V	15696.5	37.3	7.2	44.5	54	-9.5	AV
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
Chain 0+1	38	V	5187.9	114.5	-8.2	91.0	Fundamental	/	PK
		H	300	5.2	20.5	25.7	46	-20.3	QP
		H	900	1.9	29.2	31.1	46	-14.9	QP
		H	13000.0	38.3	9.8	48.1	54(Note3)	-5.9	PK
		H	12000.0	39	8.5	47.5	54(Note3)	-6.5	PK
		H	15569.0	49.3	7.3	56.6	74	-17.4	PK
		H	15569.3	38.4	7.3	45.7	54	-8.3	AV

		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK
	46	V	5226.7	109.3	-8.2	93.8	Fundamental	/	PK
		H	300	5.7	20.5	26.2	46	-19.8	QP
		H	900	2.6	29.2	31.8	46	-14.2	QP
		V	13000.0	38.8	9.8	48.6	54(Note3)	-5.4	PK
		V	14500.0	40.4	9.4	49.8	54(Note3)	-4.2	PK
		V	15688.0	45.4	7.2	52.6	54(Note3)	-1.4	PK
		H	24000.0	59.1	-8.9	50.2	54(Note3)	-3.8	PK

Note: 1. Measure Level = Reading Level + Factor.

2. The test trace is same as the ambient noise (the test frequency range: 9kHz~30MHz, 18GHz~25GHz), therefore no data appear in the report.

3. This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

5. Operation Frequency Range of 20dB Bandwidth

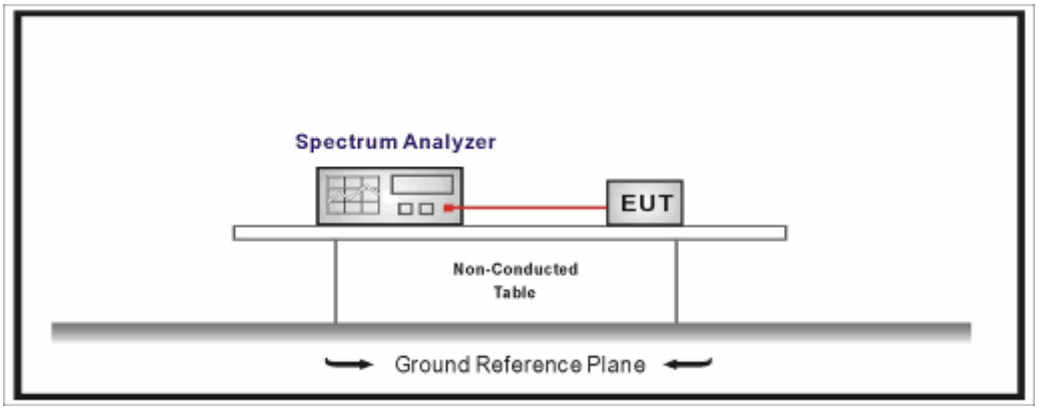
5.1. Test Equipment

Operation Frequency Range of 20dB Bandwidth /TR8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

5.2. Test Setup



5.3. Limit

20 dB bandwidth of the emission is contained within the operation frequency band. FCC Part15.215(c).

5.4. Test Procedure

The EUT was tested according to UNII test procedure of ANSI C63.10: 2009 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.
Set RBW = 100 kHz, Span greater than RBW.

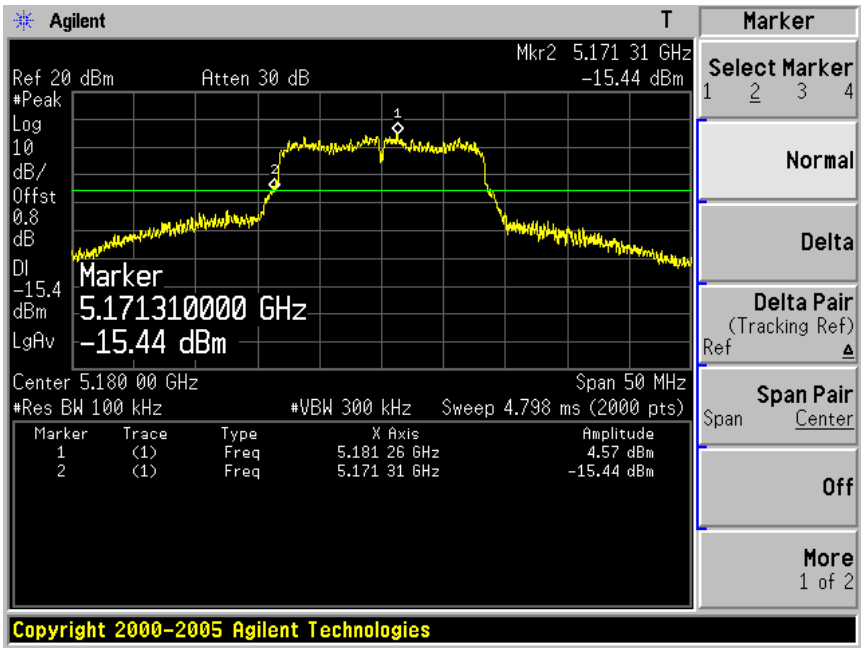
5.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

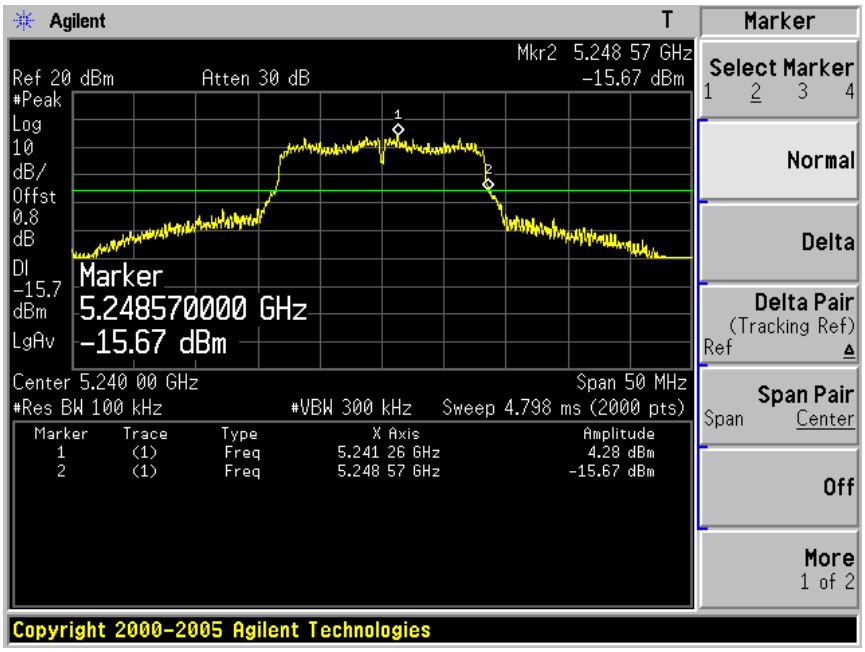
5.6. Test Result

Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 0)

Channel 36 (5180MHz)

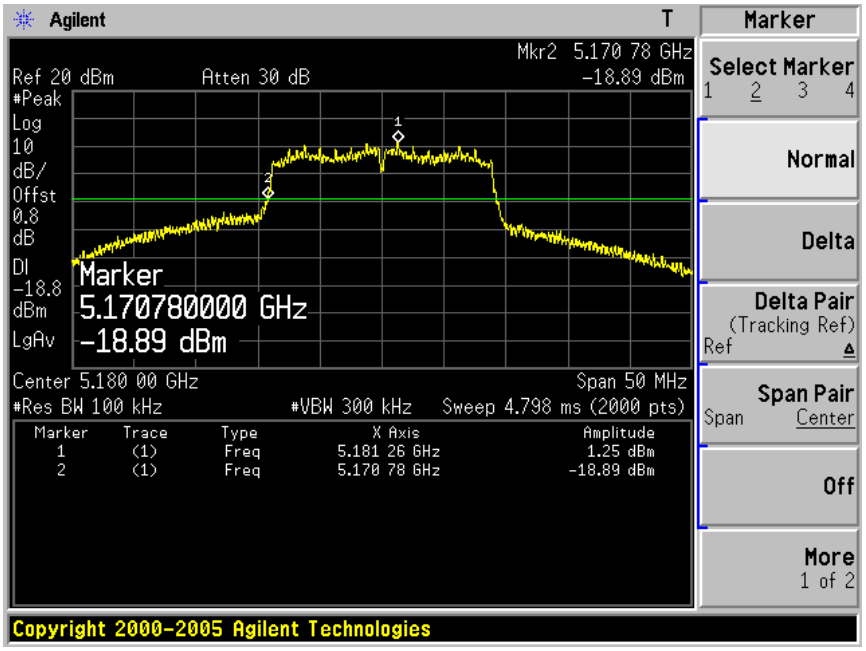


Channel 48 (5240MHz)

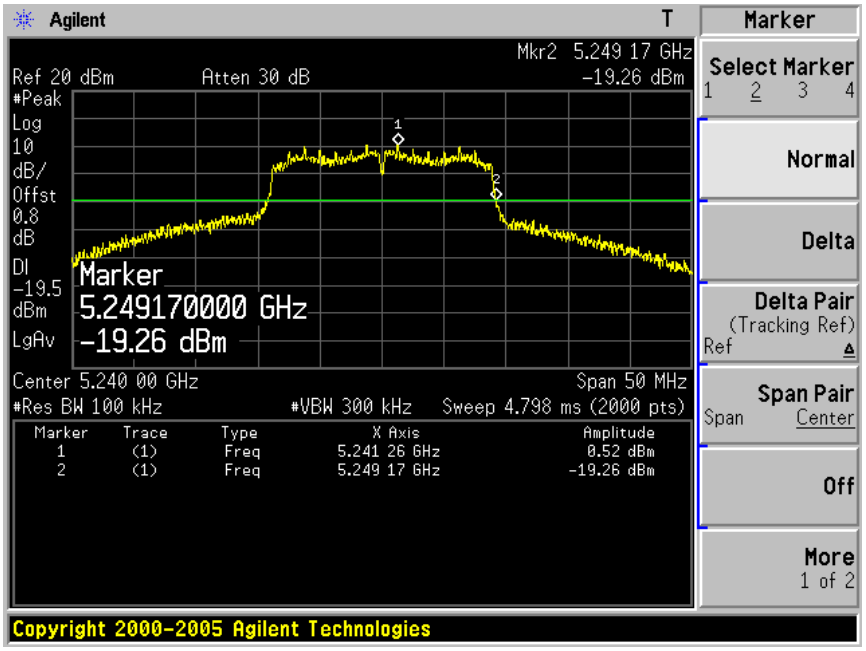


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n (20MHz) (Chain 0)

Channel 36 (5180MHz)

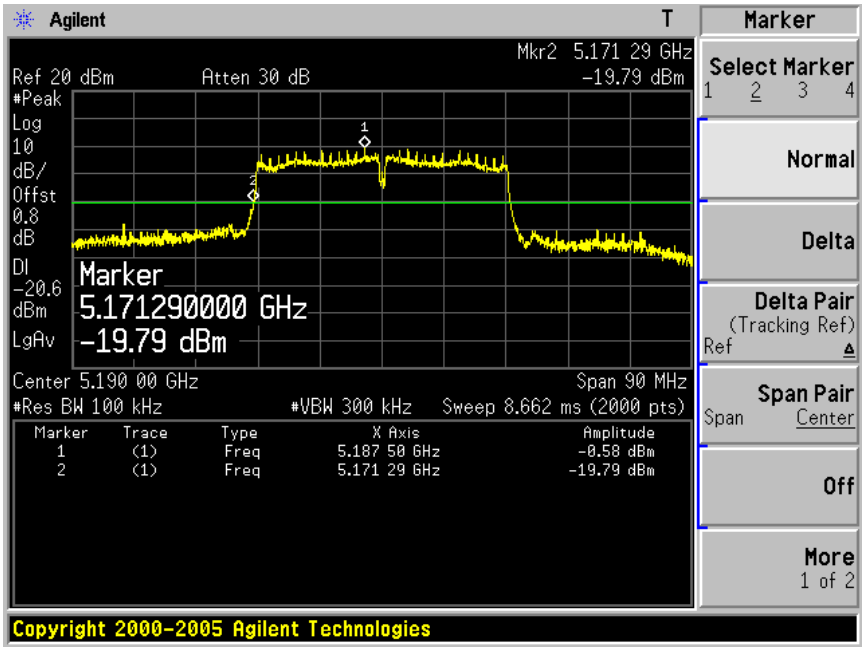


Channel 48 (5240MHz)

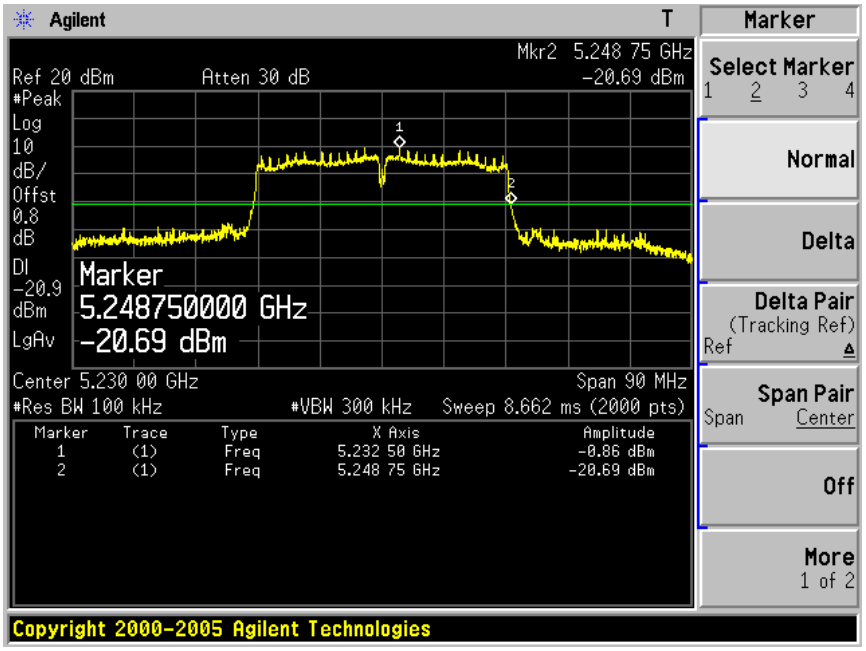


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 0)

Channel 38 (5190MHz)

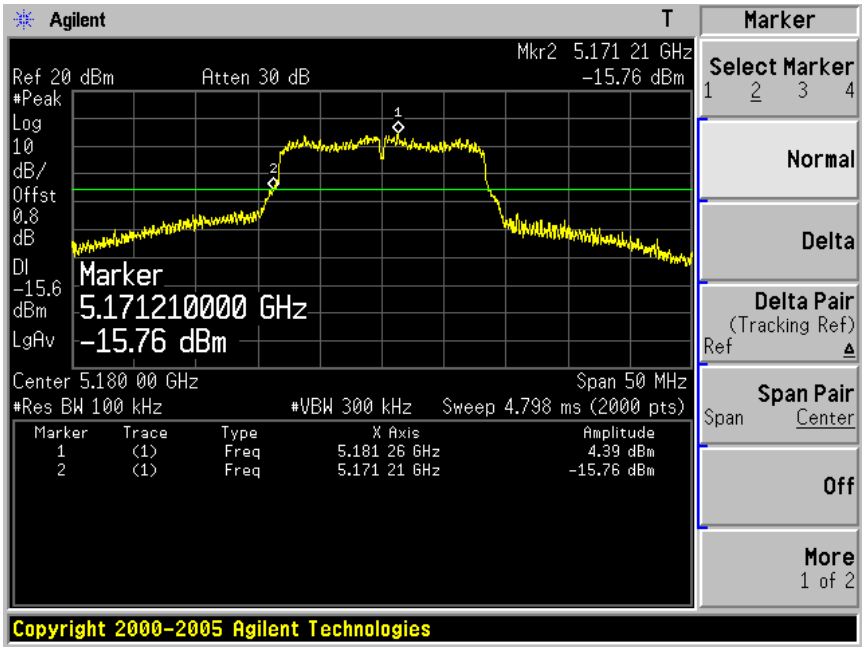


Channel 46 (5230MHz)

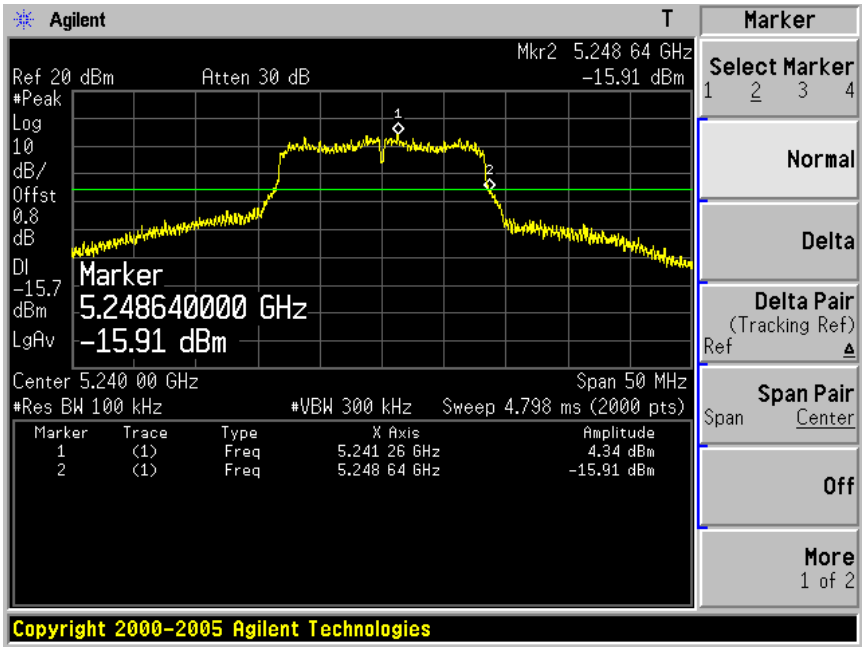


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 1)

Channel 36 (5180MHz)

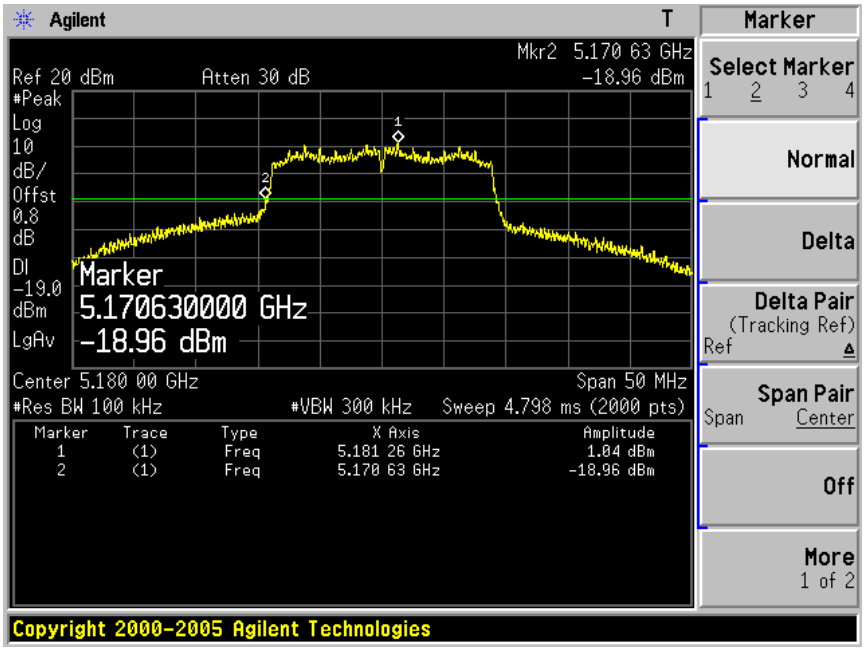


Channel 48 (5240MHz)

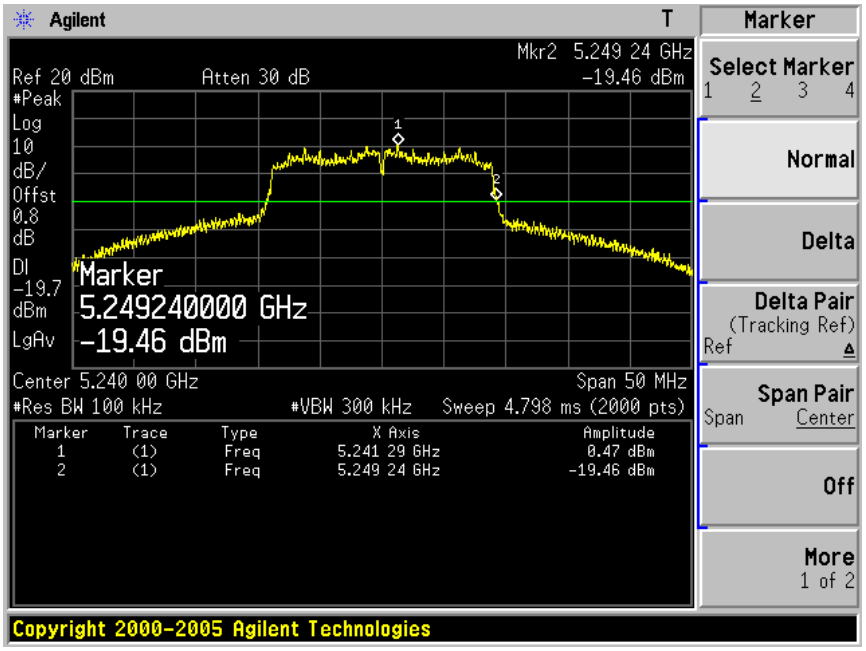


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n (20MHz) (Chain 1)

Channel 36 (5180MHz)

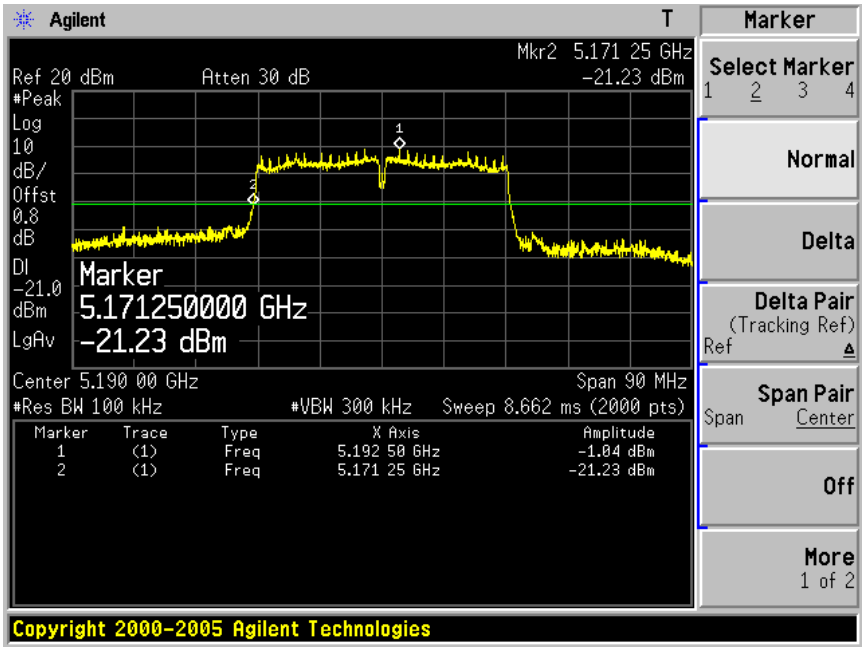


Channel 48 (5240MHz)

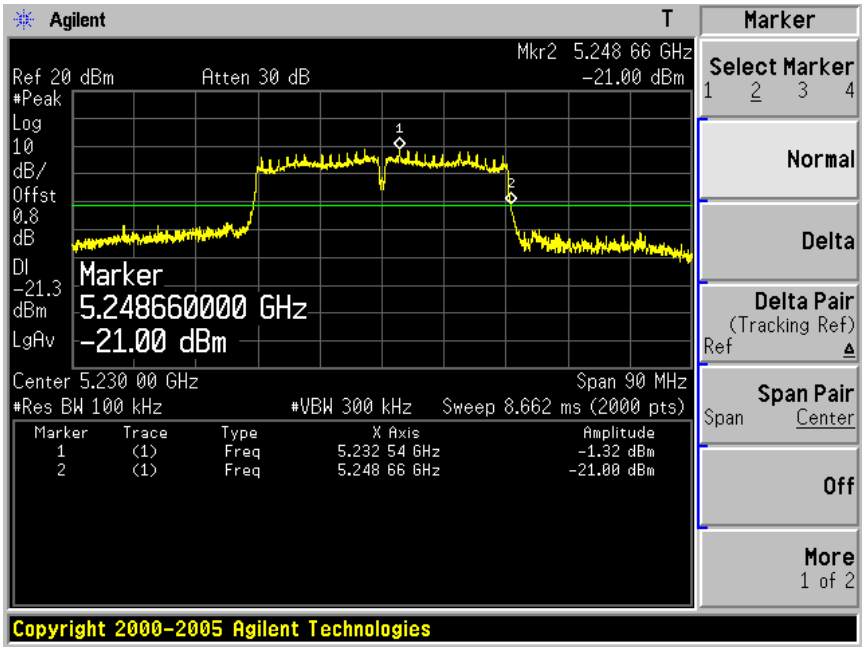


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 1)

Channel 38 (5190MHz)



Channel 46 (5230MHz)



6. Occupied Bandwidth

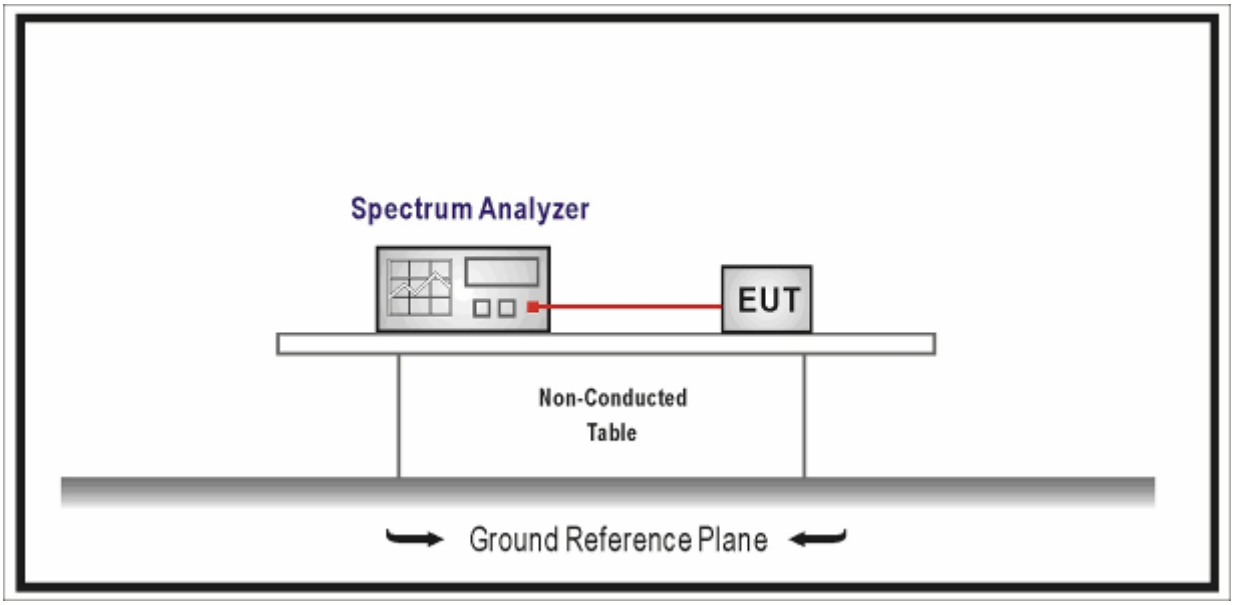
6.1. Test Equipment

Occupied Bandwidth / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

6.2. Test Setup



6.3. Limit

N/A

6.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

Emission bandwidth “B” MHz.

- Use a RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW
- Use a peak detector.
- Do not use the Max Hold function. Rather, use the view button to capture the emission.
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

6.5. Uncertainty

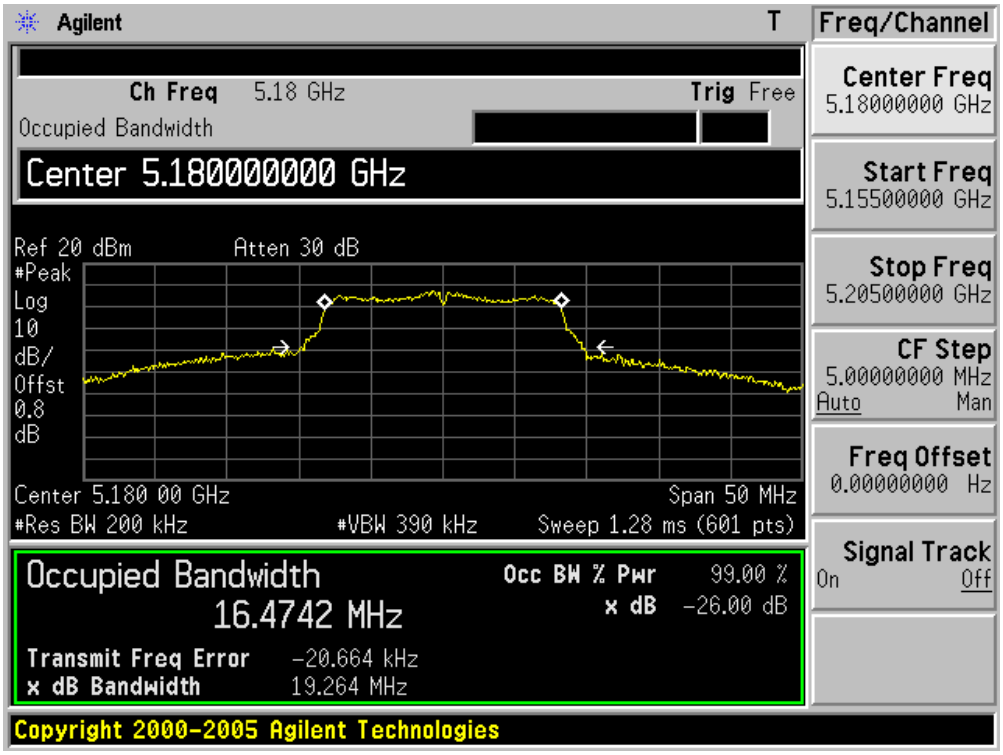
The measurement uncertainty is defined as ± 1 kHz

6.6. Test Result

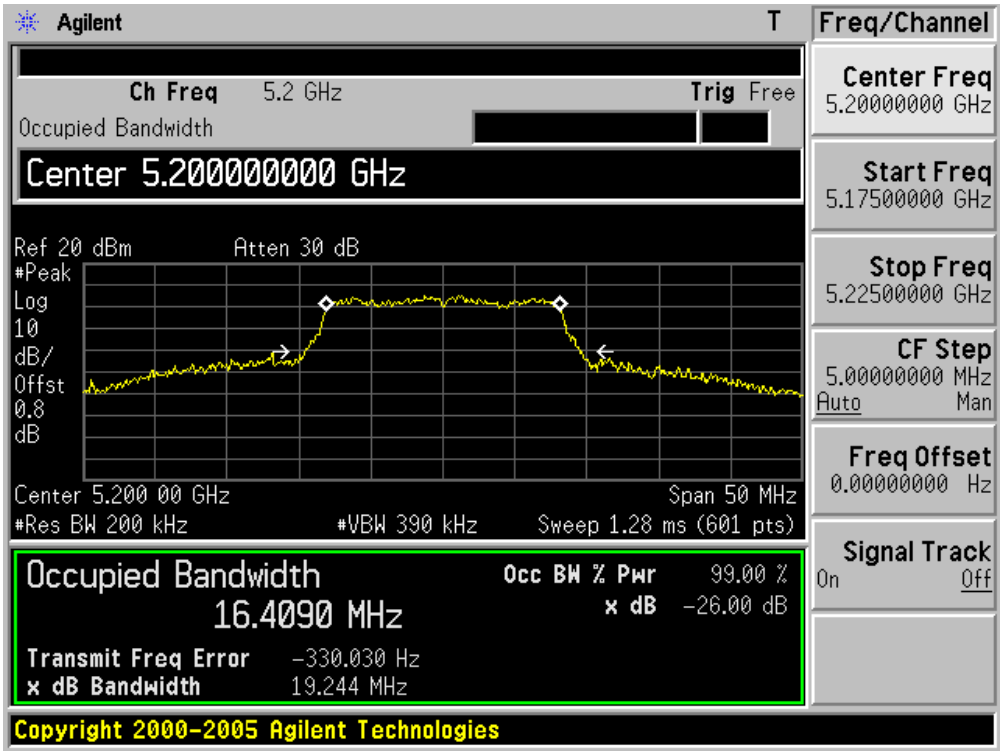
Product	:	IP-STB
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180	19.264	16.474
40	5200	19.244	16.409
48	5240	19.358	16.421

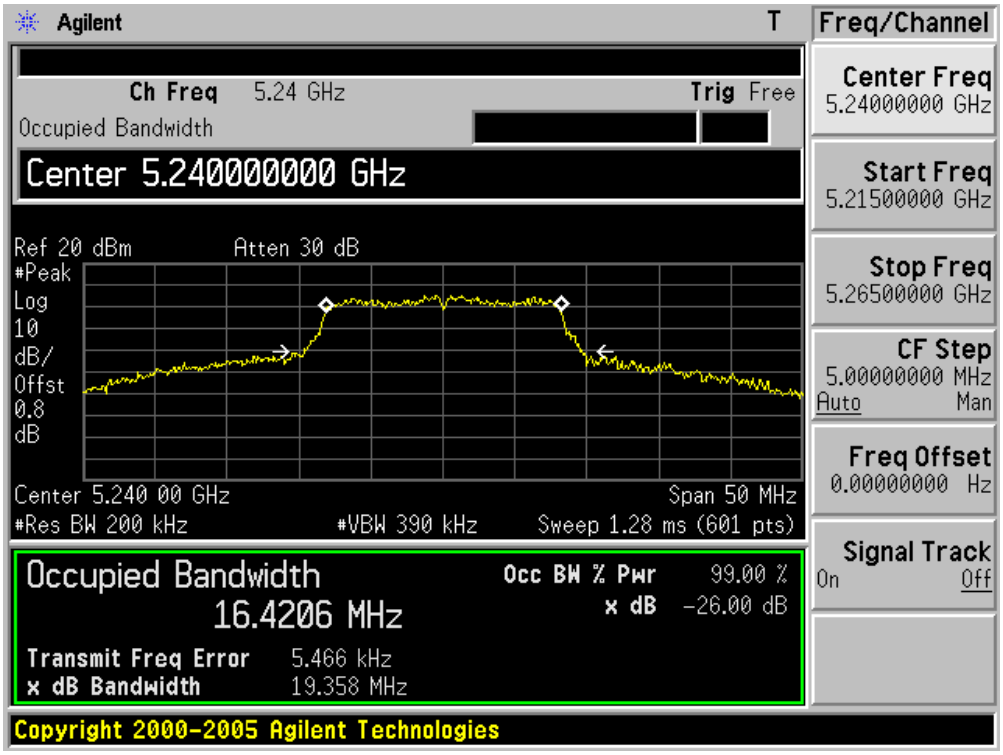
Channel 36 (5180MHz)



Channel 40 (5200MHz)



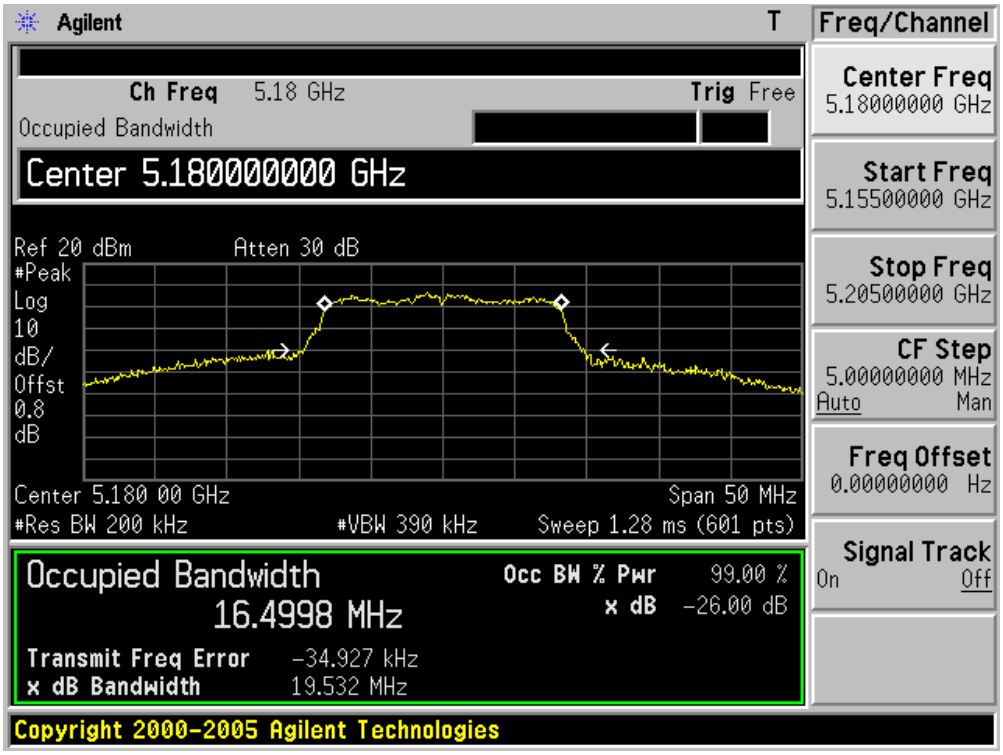
Channel 48 (5240MHz)



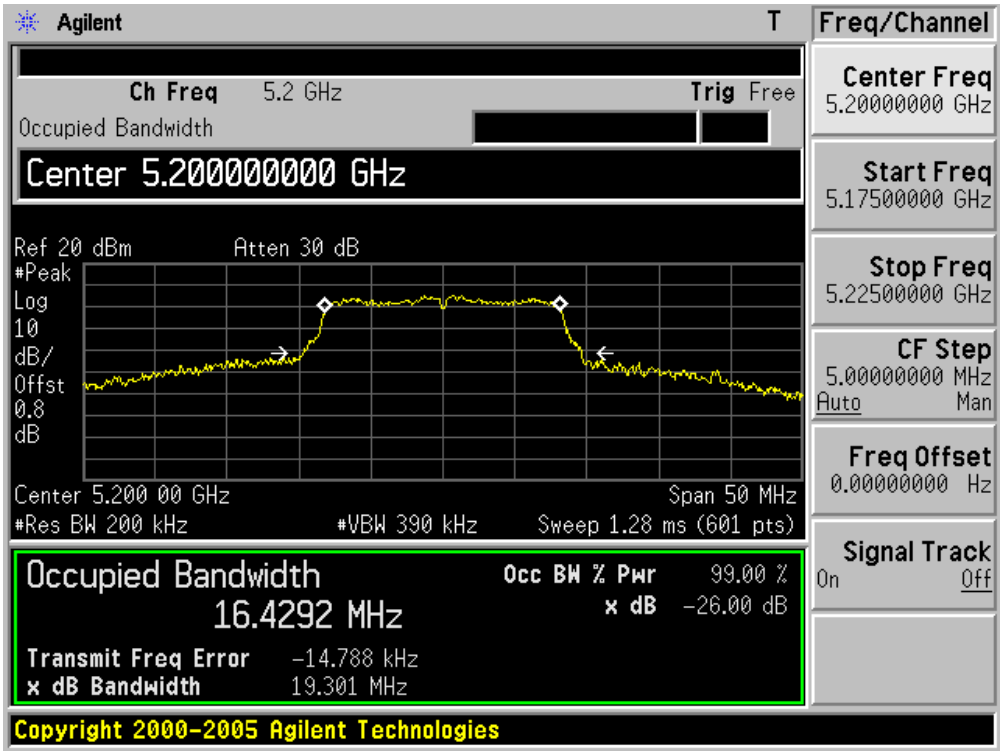
Product	:	IP-STB
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180	19.532	16.500
40	5200	19.301	16.430
48	5240	19.335	16.447

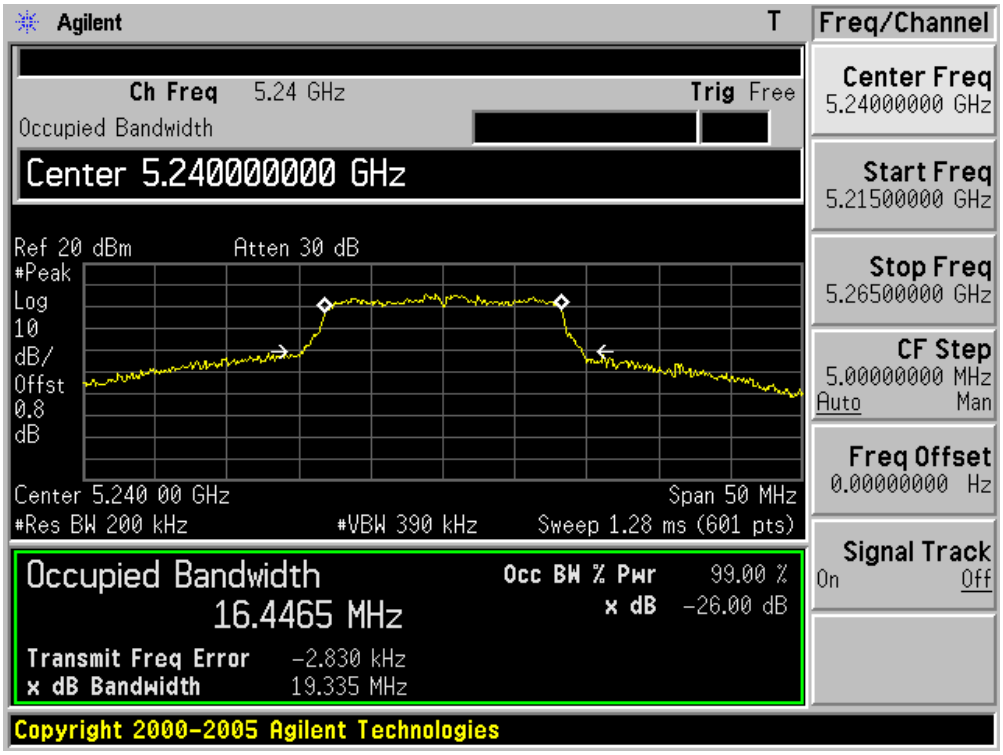
Channel 36 (5180MHz)



Channel 40 (5200MHz)



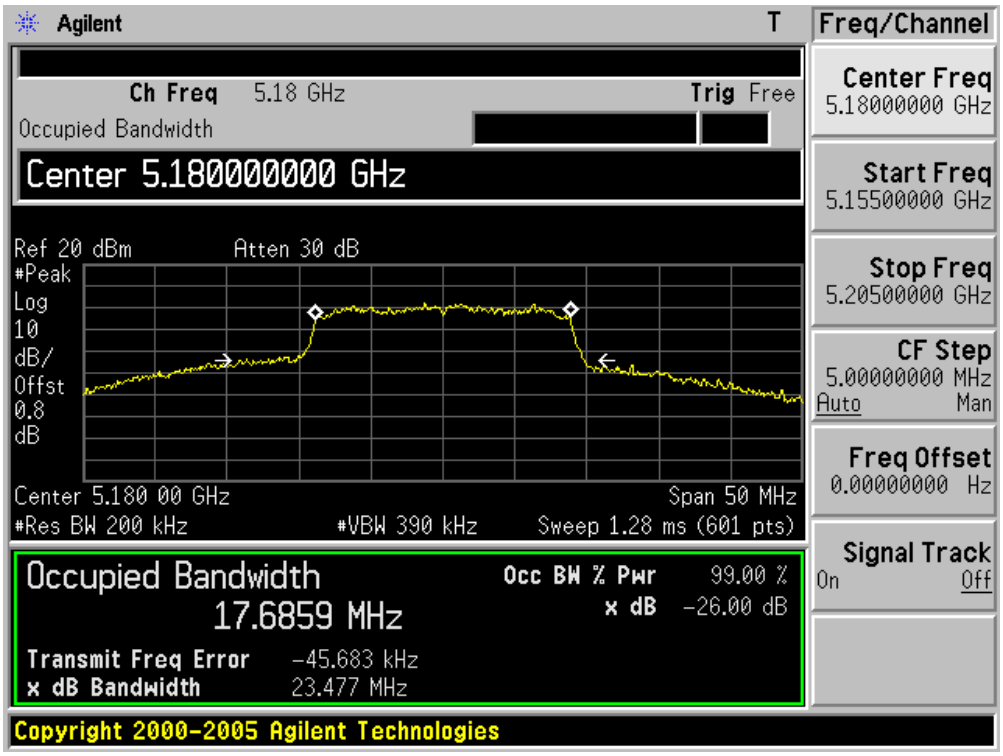
Channel 48 (5240MHz)



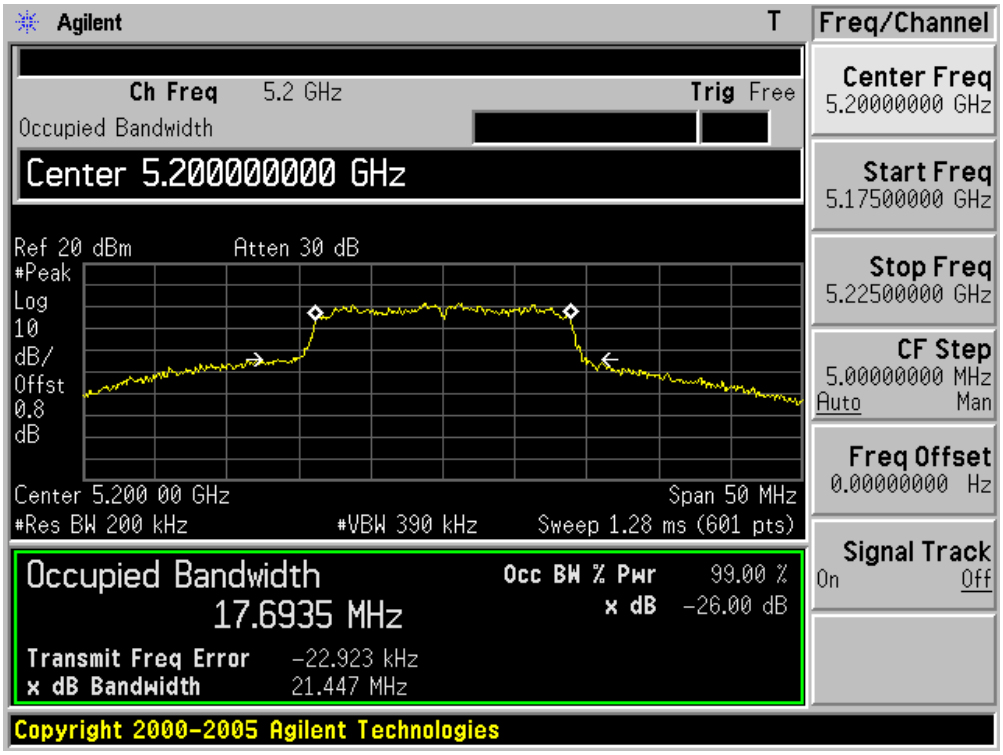
Product	:	IP-STB
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 0)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180	23.477	17.686
40	5200	21.447	17.694
48	5240	25.624	17.709

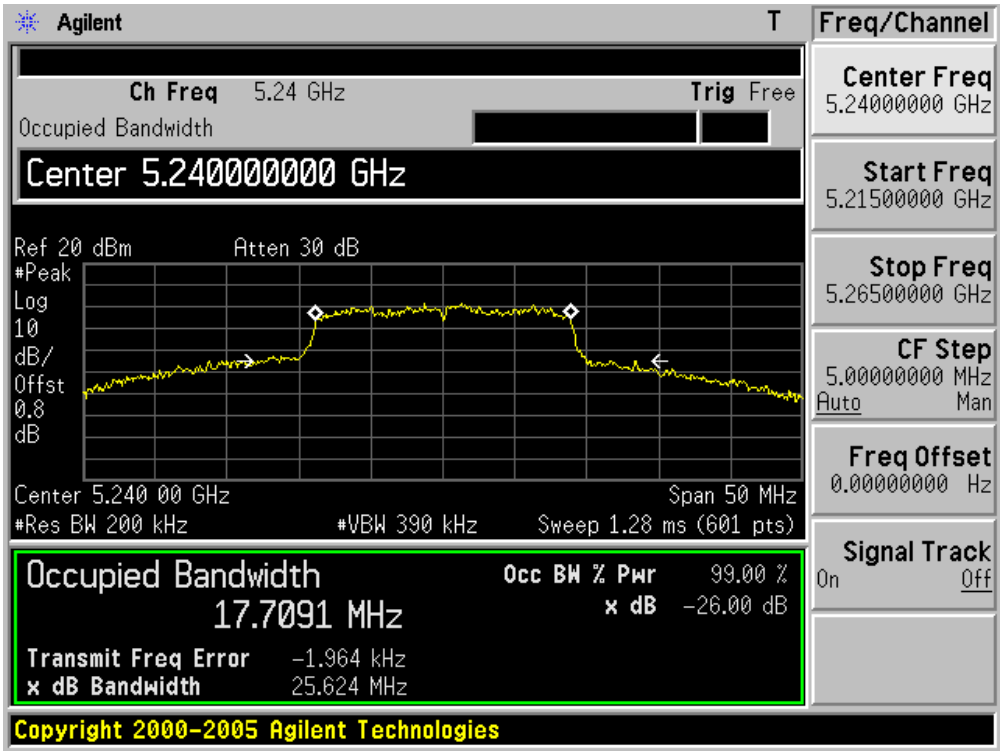
Channel 36 (5180MHz)



Channel 40 (5200MHz)



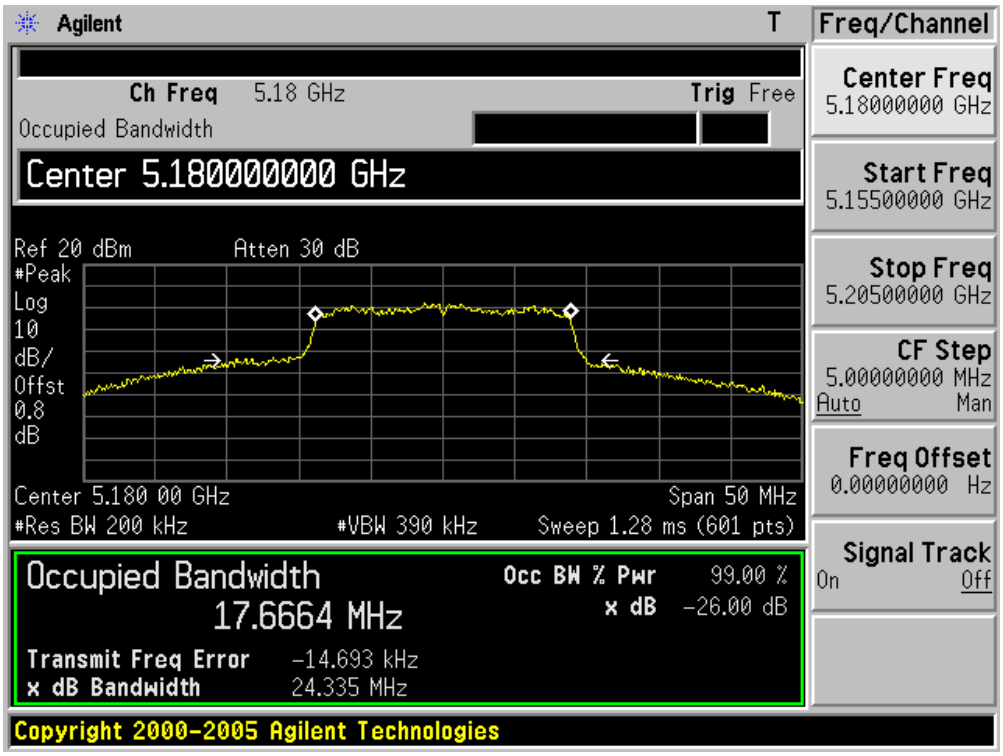
Channel 48 (5240MHz)



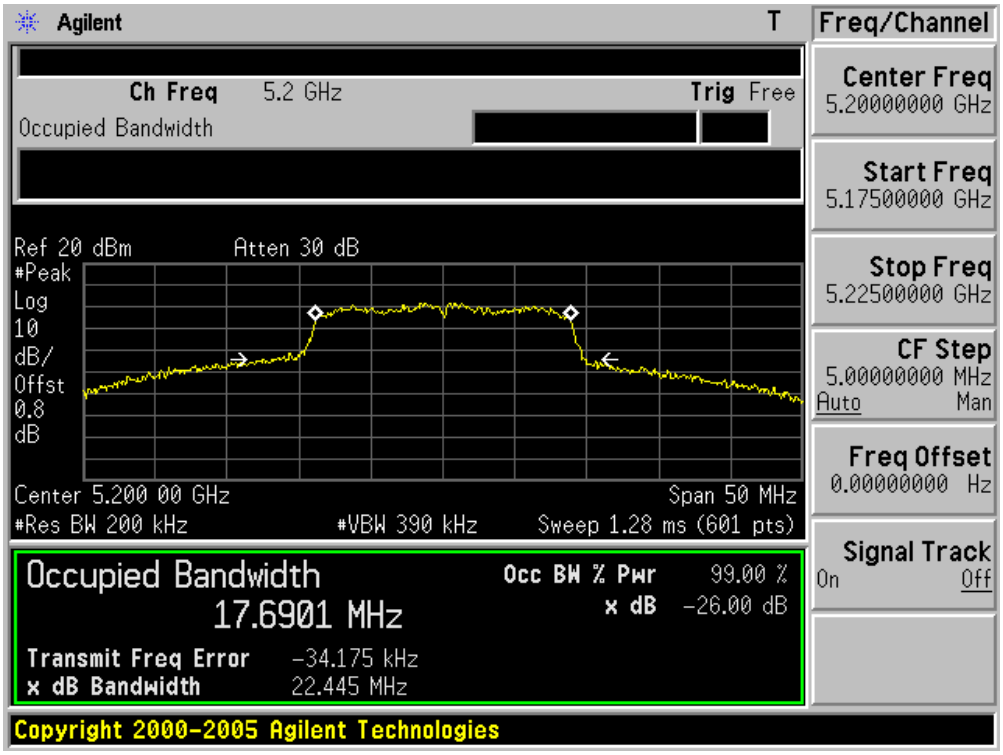
Product	:	IP-STB
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 1)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180	24.335	17.666
40	5200	22.445	17.690
48	5240	23.793	17.742

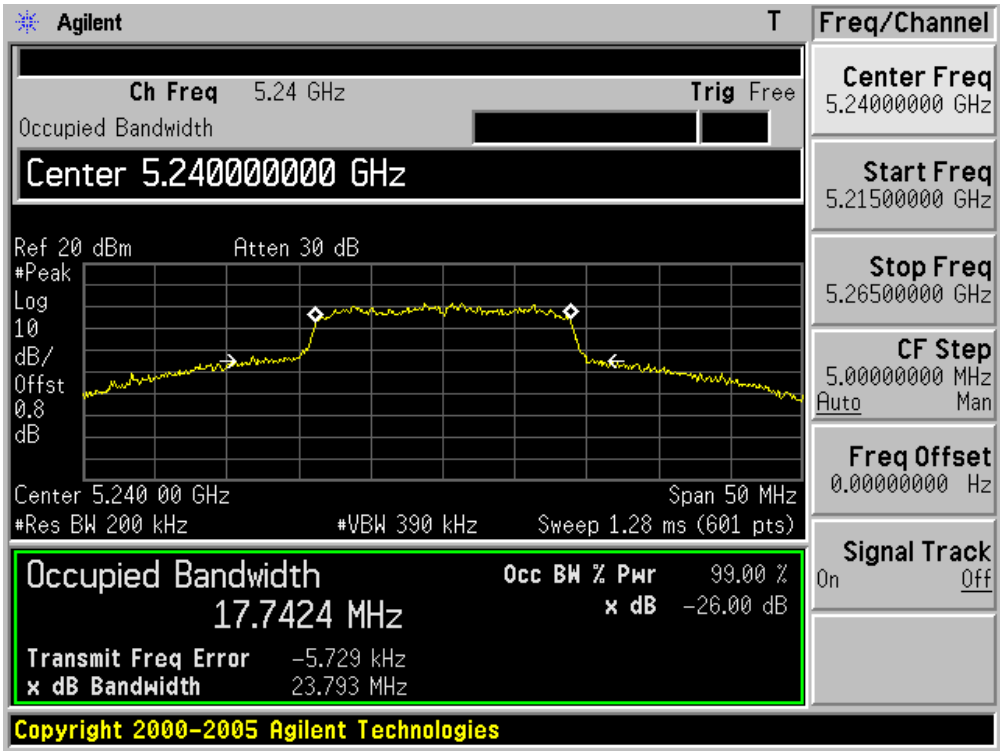
Channel 36 (5180MHz)



Channel 40 (5200MHz)



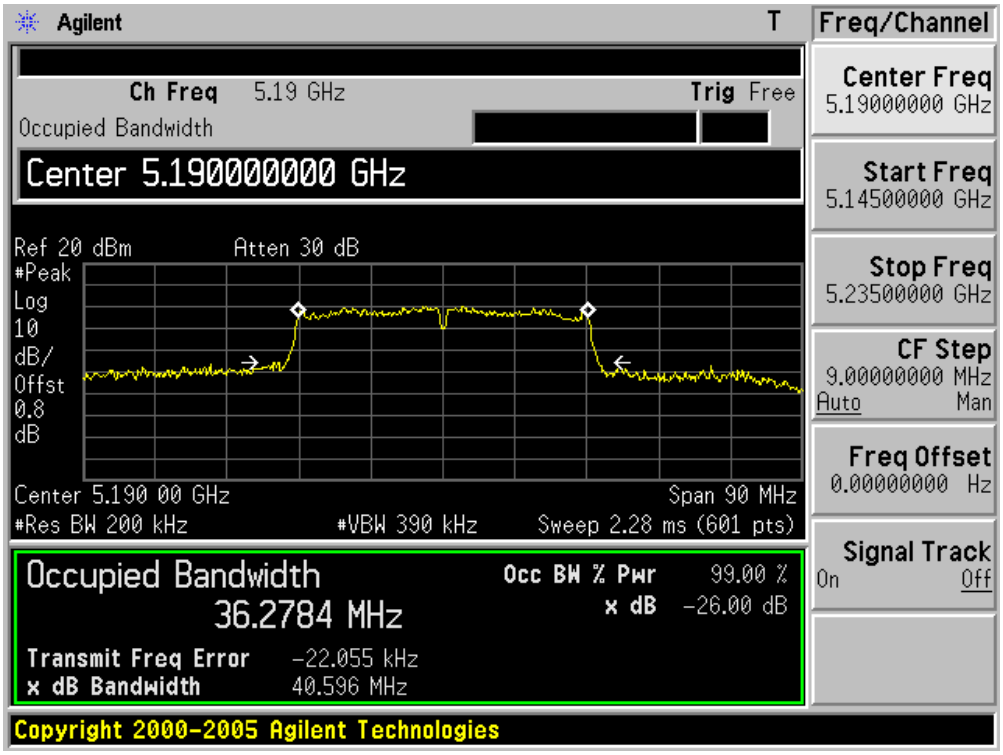
Channel 48 (5240MHz)



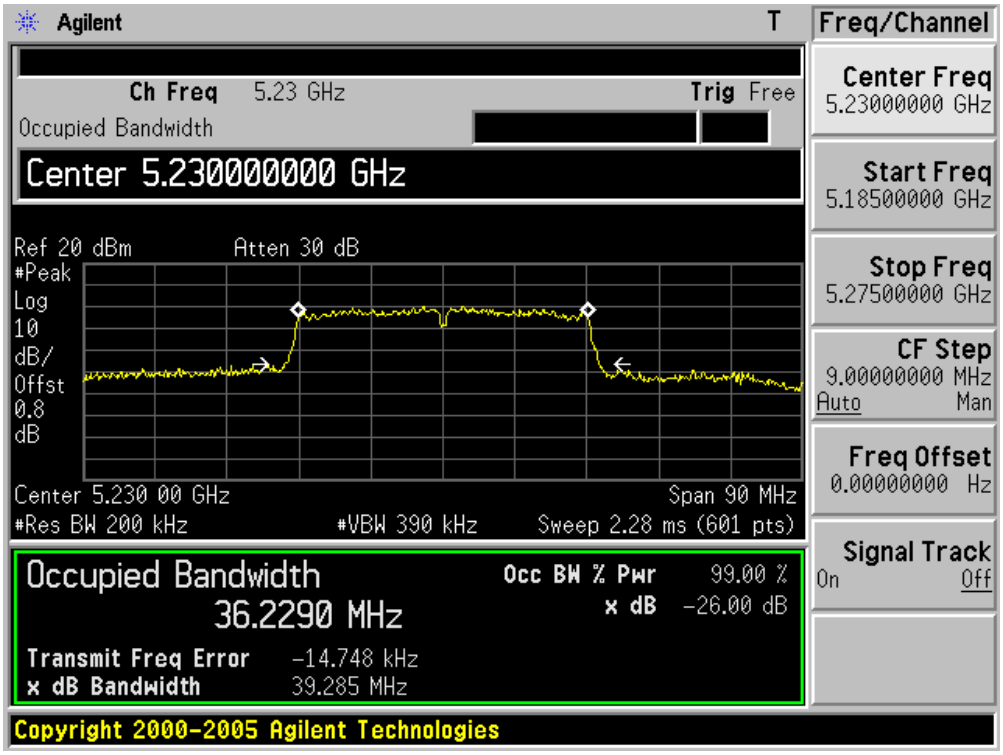
Product	:	IP-STB
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 0)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190	40.596	36.278
46	5230	39.285	36.229

Channel 38 (5190MHz)



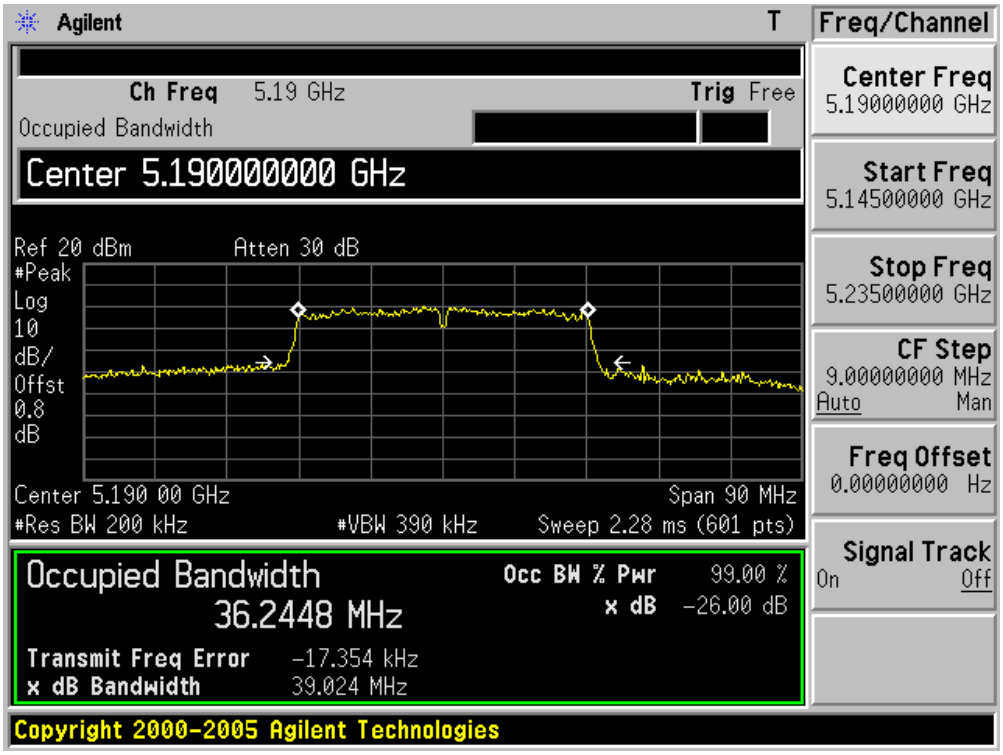
Channel 46 (5230MHz)



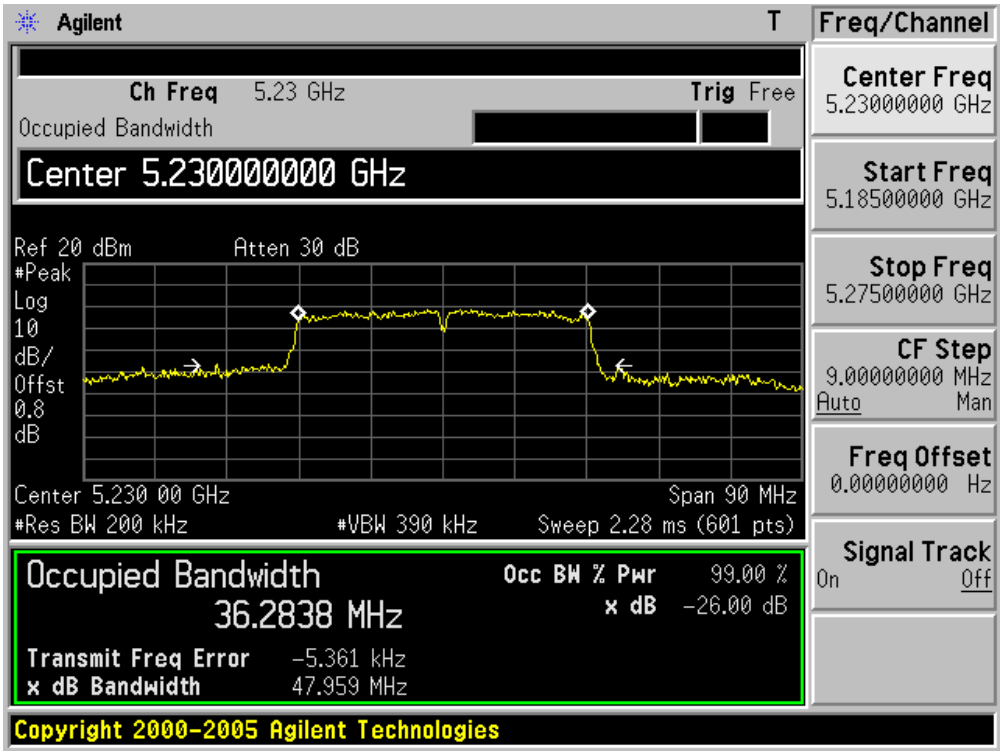
Product	:	IP-STB
Test Item	:	Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 1)

Channel No.	Frequency (MHz)	26dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190	47.959	36.284
46	5230	39.024	36.245

Channel 38 (5190MHz)



Channel 46 (5230MHz)



7. Power Output

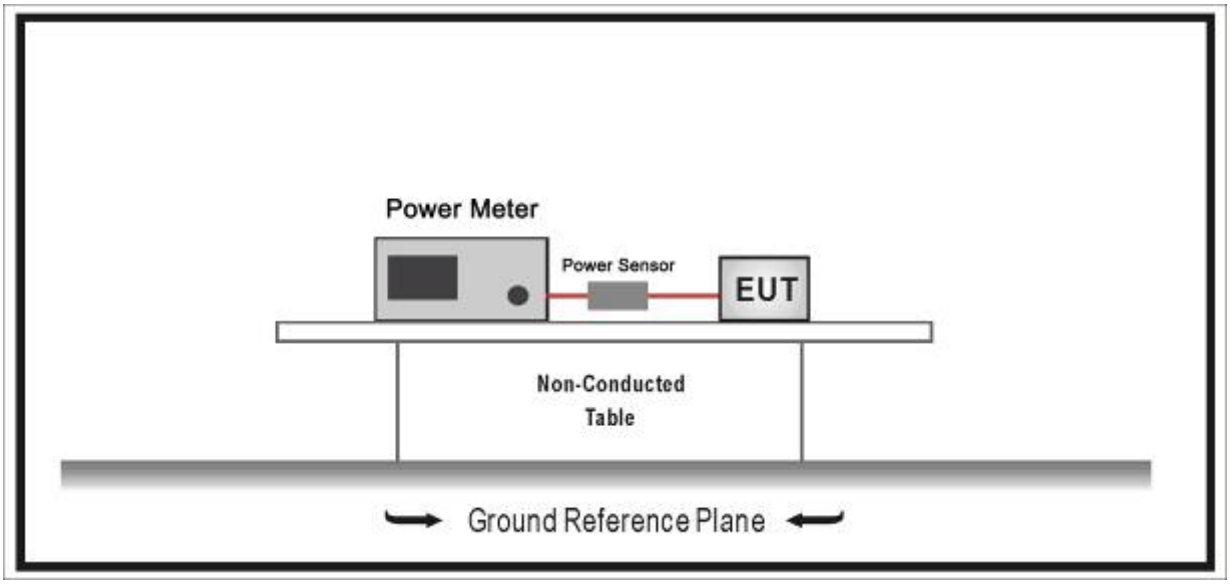
7.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

7.2. Test Setup



7.3. Limit

- For the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10log B, where B is the 26 dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- For the band 5.25-5.35 GHz and 5.47-5725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26 dB emission bandwidth in megahertz. If transmitting antenna of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6

dBi.

- For the band 5.725-5.825 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 1 W or 17 dBm + 10log B, where B is the 26 dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain up to 23 dBi without any corresponding reduction in the transmitter peak output power. For fixed, point-to-point U-NII transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in peak transmitter power for each 1 dB of antenna gain in excess of 23 dBi would be required.

7.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

Use the wideband power meter to test peak power and record the result.

7.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

7.6. Test Result

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (blue marker) for final test of each channel.

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)				
		802.11a	20MHz Bandwidth		40MHz Bandwidth	
			800ns GI	400ns GI	800ns GI	400ns GI
0	1	6	6.5	7.2	13.5	15.0
1	1	9	13.0	14.4	27.0	30.0
2	1	12	19.5	21.7	40.5	45.0
3	1	18	26.0	28.9	54.0	60.0
4	1	24	39.0	43.3	81.0	90.0
5	1	36	52.0	57.8	108.0	120.0
6	1	48	58.5	65.0	121.5	135.0
7	1	54	65.0	72.2	135.0	150.0
8	2	---	13.0	14.4	27.0	30.0
9	2	---	26.0	28.9	54.0	60.0
10	2	---	39.0	43.3	81.0	90.0
11	2	---	52.0	57.8	108.0	120.0
12	2	---	78.0	86.7	162.0	180.0
13	2	---	104.0	115.6	216.0	240.0
14	2	---	117.0	130.0	243.0	270.0
15	2	---	130.0	144.0	270.0	300.0

Power output at various data rates:

Test Mode	Bandwidth	Frequency (MHz)	Channel	Data Rate	Peak Power (dBm)
802.11a(Chain 0)	20	5200	36	6	16.30
				24	16.45
				54	16.54
802.11n(Chain 0)	20	5200	36	HT0	16.38
				HT4	16.45
				HT7	16.46
802.11n(Chain 0)	40	5190	38	HT0	16.60
				HT4	16.56
				HT7	16.55

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
36	5180	16.68	N/A	16.68	17.00	Pass	18.68
40	5200	16.54	N/A	16.54	17.00	Pass	18.54
48	5240	16.43	N/A	16.43	17.00	Pass	18.43

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
36	5180	16.31	N/A	16.31	17.00	Pass	18.31
40	5200	16.46	N/A	16.46	17.00	Pass	18.46
48	5240	16.20	N/A	16.20	17.00	Pass	18.20

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 0)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				

38	5190	16.60	N/A	16.60	17.00	Pass	18.60
46	5230	16.26	N/A	16.26	17.00	Pass	18.26

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
36	5180	N/A	16.68	16.68	17.00	Pass	18.68
40	5200	N/A	16.44	16.44	17.00	Pass	18.44
48	5240	N/A	16.25	16.25	17.00	Pass	18.25

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
36	5180	N/A	16.48	16.48	17.00	Pass	18.48
40	5200	N/A	16.45	16.45	17.00	Pass	18.45
48	5240	N/A	16.46	16.46	17.00	Pass	18.46

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
38	5190	N/A	16.88	16.88	17.00	Pass	18.88
46	5230	N/A	16.55	16.55	17.00	Pass	18.55

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
36	5180	13.71	13.70	16.72	17.00	Pass	18.72
40	5200	13.45	13.70	16.59	17.00	Pass	18.59
48	5240	13.50	13.38	16.45	17.00	Pass	18.45

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 0	Chain 1				
38	5190	13.40	13.60	16.51	17.00	Pass	16.51
46	5230	13.36	13.88	16.64	17.00	Pass	16.64

Max.EIRP=Total Power + Antenna Gain

8. Peak Power Spectral Density

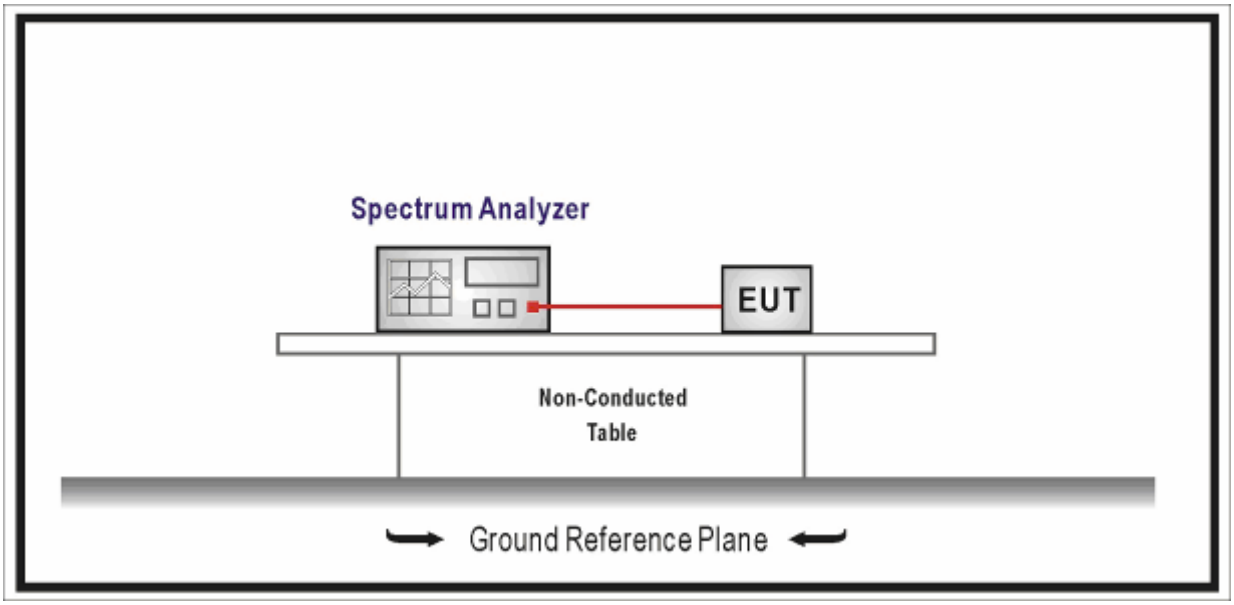
8.1. Test Equipment

Peak Power Spectral Density / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

8.2. Test Setup



8.3. Limit

- For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4dBm in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- For the band 5.25-5.35 GHz and 5.47-5725 GHz bands, the peak power spectral density shallnot exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6dBi are used, the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
- For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm

in any 1-MHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the peak 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 U-NII devices operating in this band may employ transmitting antennas with directional gain up to 23 dBi without any corresponding reduction in the peak power spectral density. For fixed, point-to-point U-NII transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in peak power spectral density for each 1 dB of antenna gain in excess of 23 dBi would be required.

8.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.
Use sample detector and power averaging (not video averaging) mode. Set RBW= 1 MHz*, VBW > 1 MHz. The PPSD is the highest level found across the emission in any 1-MHz band after 100 sweeps of averaging. This method is permitted only if the transmission pulse or sequence of pulses remains at maximum transmit power throughout each of the 100 sweeps of averaging and that the interval between pulses is not included in any of the sweeps (e.g., 100 sweeps should occur during one transmission, or each sweep gated to occur during a transmission).

8.5. Uncertainty

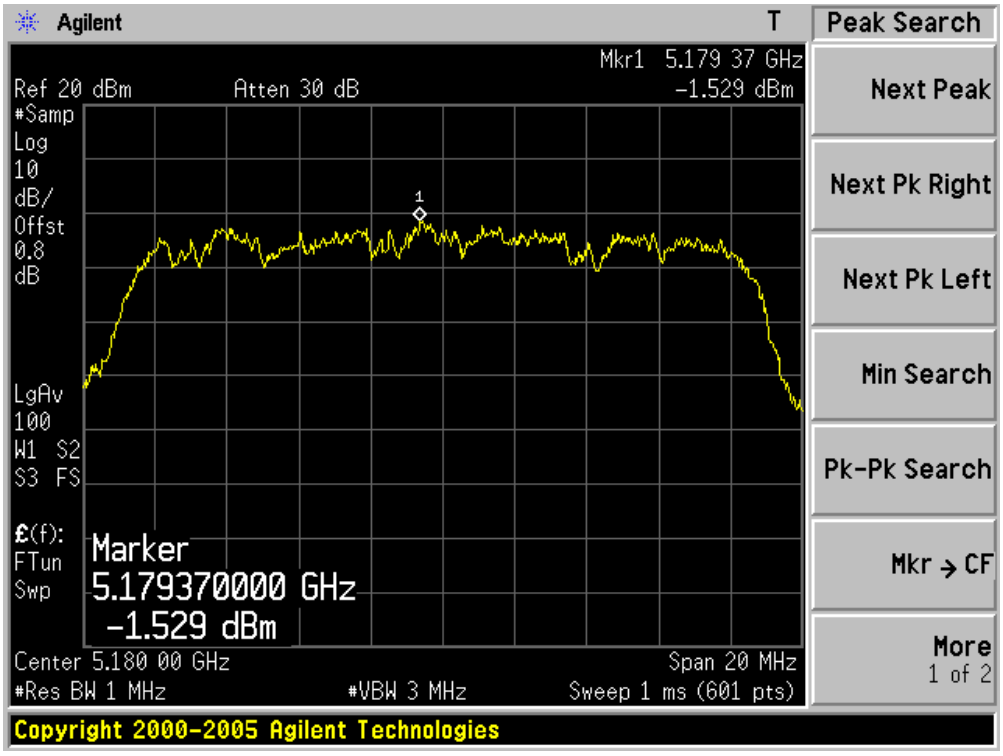
The measurement uncertainty is defined as ± 1.27 dB

8.6. Test Result

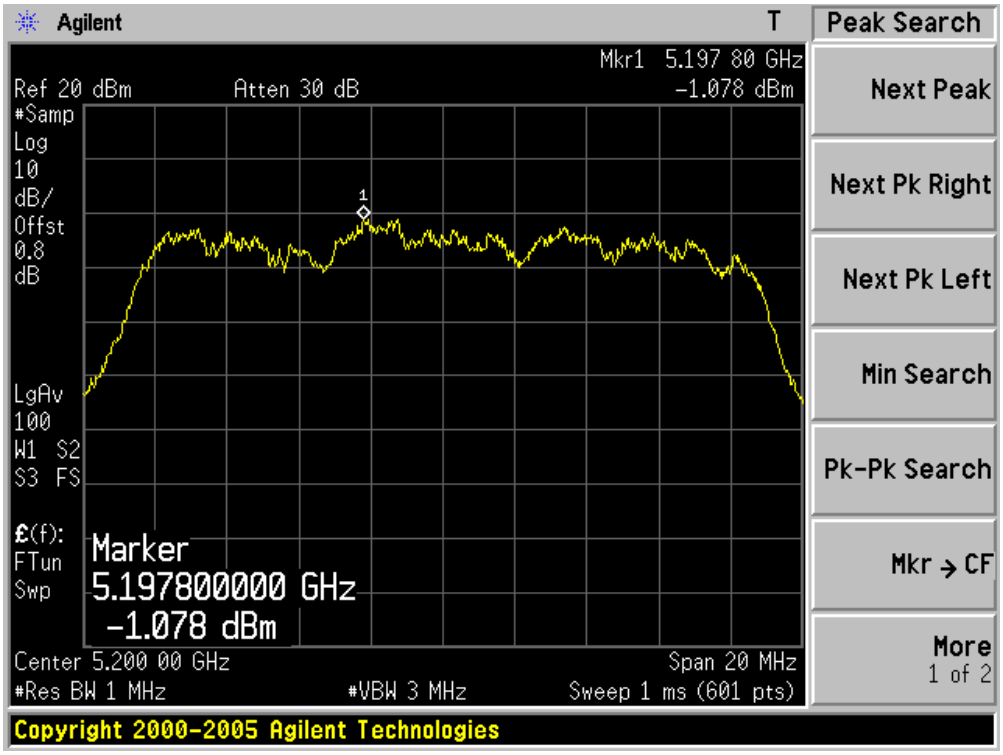
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
36	5180	-1.529	N/A	-1.529	4.0	Pass
40	5200	-1.078	N/A	-1.078	4.0	Pass
48	5240	-2.175	N/A	-2.175	4.0	Pass

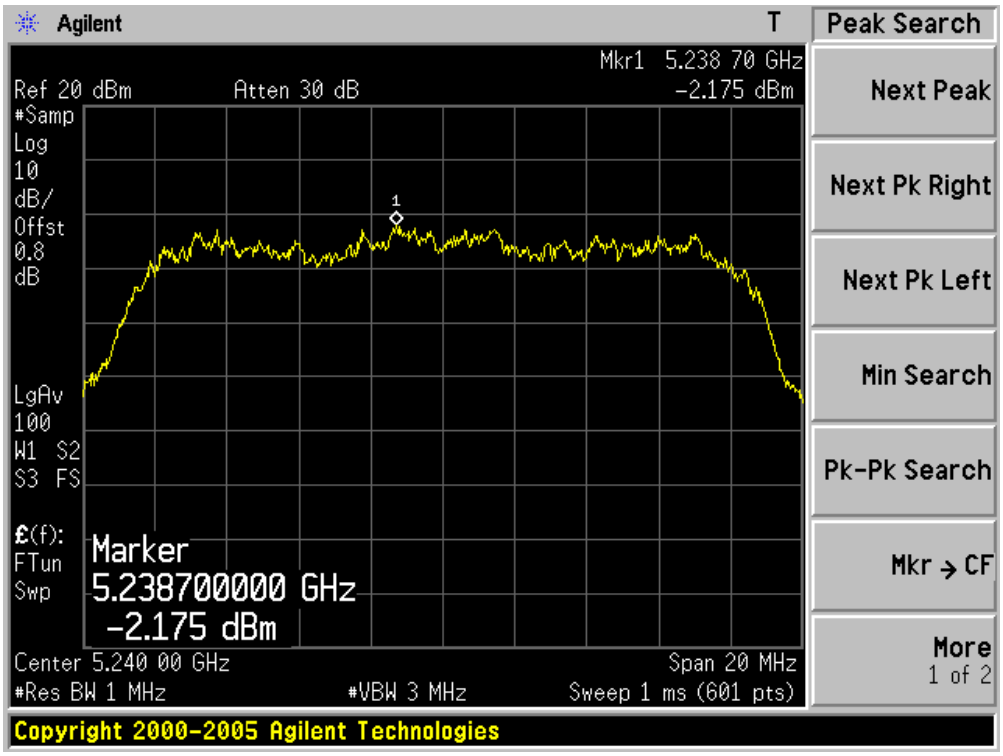
Channel 36 (5180MHz)



Channel 40 (5200MHz)



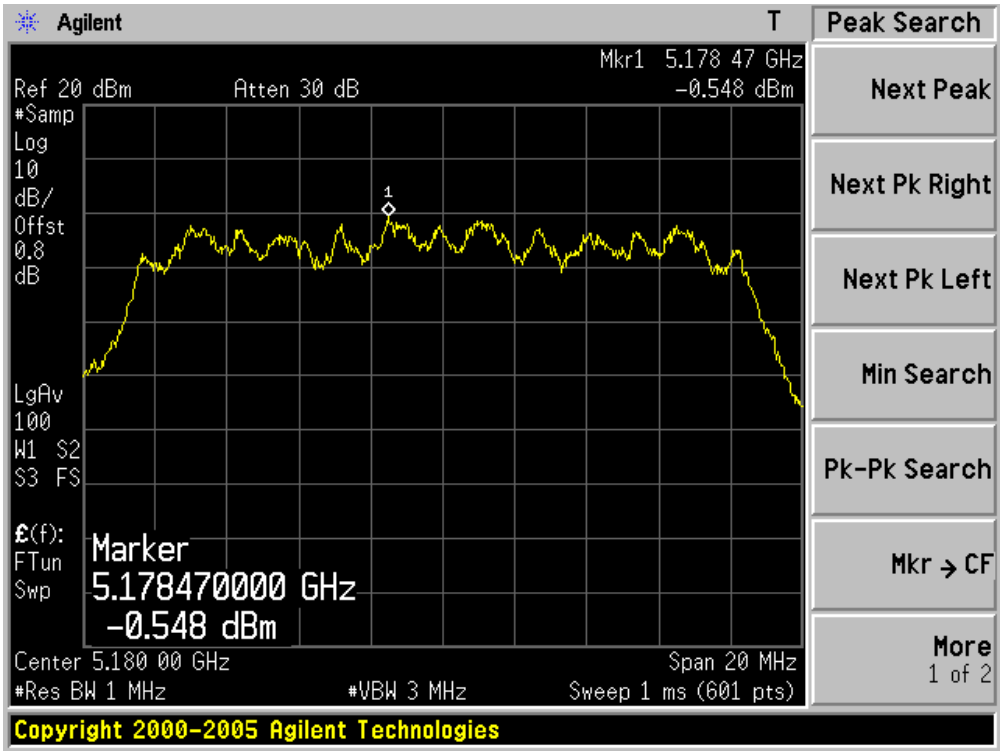
Channel 48 (5240MHz)



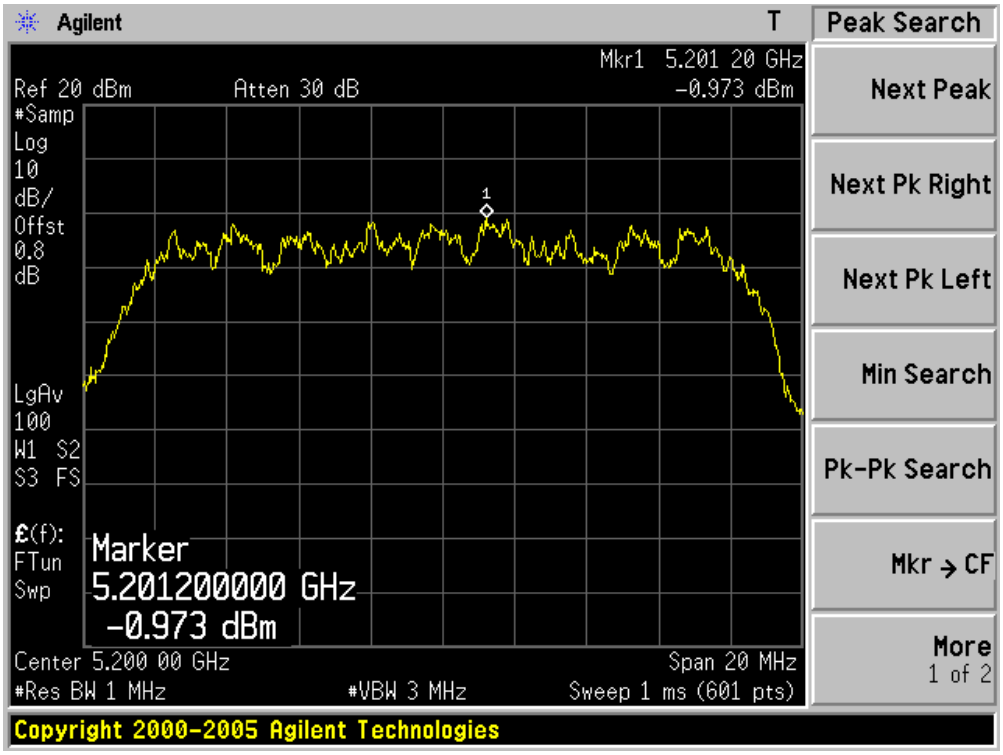
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
36	5180	N/A	-0.548	-0.548	4.0	Pass
40	5200	N/A	-0.973	-0.973	4.0	Pass
48	5240	N/A	-0.552	-0.552	4.0	Pass

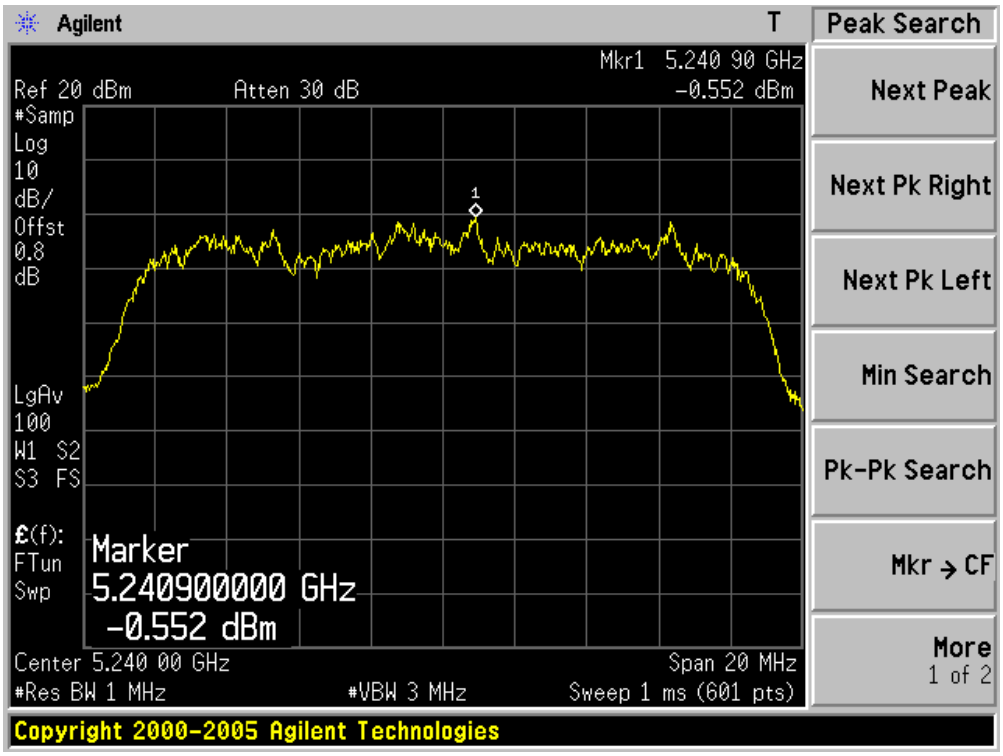
Channel 36 (5180MHz)



Channel 40 (5200MHz)



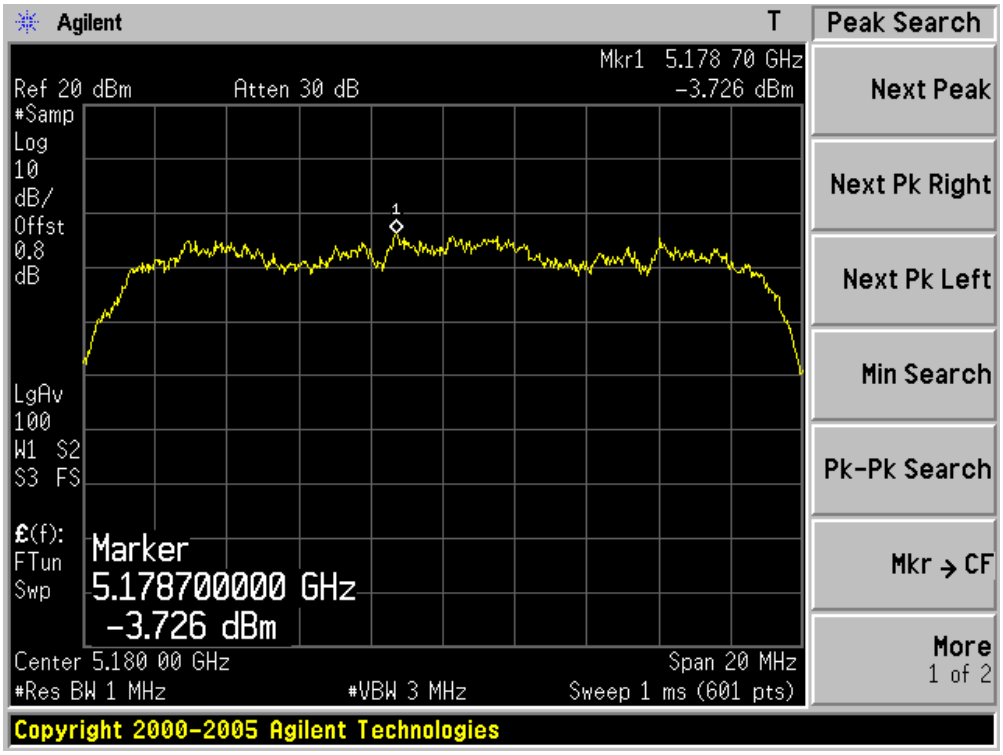
Channel 48 (5240MHz)



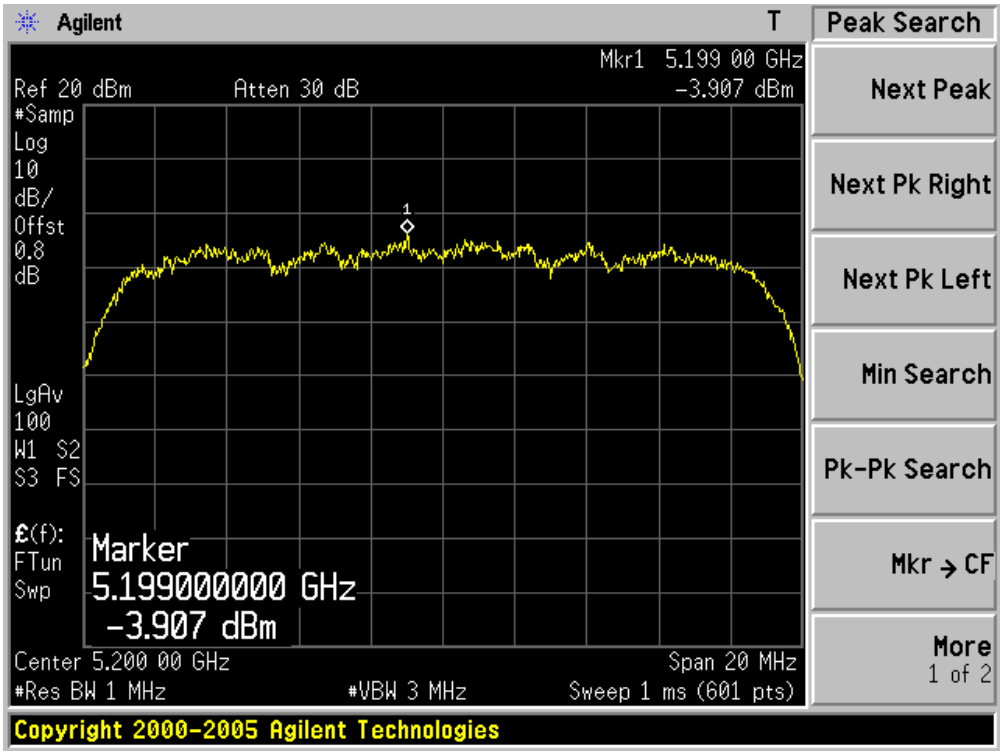
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 0)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
36	5180	-3.726	N/A	-3.726	4.0	Pass
40	5200	-3.907	N/A	-3.907	4.0	Pass
48	5240	-2.904	N/A	-2.904	4.0	Pass

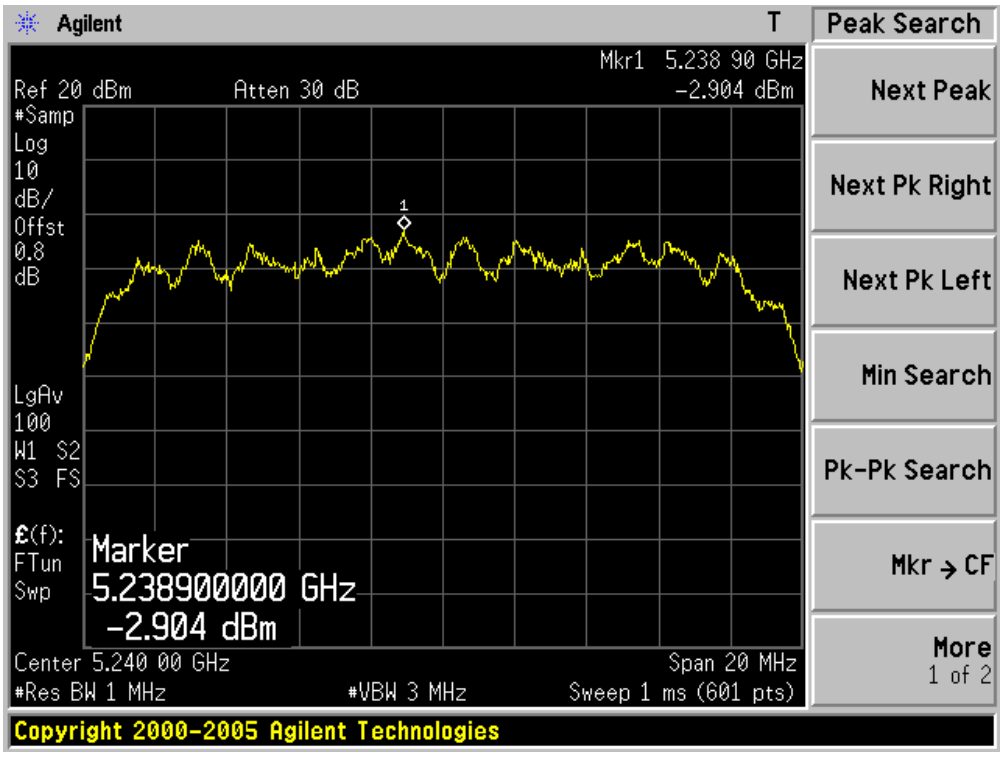
Channel 36 (5180MHz)



Channel 40 (5200MHz)



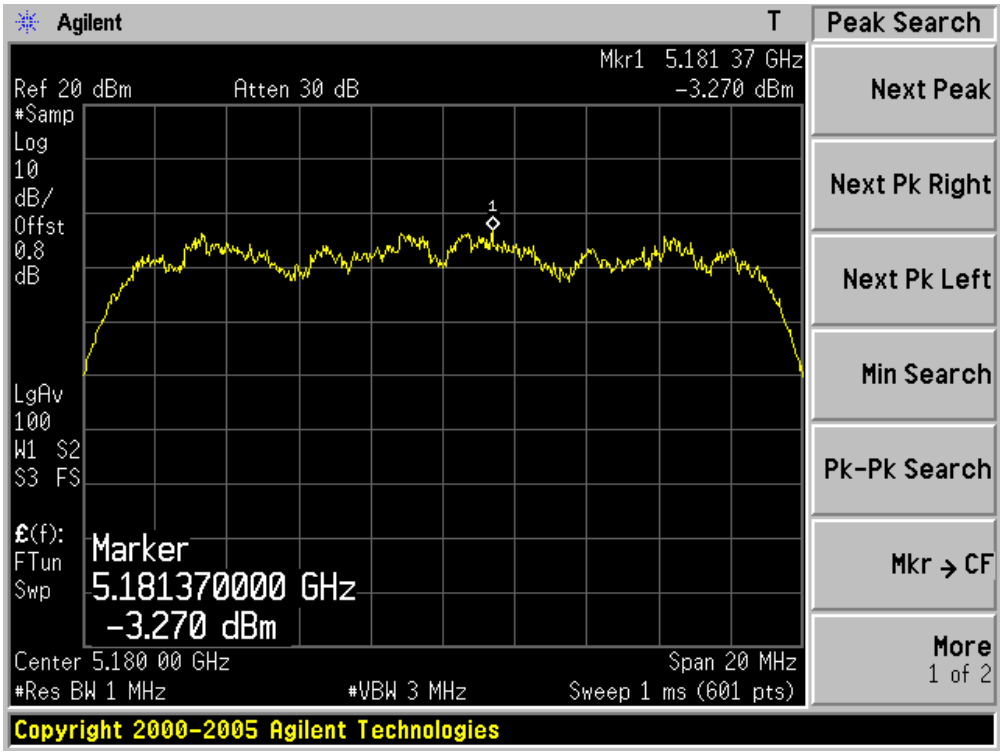
Channel 48 (5240MHz)



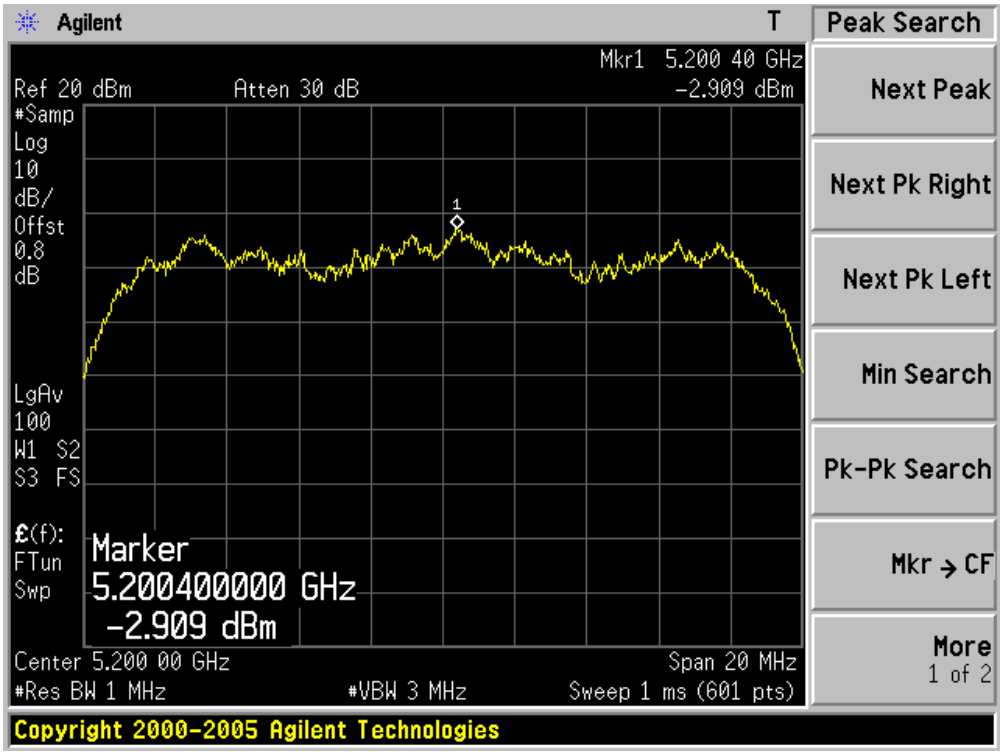
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
36	5180	N/A	-3.270	-3.270	4.0	Pass
40	5200	N/A	-2.909	-2.909	4.0	Pass
48	5240	N/A	-3.411	-3.411	4.0	Pass

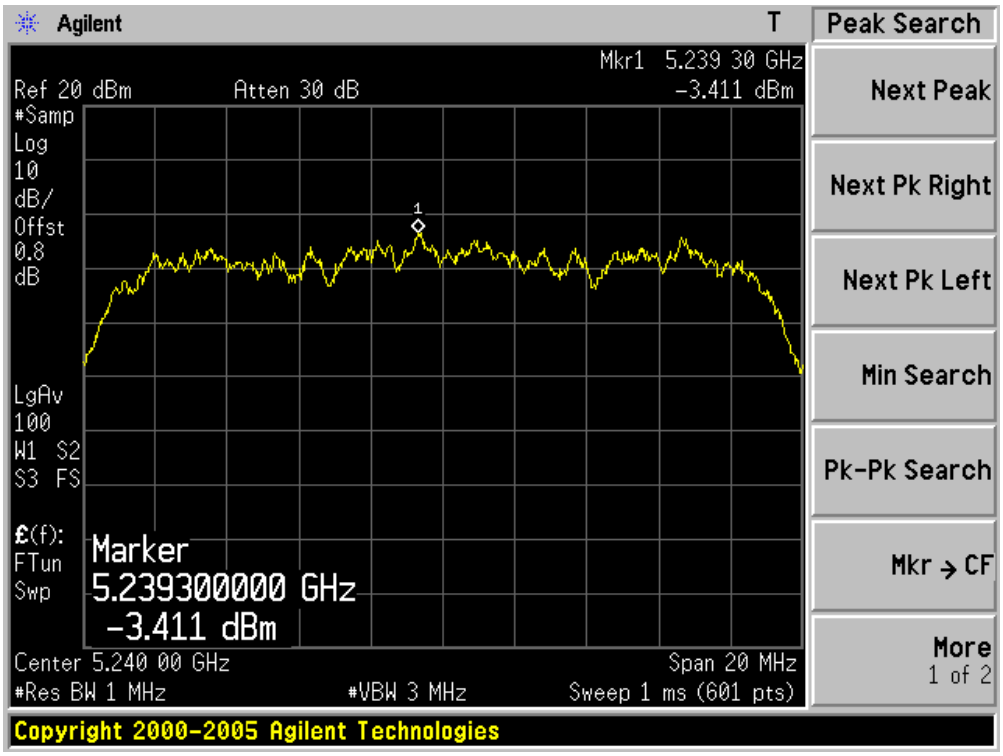
Channel 36 (5180MHz)



Channel 40 (5200MHz)



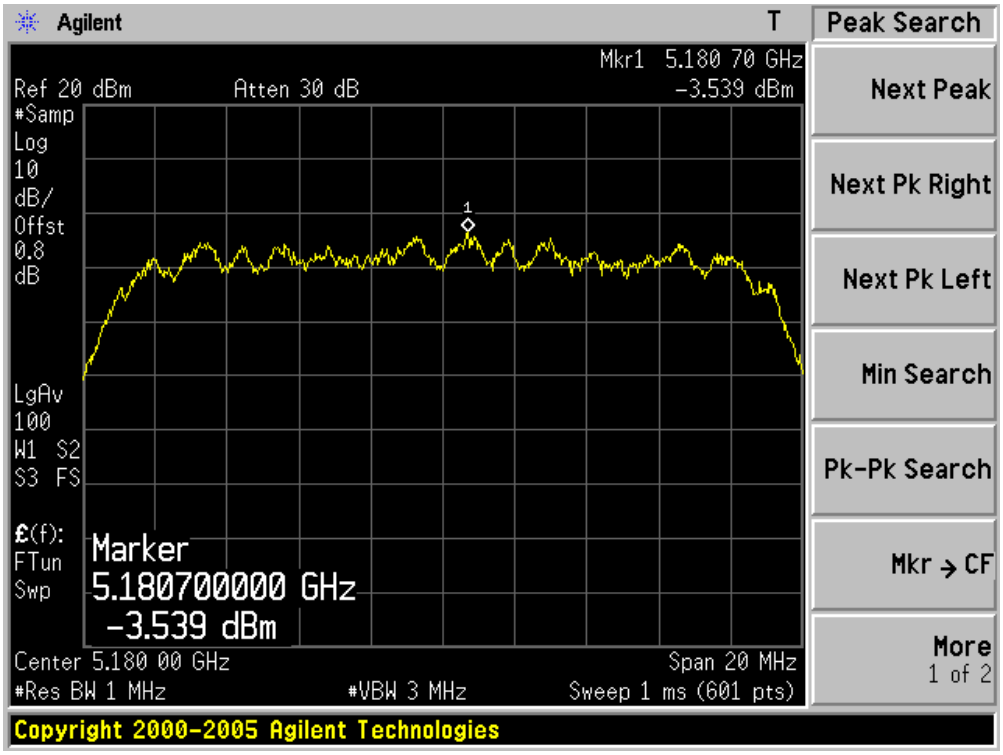
Channel 48 (5240MHz)



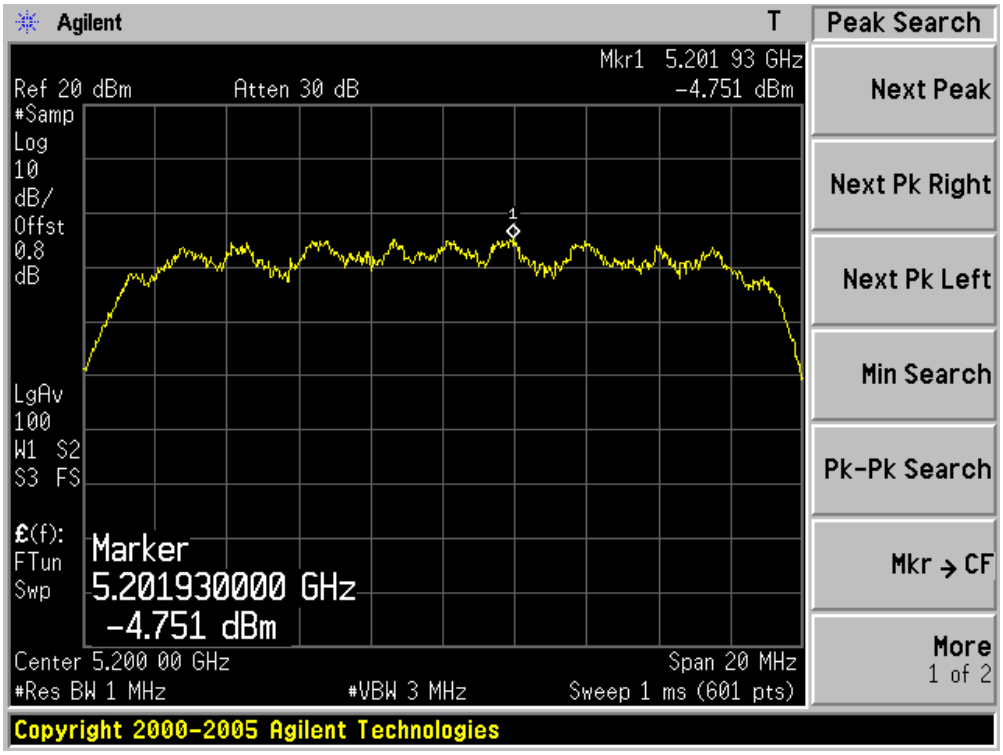
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n(20MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
36	5180	-3.539	-3.519	-0.519	4.0	Pass
40	5200	-4.751	-3.078	-0.824	4.0	Pass
48	5240	-5.085	-4.240	-1.630	4.0	Pass

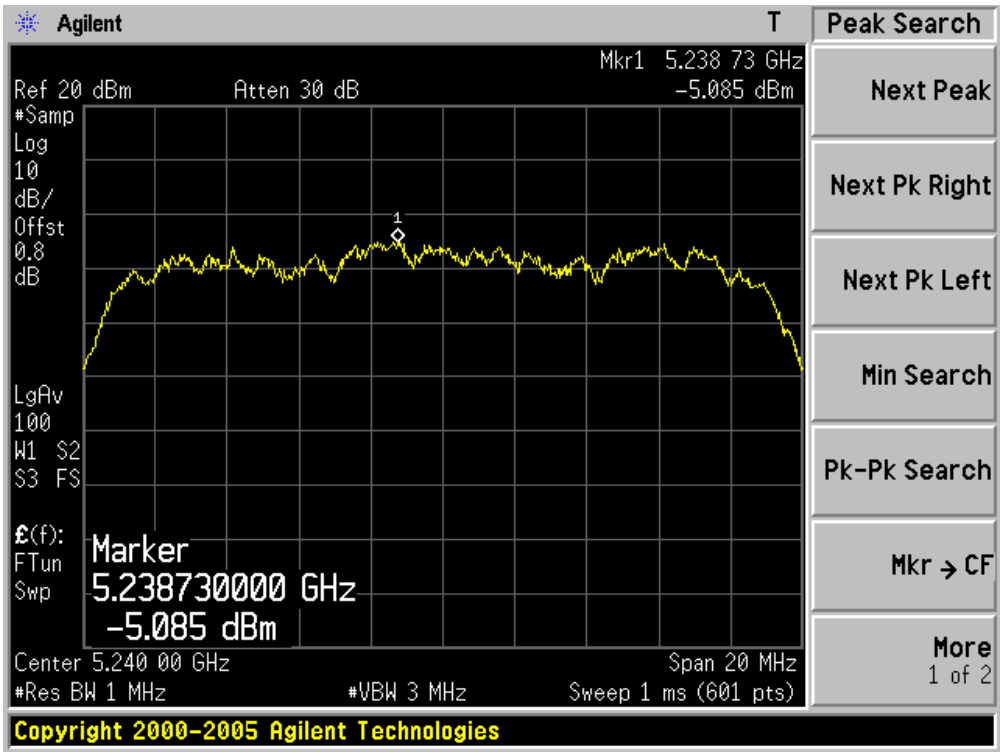
Channel 36 (5180MHz) - Chain 0



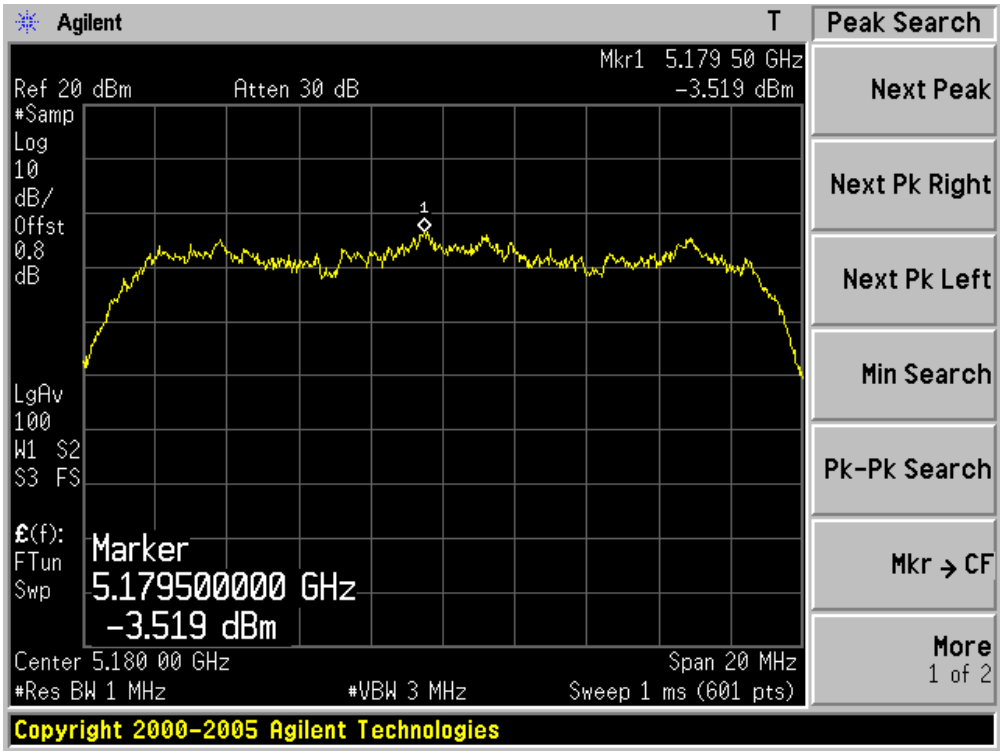
Channel 40 (5200MHz) - Chain 0



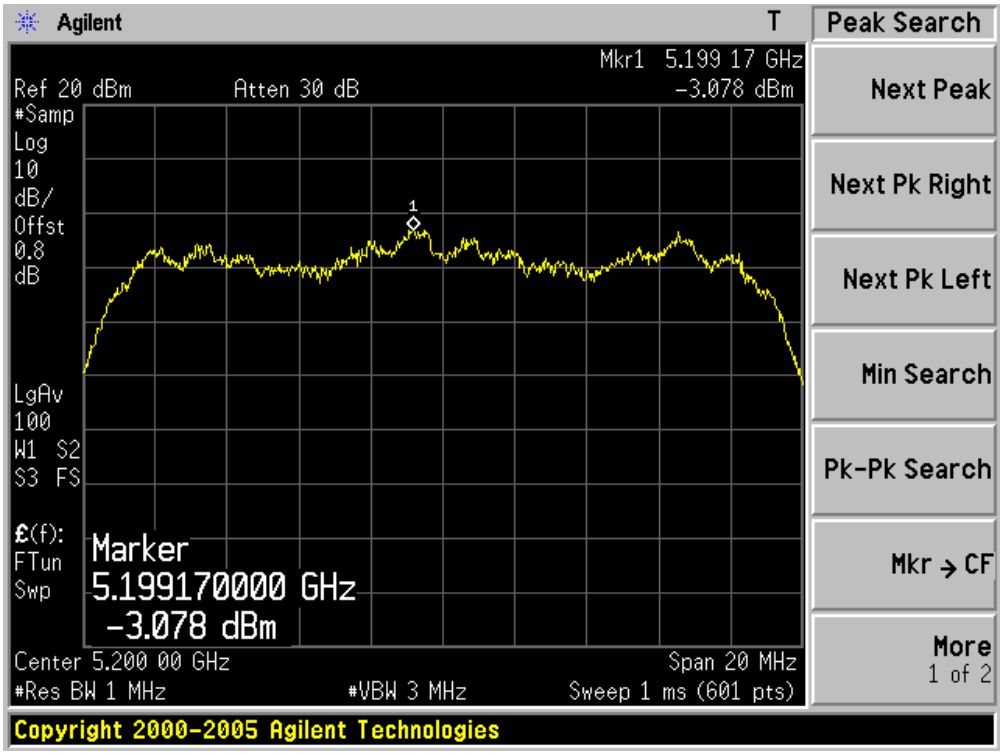
Channel 48 (5240MHz) - Chain 0



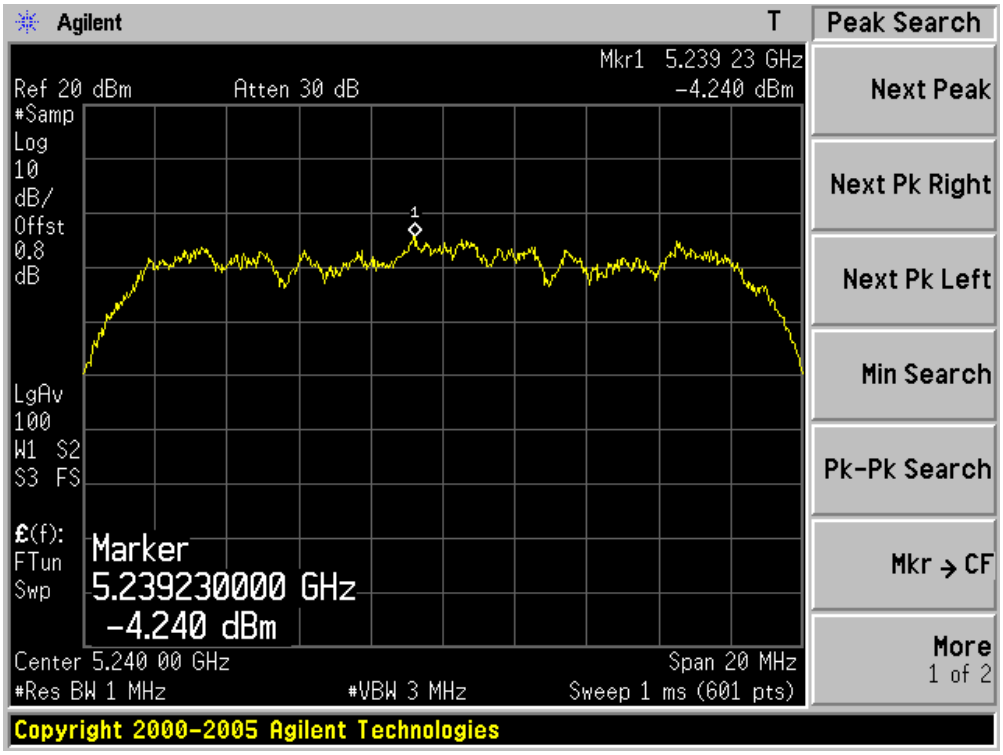
Channel 36 (5180MHz) - Chain 1



Channel 40 (5200MHz) - Chain 1



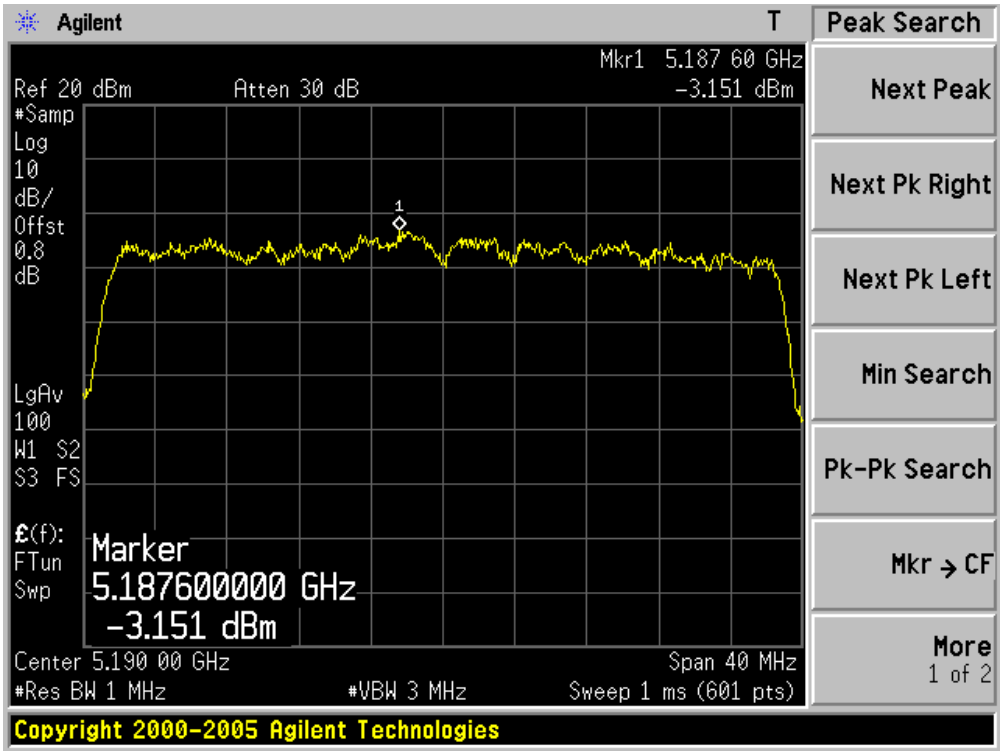
Channel 48 (5240MHz) - Chain 1



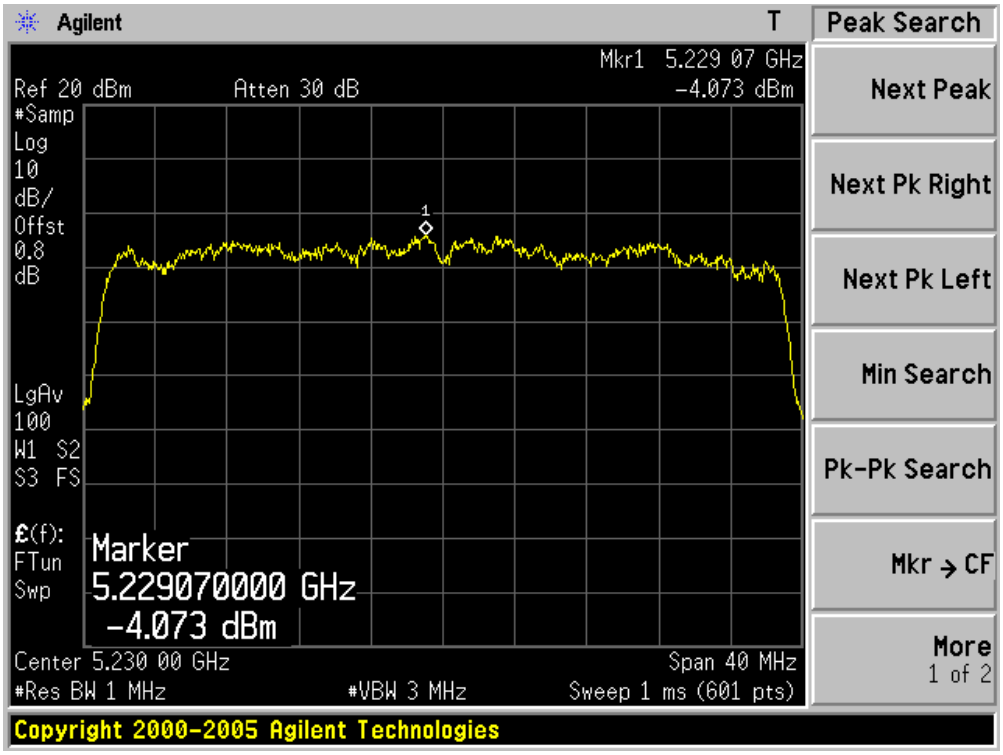
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 0)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
38	5190	-3.151	N/A	-3.151	4.0	Pass
46	5230	-4.073	N/A	-4.073	4.0	Pass

Channel 38 (5190MHz)



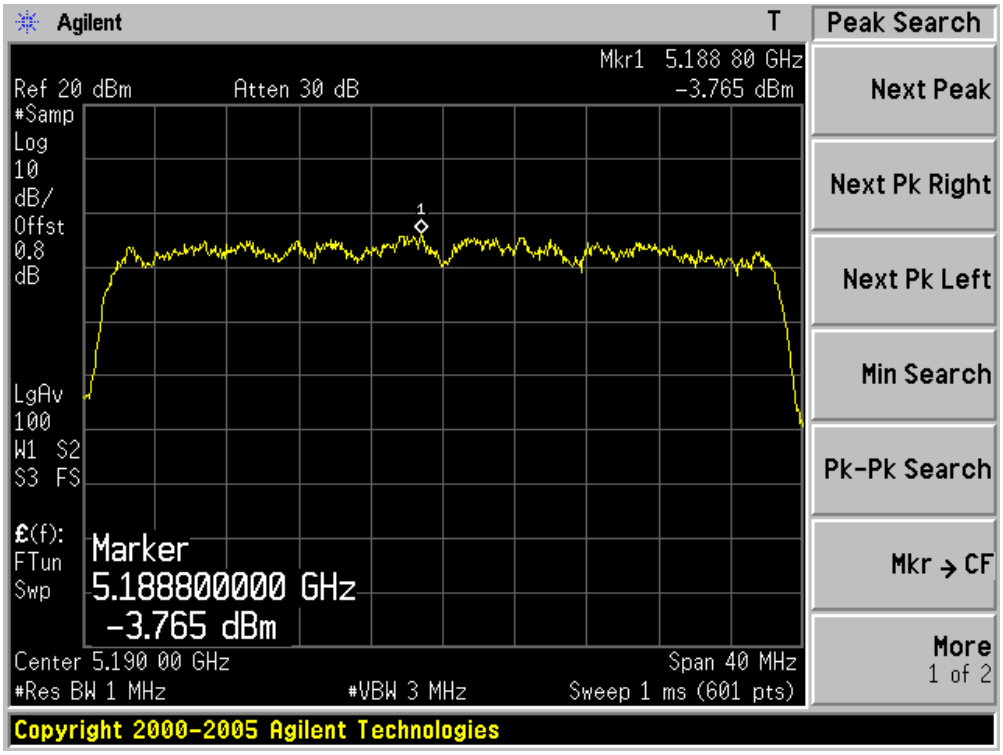
Channel 46 (5230MHz)



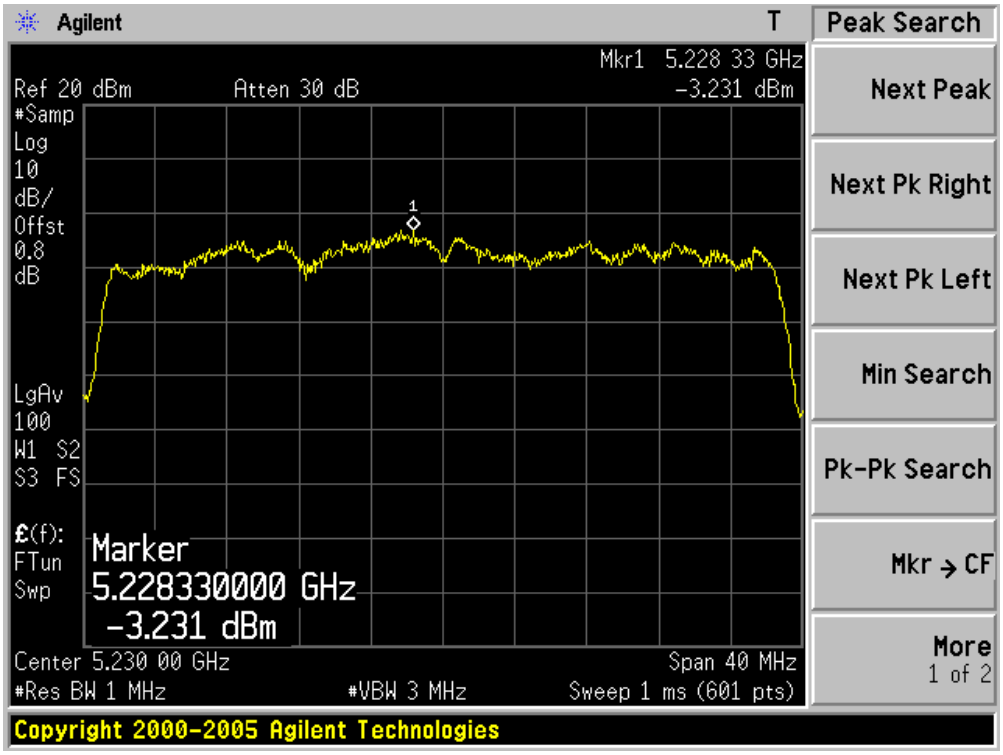
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
38	5190	N/A	-3.765	-3.765	4.0	Pass
46	5230	N/A	-3.231	-3.231	4.0	Pass

Channel 38 (5190MHz)



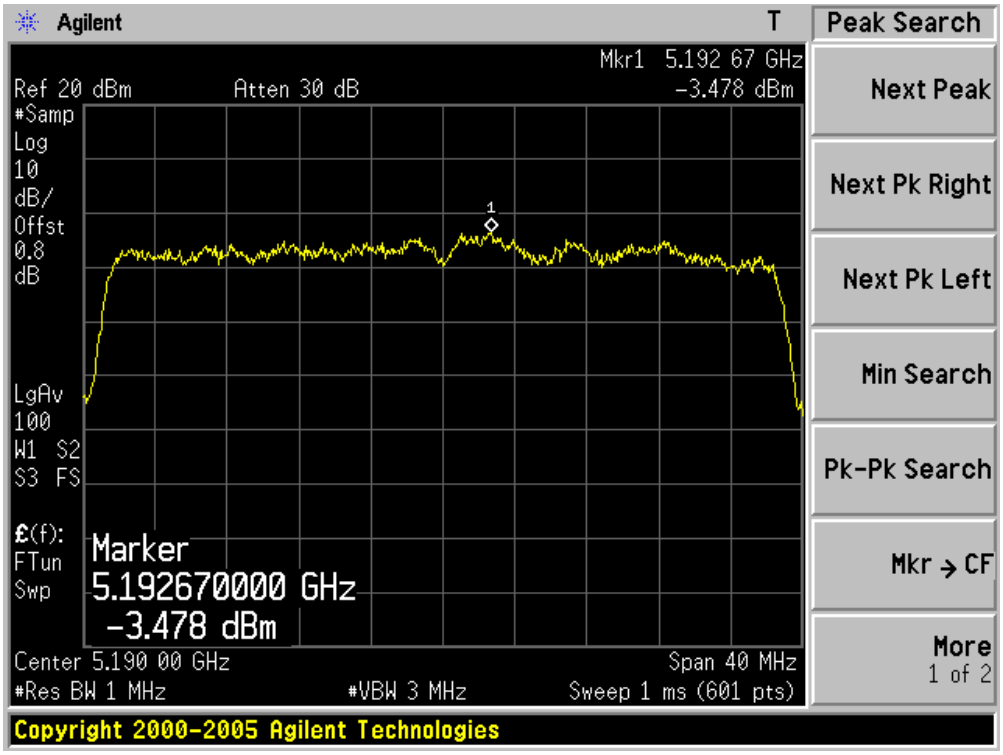
Channel 46 (5230MHz)



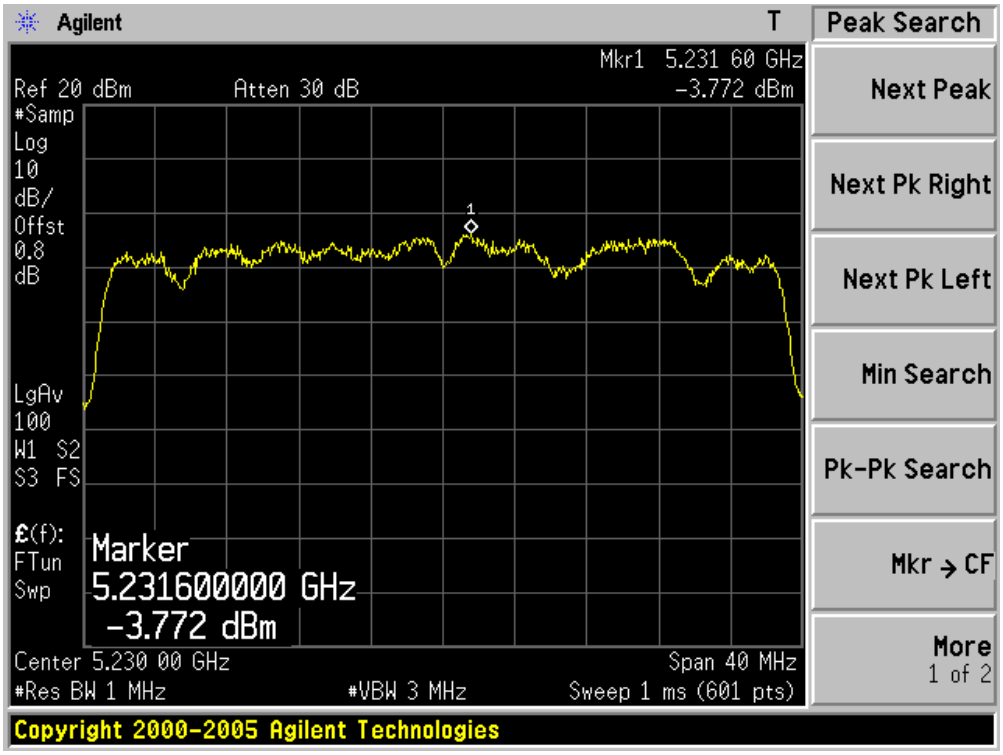
Product	:	IP-STB
Test Item	:	Peak Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n(40MHz) (Chain 0+1)

Channel No.	Frequency (MHz)	Measurement PPSD (dBm/MHz)		Total PPSD (dBm/MHz)	Limit (dBm/MHz)	Result
		Chain 0	Chain 1			
38	5190	-3.478	-4.591	-0.989	4.0	Pass
46	5230	-3.772	-4.464	-1.094	4.0	Pass

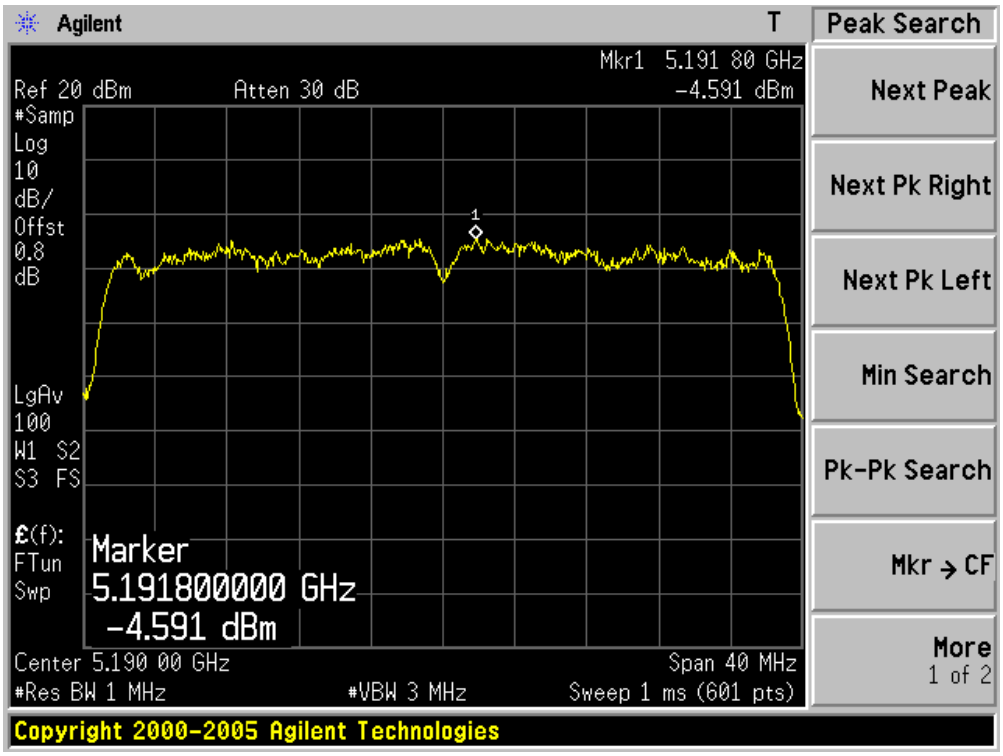
Channel 38 (5190MHz) - Chain 0



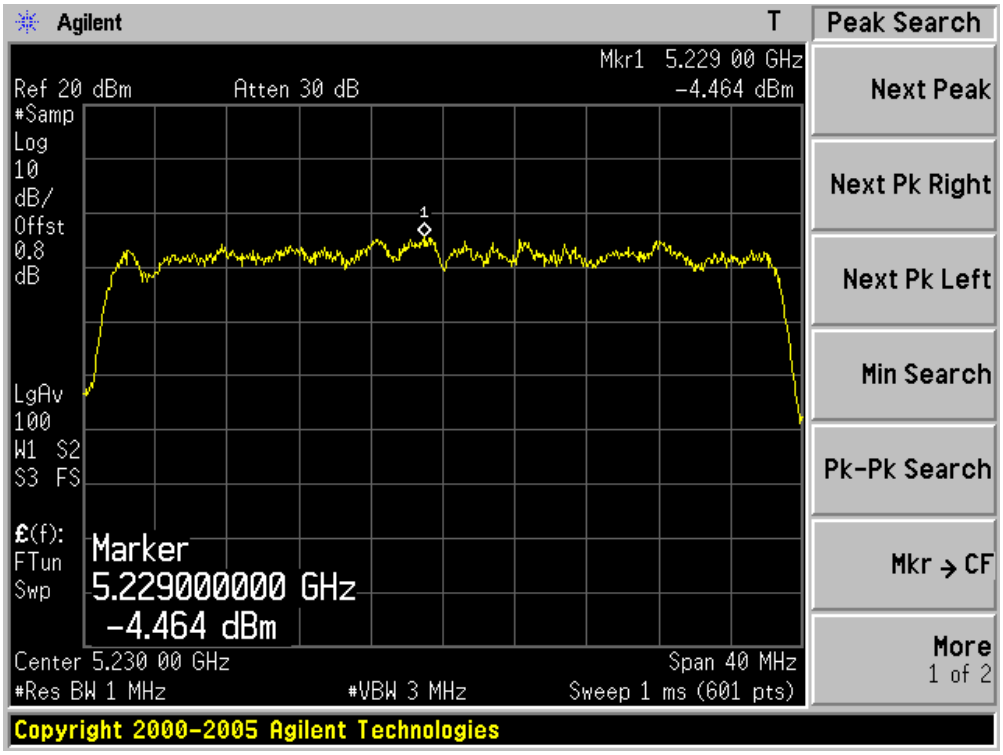
Channel 46 (5230MHz) - Chain 0



Channel 38 (5190MHz) - Chain 1



Channel 46 (5230MHz) - Chain 1



9. Peak Excursion

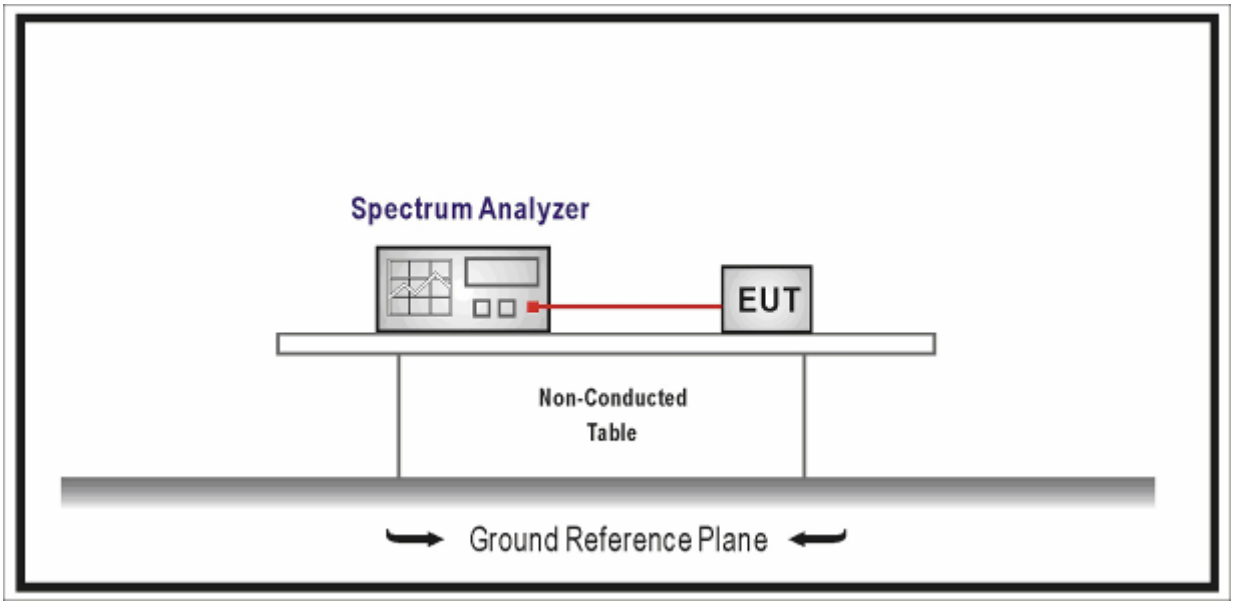
9.1. Test Equipment

Peak Excursion / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

9.2. Test Setup



9.3. Limit

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

9.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

Set the spectrum analyzer span to view the entire emission bandwidth. The largest difference between the following two traces must be ≤ 13 dB for all frequencies across the emission bandwidth.

- 1st Trace: Set RBW = 1 MHz, VBW ≥ 3 MHz with peak detector and maxhold settings.
- 2nd Trace: Set RBW = 1 MHz, VBW = 30 kHz with peak detector and maxhold settings.

9.5. Uncertainty

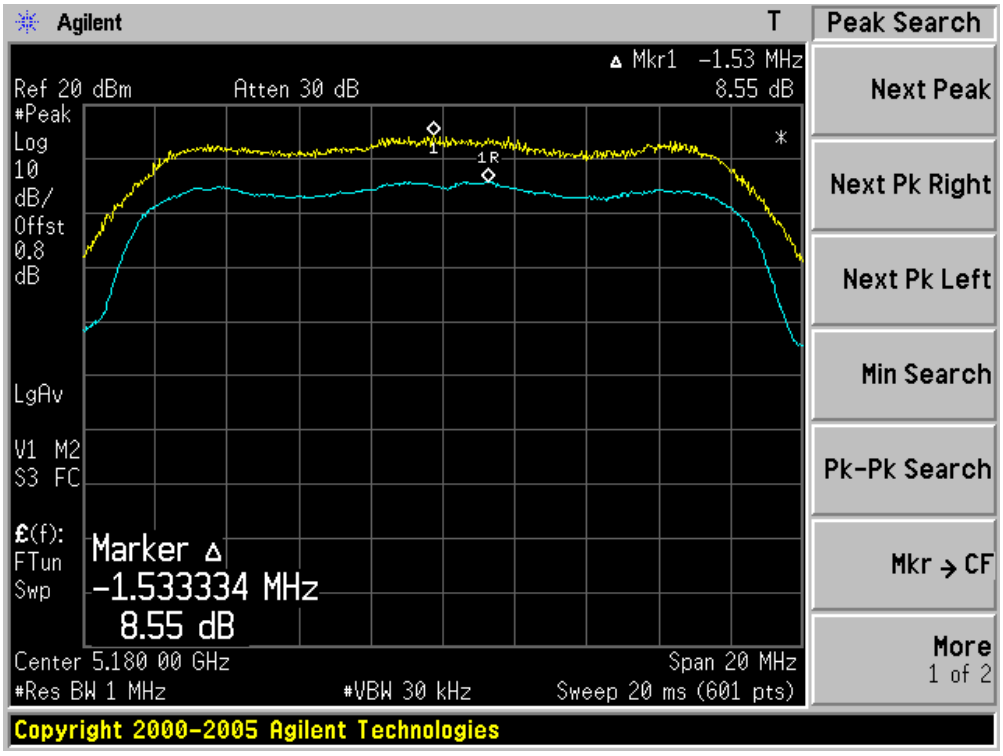
The measurement uncertainty is defined as ± 1.27 dB

9.6. Test Result

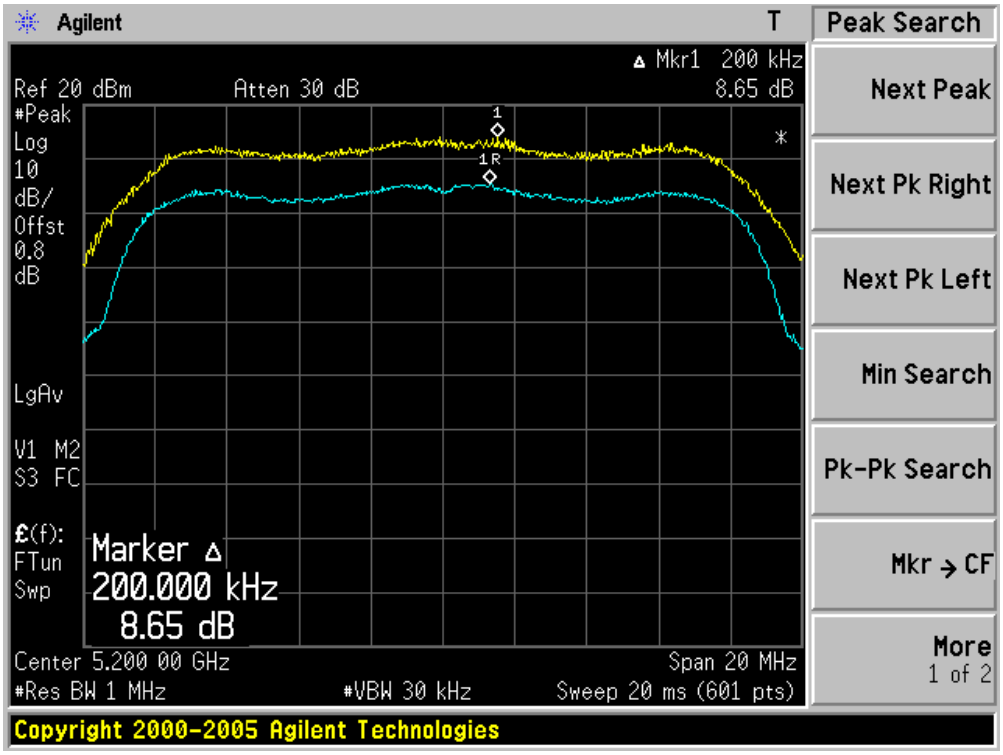
Product	:	IP-STB
Test Item	:	Peak Excursion
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 0)

Channel No.	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Result
36	5180	8.55	13	Pass
40	5200	8.65	13	Pass
48	5240	8.69	13	Pass

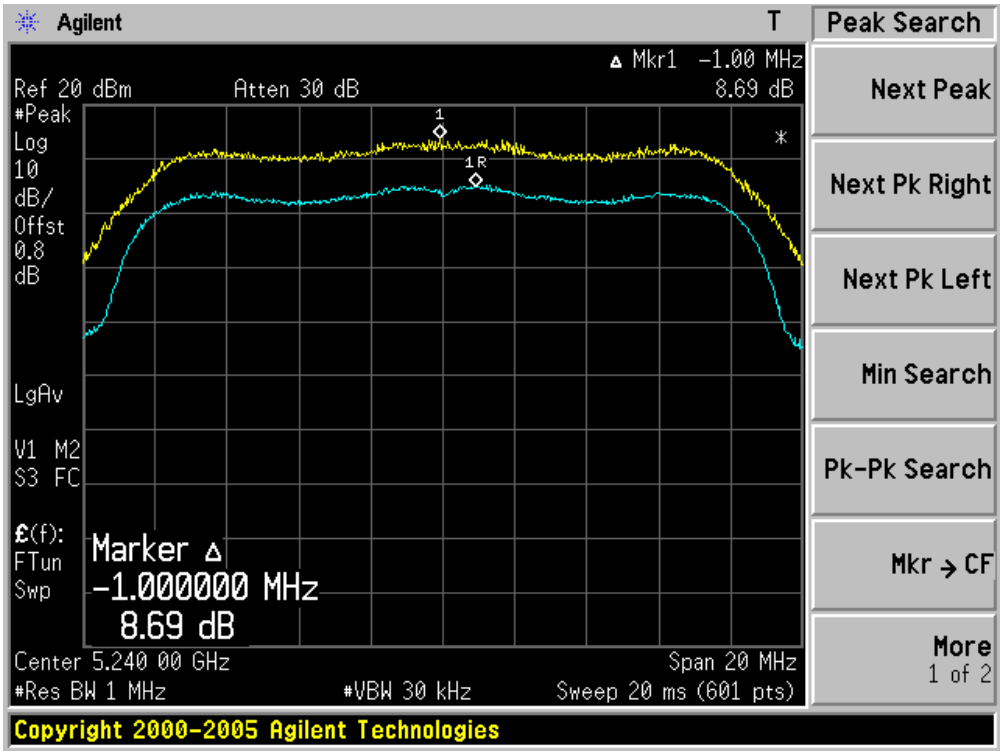
Channel 36 (5180MHz)



Channel 40 (5200MHz)



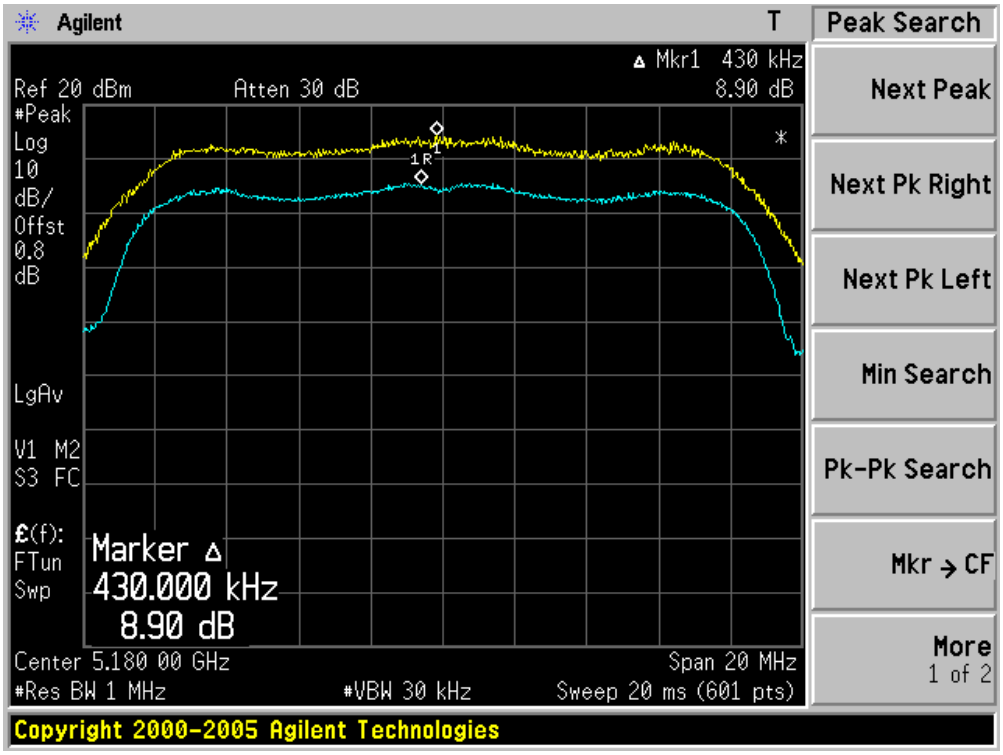
Channel 48 (5240MHz)



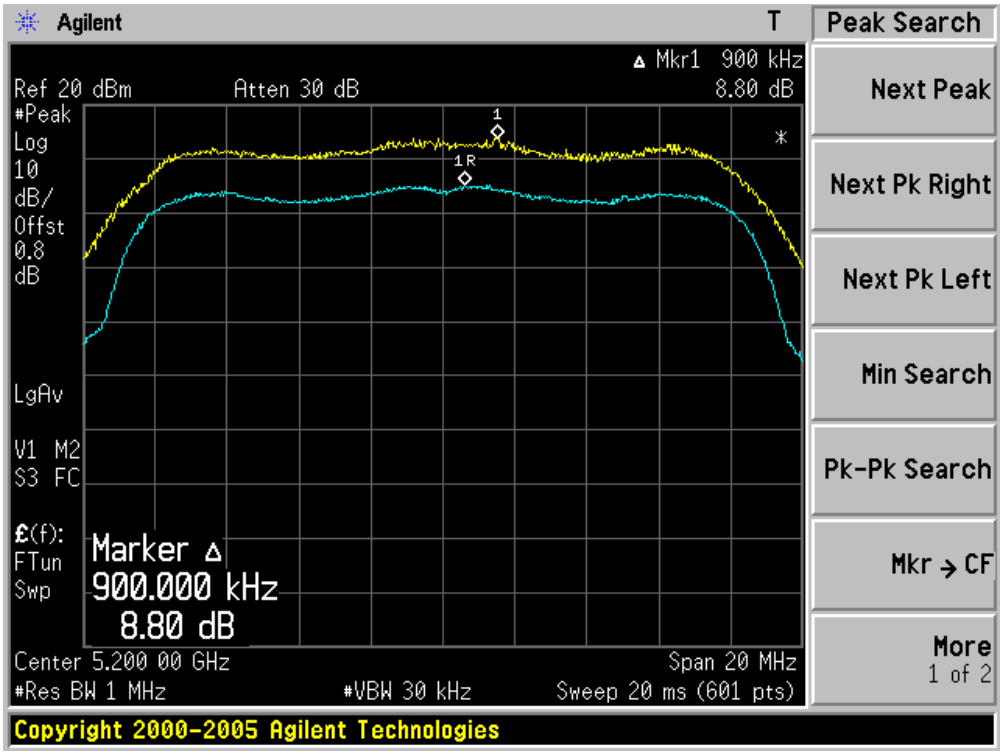
Product	:	IP-STB
Test Item	:	Peak Excursion
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Result
36	5180	8.90	13	Pass
40	5200	8.80	13	Pass
48	5240	8.65	13	Pass

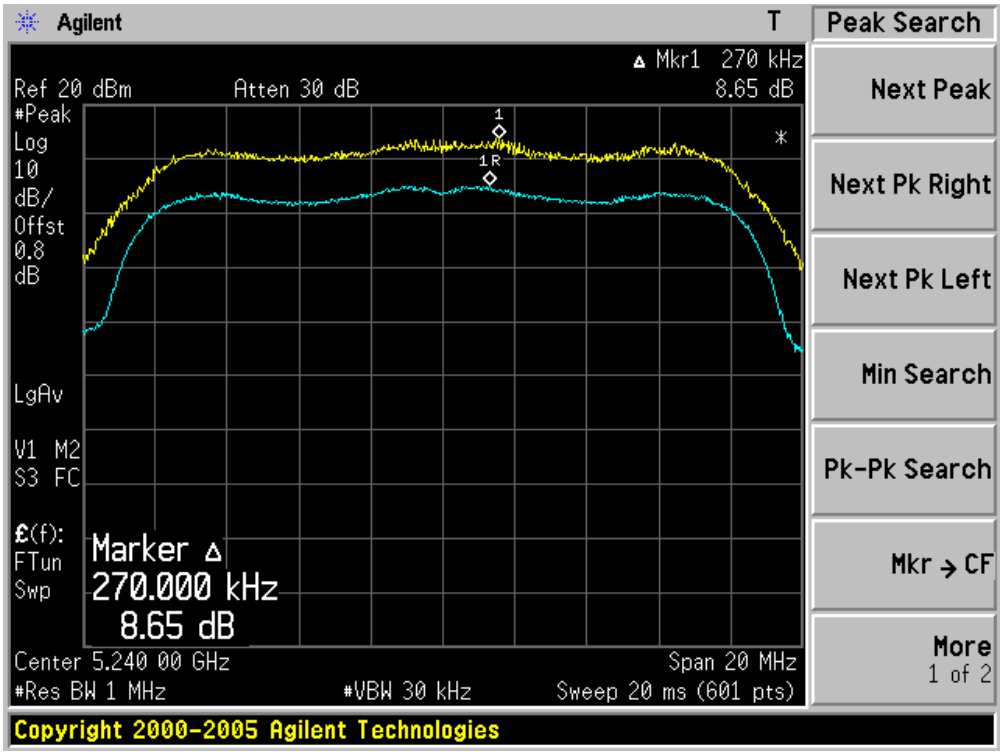
Channel 36 (5180MHz)



Channel 40 (5200MHz)



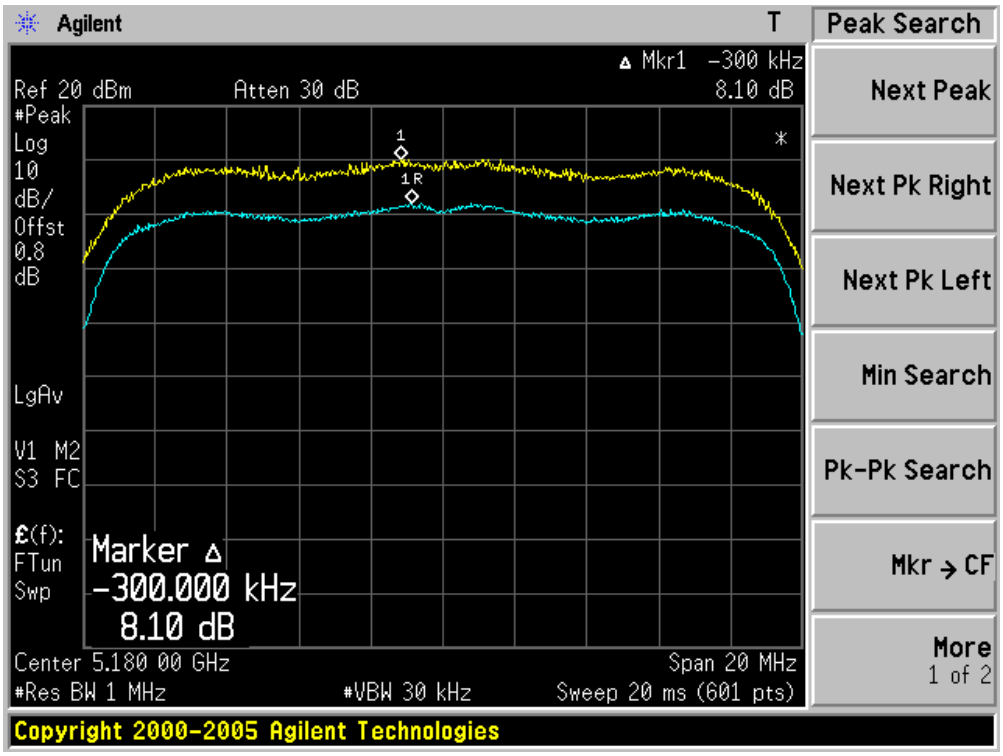
Channel 48 (5240MHz)



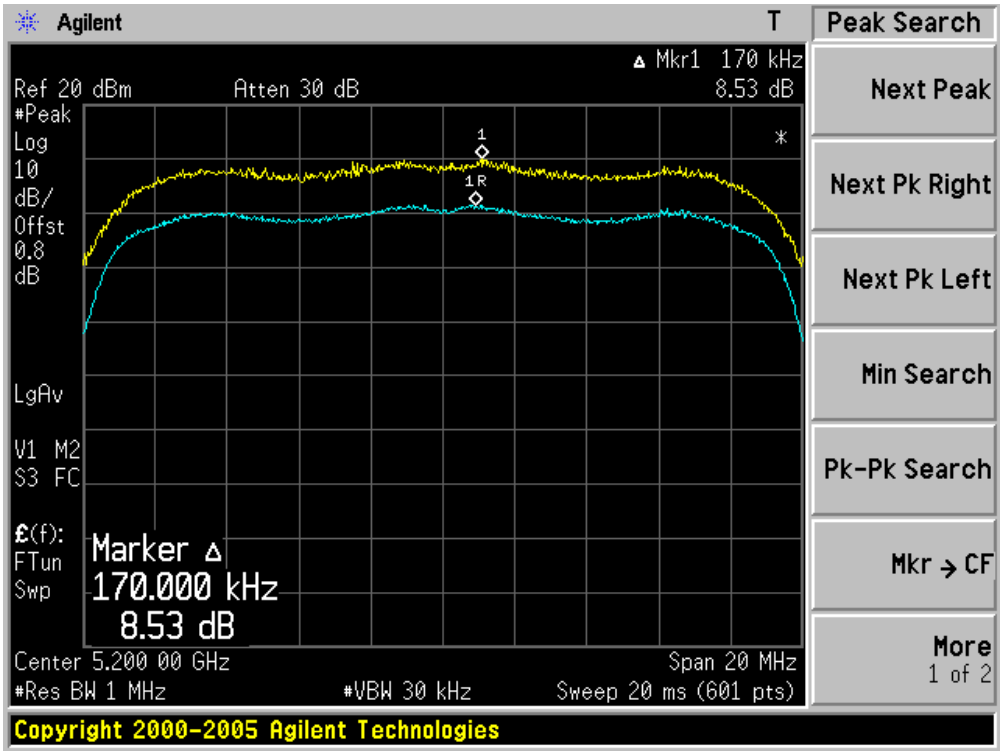
Product	:	IP-STB
Test Item	:	Peak Excursion
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n (20MHz) (Chain 0)

Channel No.	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Result
36	5180	8.10	13	Pass
40	5200	8.53	13	Pass
48	5240	8.01	13	Pass

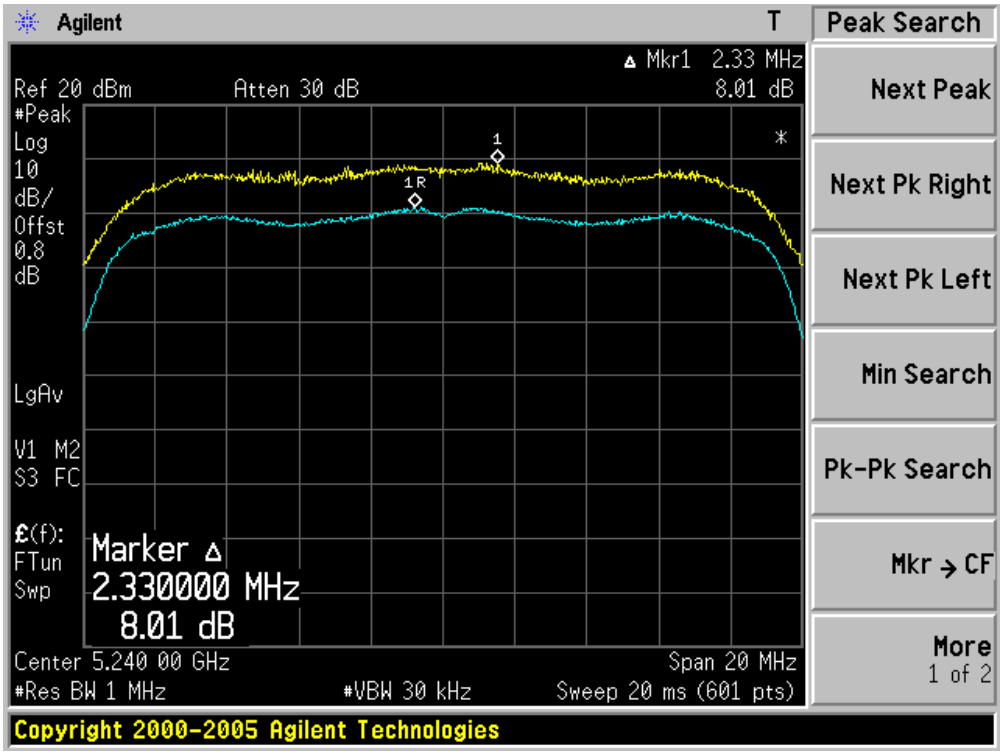
Channel 36 (5180MHz)



Channel 40 (5200MHz)



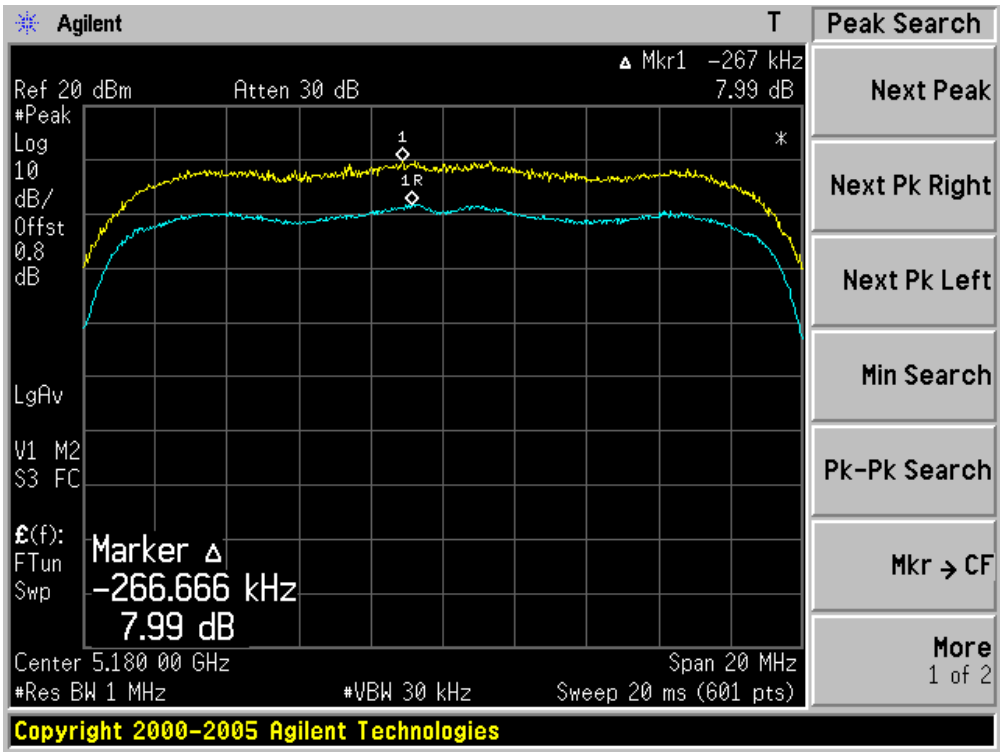
Channel 48 (5240MHz)



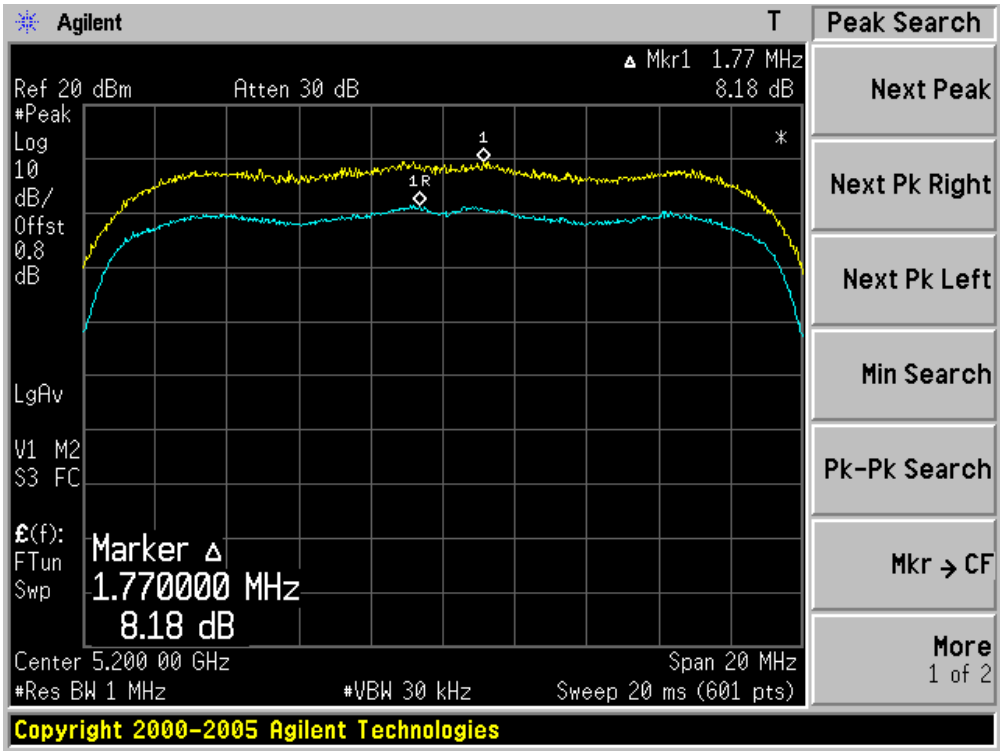
Product	:	IP-STB
Test Item	:	Peak Excursion
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11n (20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Result
36	5180	7.99	13	Pass
40	5200	8.18	13	Pass
48	5240	8.12	13	Pass

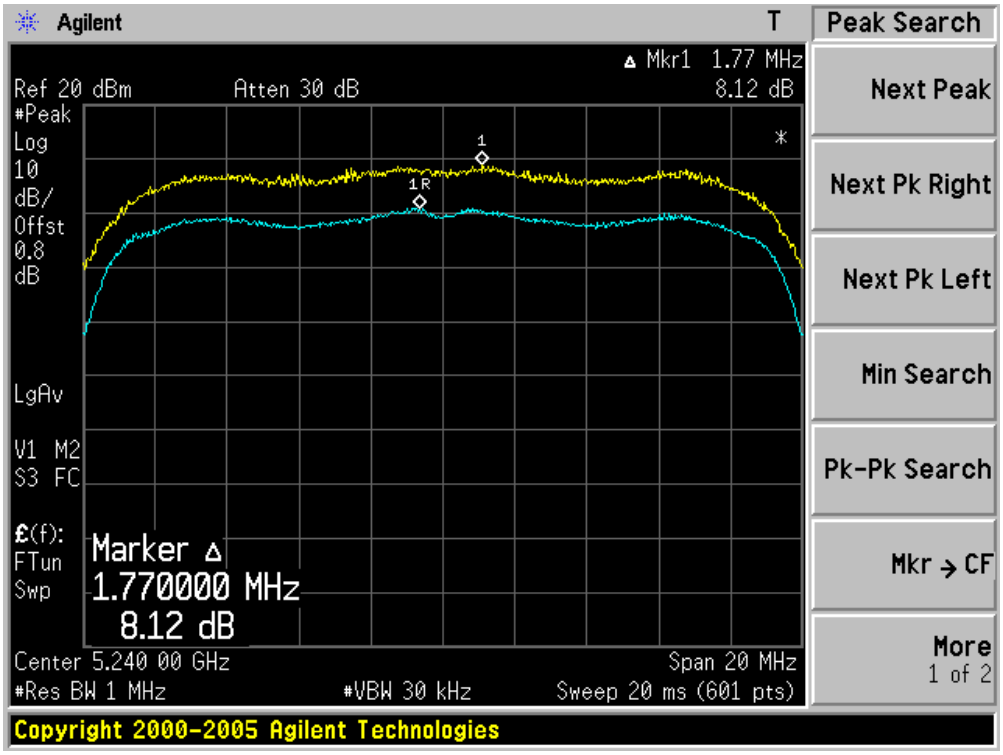
Channel 36 (5180MHz)



Channel 40 (5200MHz)



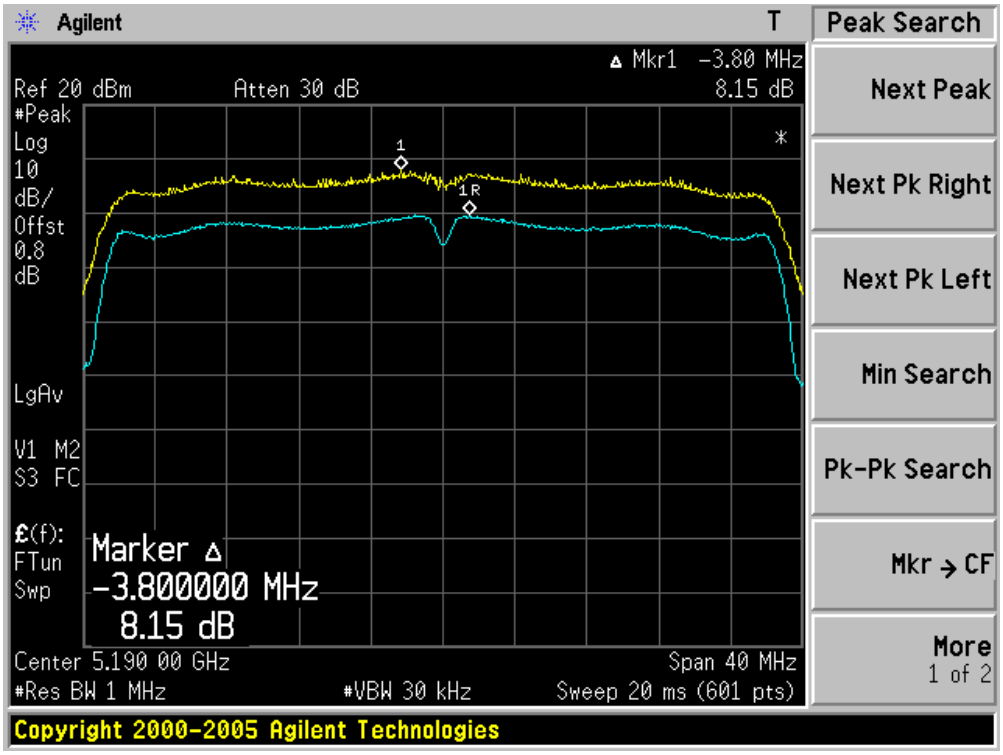
Channel 48 (5240MHz)



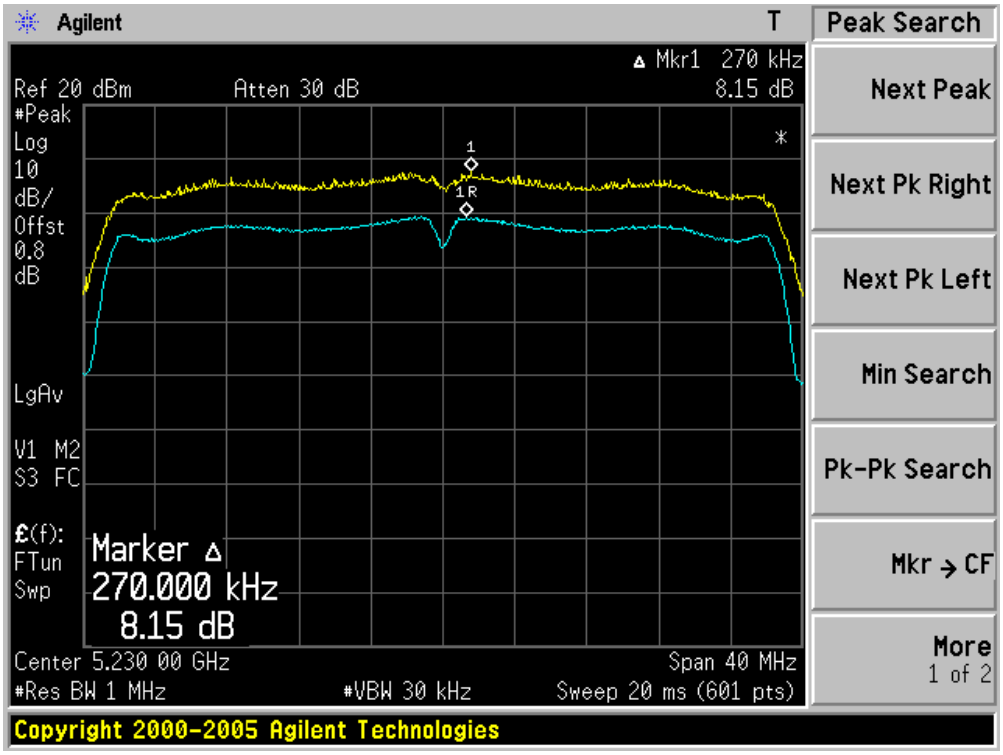
Product	:	IP-STB
Test Item	:	Peak Excursion
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 0)

Channel No.	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Result
38	5190	8.15	13	Pass
46	5230	8.15	13	Pass

Channel 38 (5190MHz)



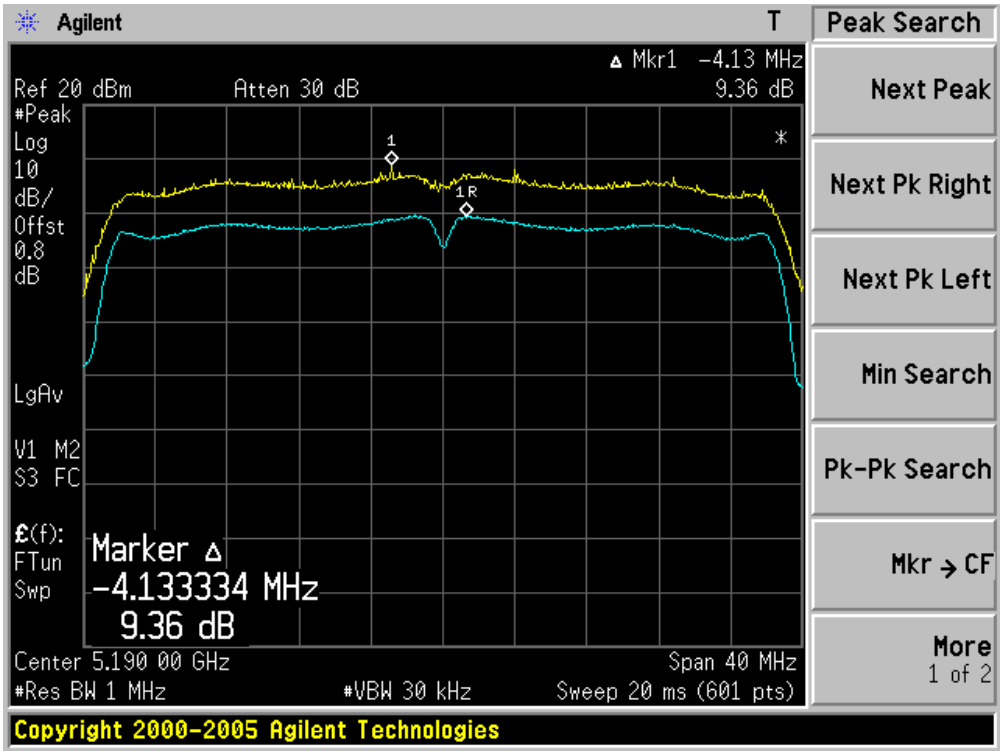
Channel 46 (5230MHz)



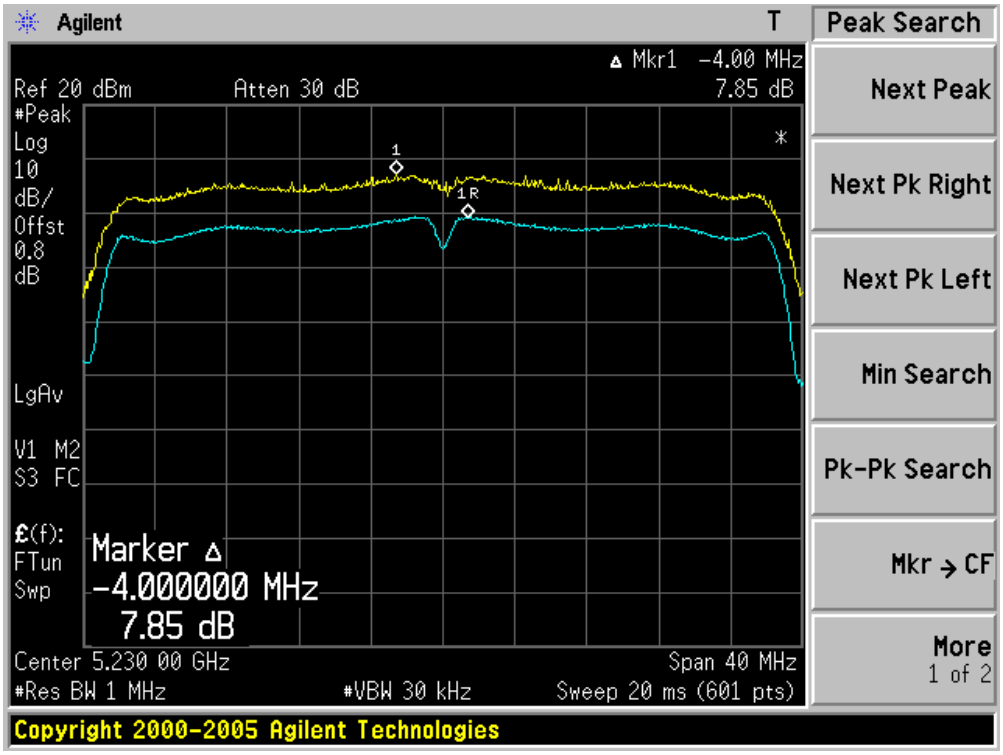
Product	:	IP-STB
Test Item	:	Peak Excursion
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11n (40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Peak Excursion (dB)	Limit (dB)	Result
38	5190	9.36	13	Pass
46	5230	7.85	13	Pass

Channel 38 (5190MHz)



Channel 46 (5230MHz)



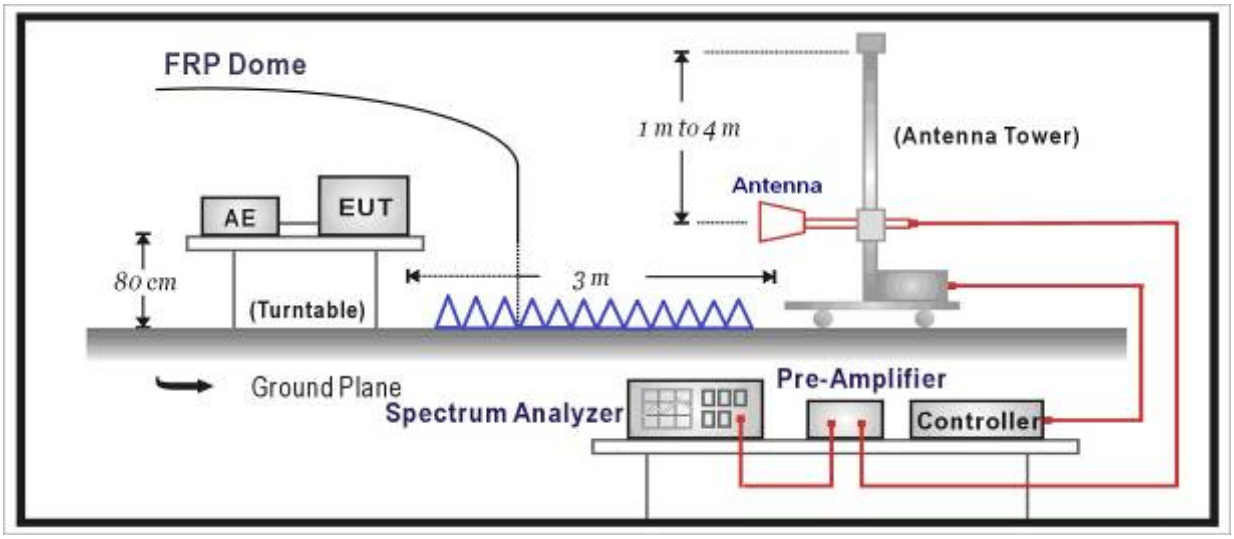
10. Radiated Emission Band Edge

10.1. Test Equipment

☒Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	QuieTek	AP-040G	CHM-0906001	2013.05.04
Bilog Type Antenna	Schaffner	CBL6112B	2932	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2014.06.08
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013.05.04
Temperature/Humidity Meter	zhicheng	ZC1-2	AC5-TH	2013.01.10

10.2. Test Setup



10.3. Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])

For 15.407(b) requirement:

- For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27dBm/MHz in the 5.15-5.25 GHz band.
- For transmitters operating in the 5.47-5.725 GHz band: all emission outside of the 5.47-5725 GHz band shall not exceed an EIRP of -27 dBm/MHz.
- For transmitters operating in the 5.725-5.825 GHz band: all emission within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.

Operating Frequency Band (MHz)	EIRP Limit (dBm/MHz)	Equivalent Field Strength at 3m (dBuV/m)
5150 - 5250	-27	68.3
5250 - 5350	-27	68.3
5470 - 5725	-27	68.3
5725 - 5825	-27 [Note(1)]	68.3
	-17 [Note(2)]	78.3
Note(1): Outsitde the frequency range 5715 - 5835MHz. Note(2): Within the frequency range from the band edge to 10MHz below or above the band edge, 5715 – 5725MHz and 5825 - 5835MHz.		

10.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 789033 for compliance to FCC 47CFR 15.407 requirements.

The EUT is placed on a turn table which is 0.8 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 from 1 meter to 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 C63.4:2009 on radiated measurement.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 10~60 degrees for H-plane and 10~90 degrees for E-plane.

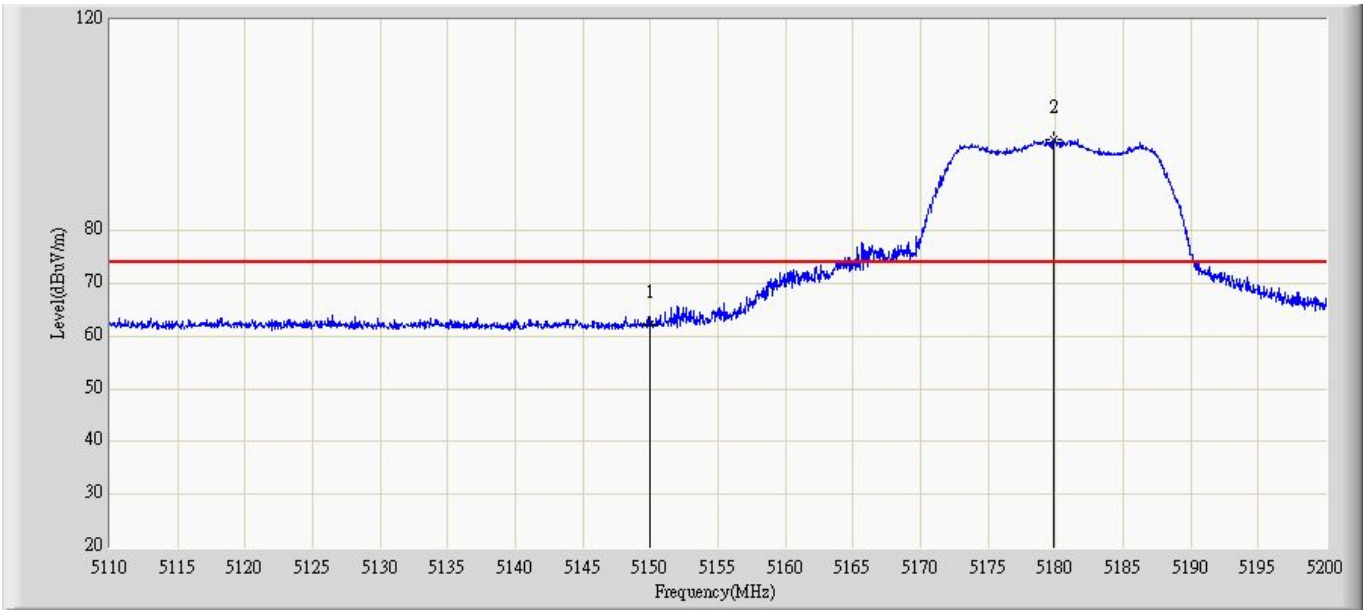
10.5. Uncertainty

The measurement uncertainty above 1GHz is defined as ± 3.9 dB

10.6. Test Result

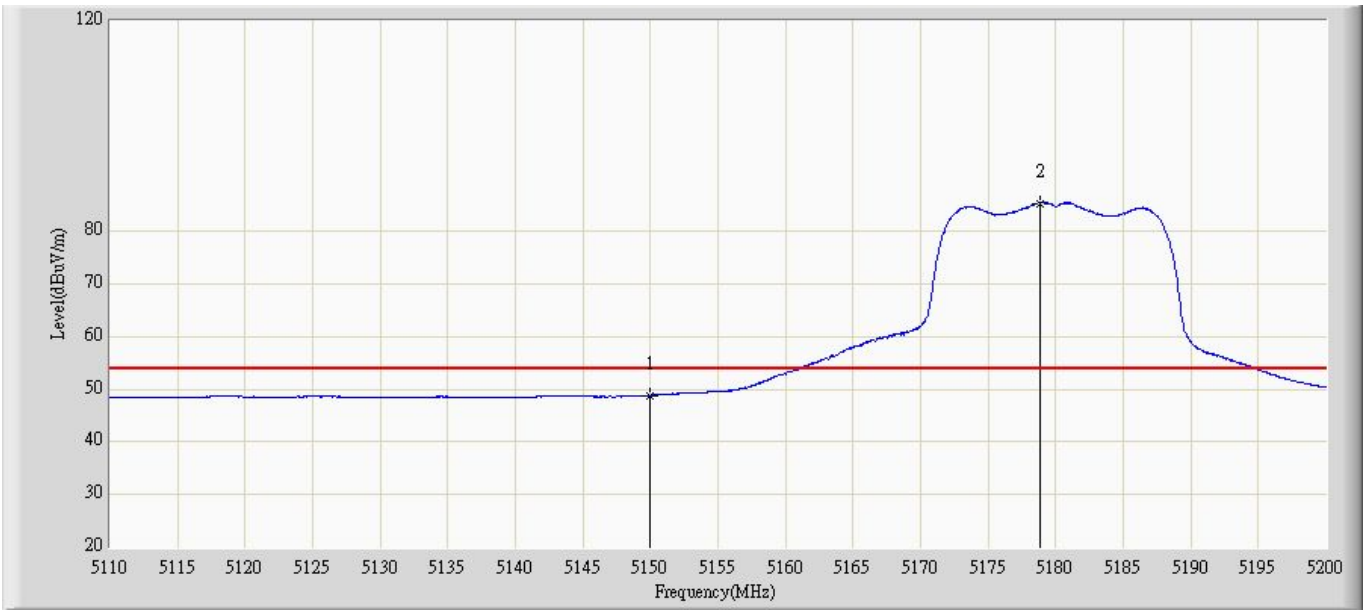
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 0	



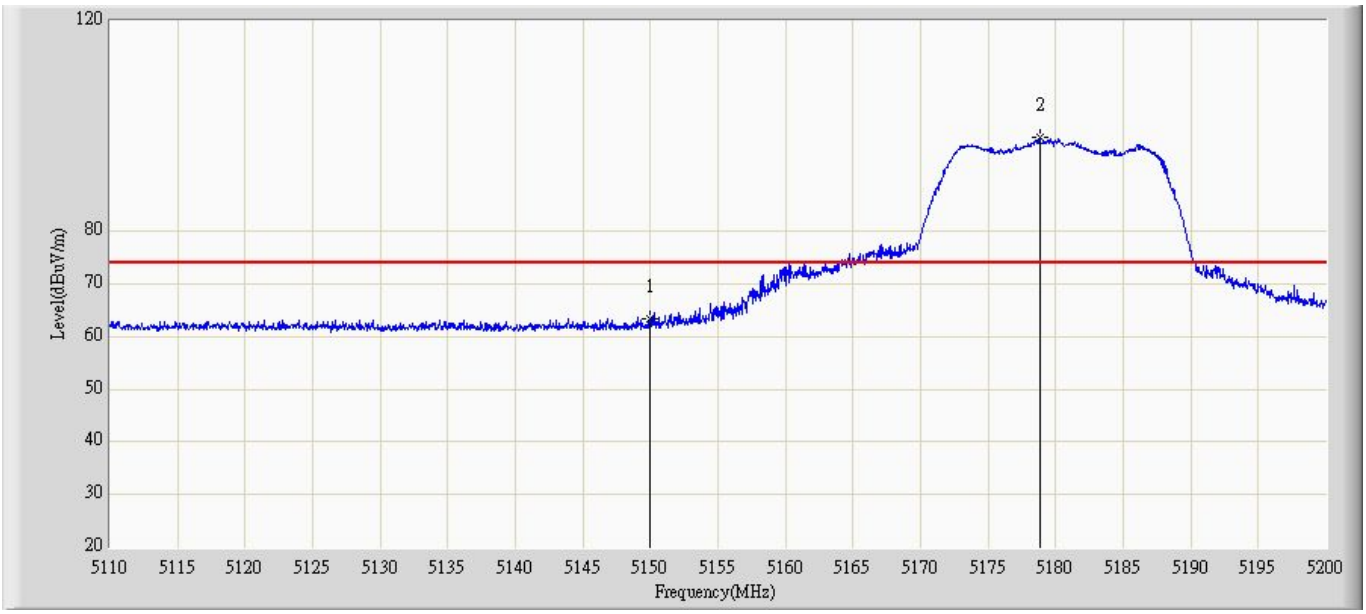
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	62.138	70.358	-11.862	74.000	-8.220	PK
2		*	5179.840	97.196	105.423	N/A	N/A	-8.226	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 0	



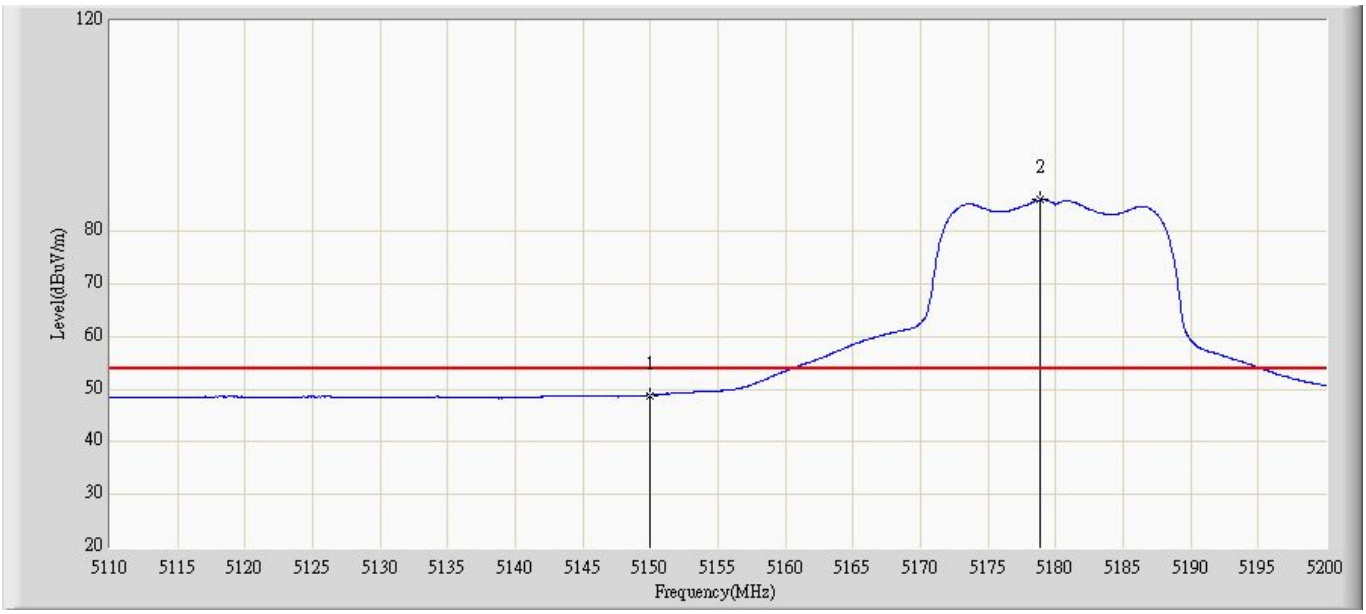
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.838	57.058	-5.162	54.000	-8.220	AV
2		*	5178.805	85.371	93.598	N/A	N/A	-8.227	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:25
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 0	



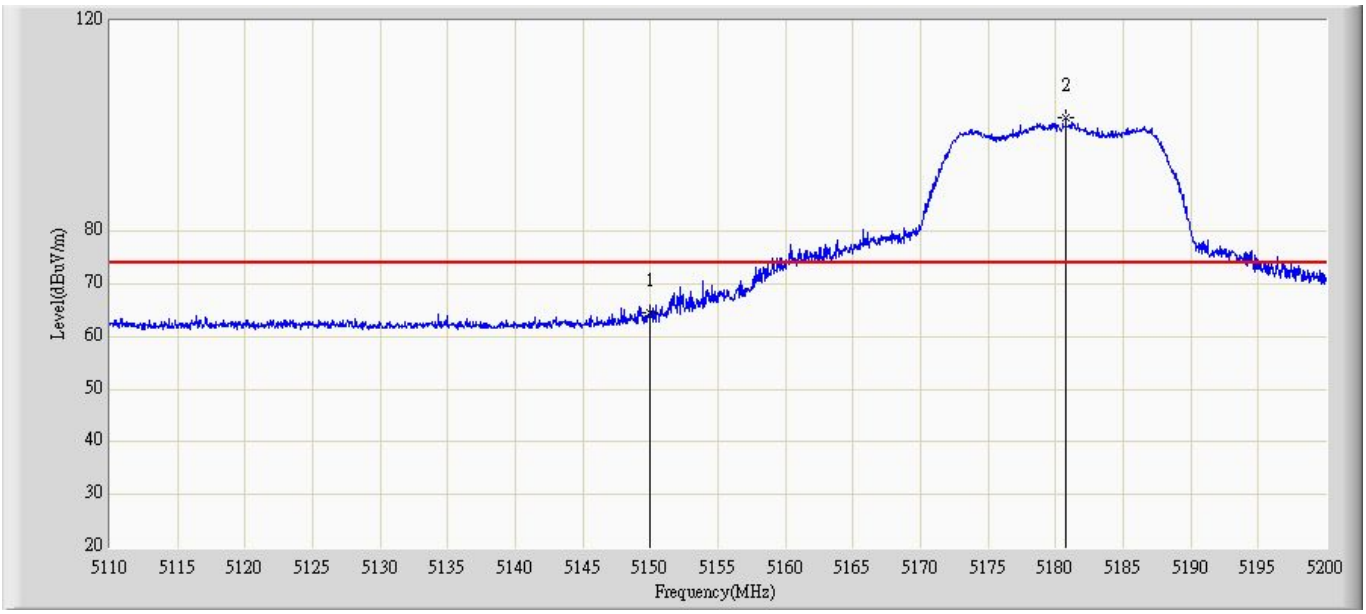
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	63.265	71.485	-10.735	74.000	-8.220	PK
2		*	5178.850	98.009	106.236	N/A	N/A	-8.227	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 0	



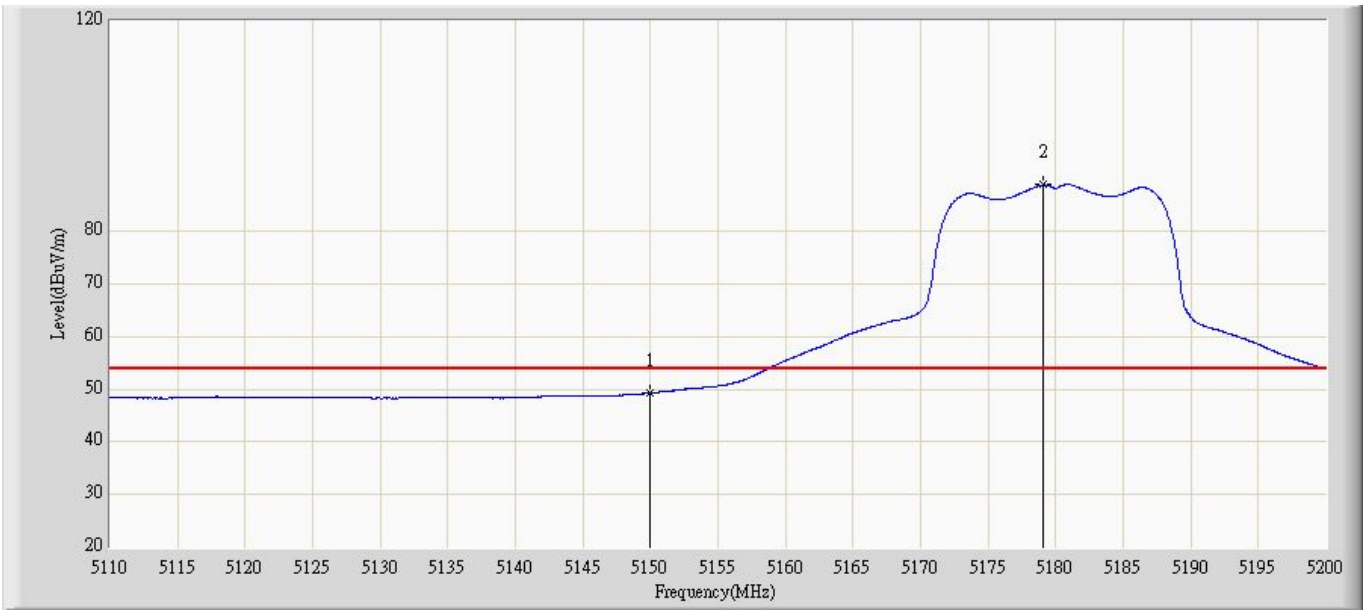
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.874	57.094	-5.126	54.000	-8.220	AV
2		*	5178.895	86.001	94.228	N/A	N/A	-8.227	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 1	



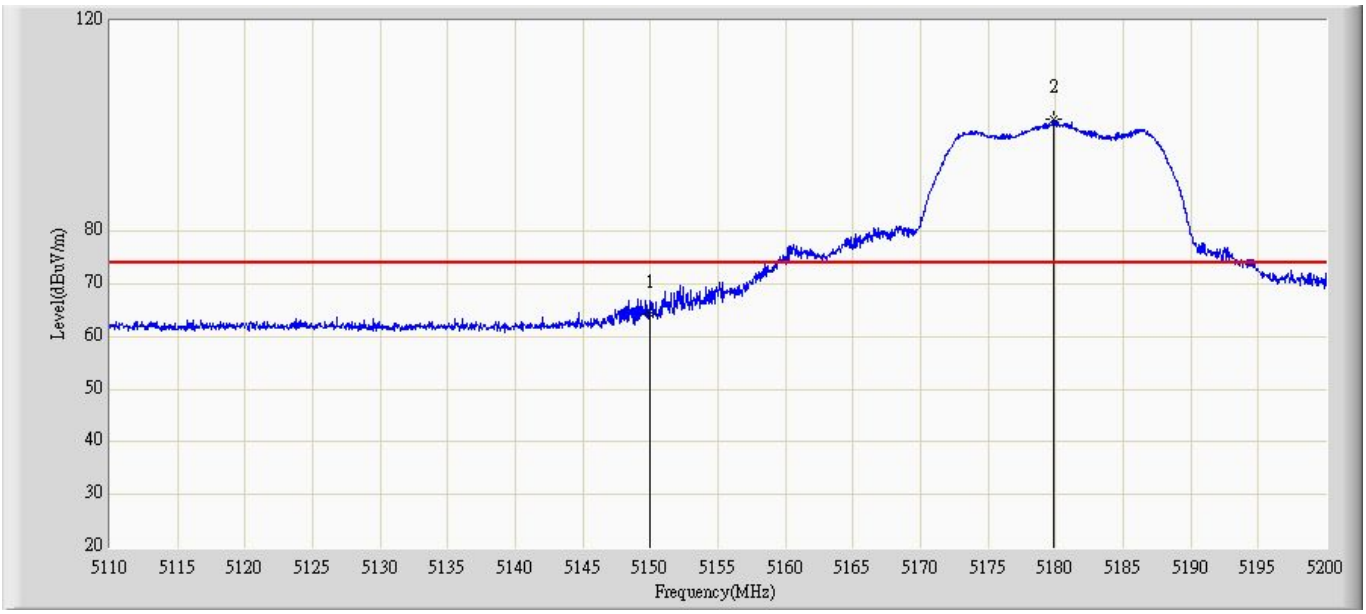
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	64.447	72.667	-9.553	74.000	-8.220	PK
2		*	5180.740	101.482	109.708	N/A	N/A	-8.227	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 1	



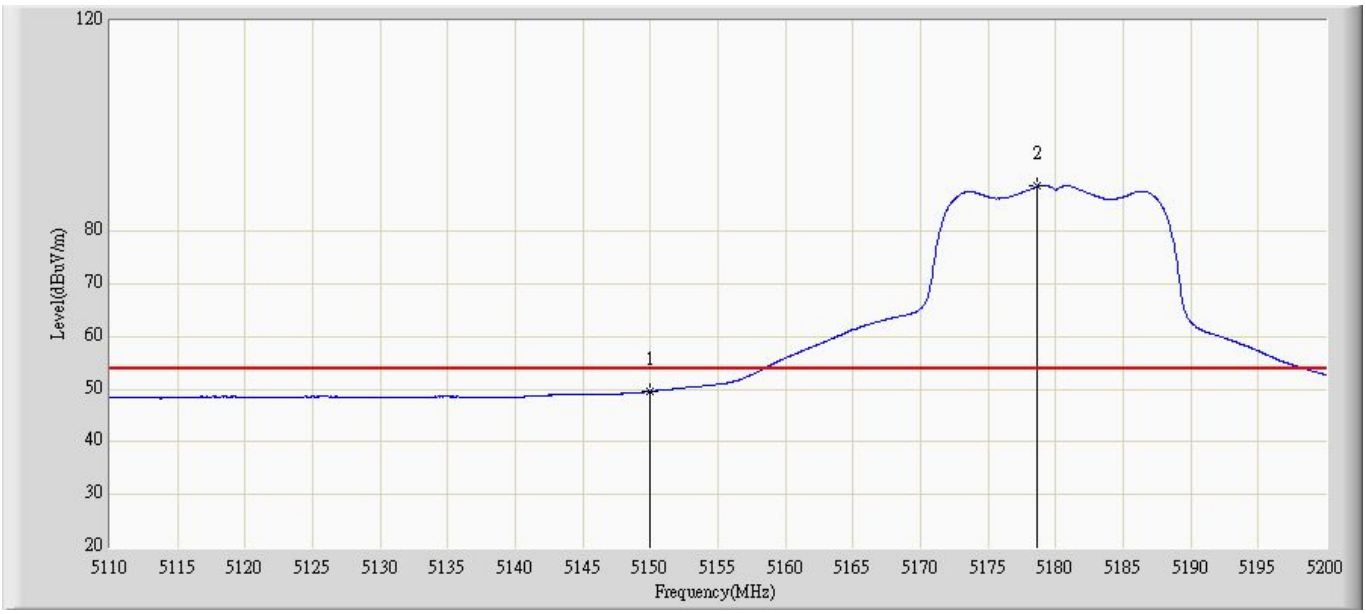
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	49.291	57.511	-4.709	54.000	-8.220	AV
2		*	5179.075	88.836	97.063	N/A	N/A	-8.228	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 1	



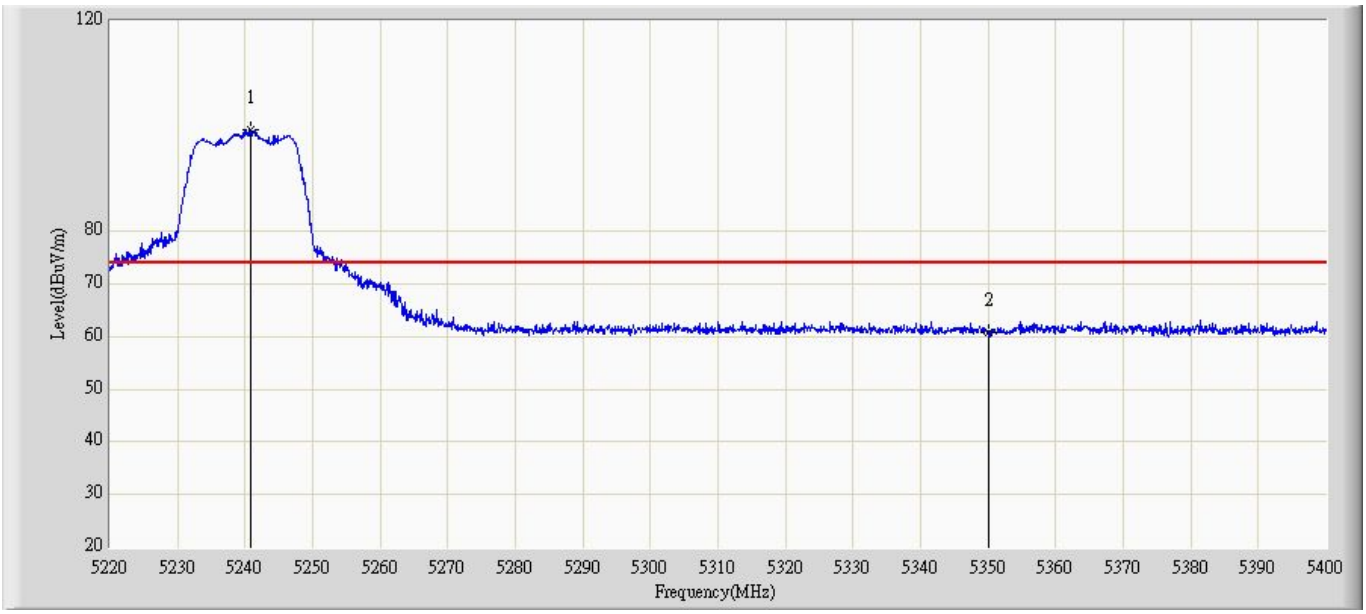
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	64.175	72.395	-9.825	74.000	-8.220	PK
2		*	5179.885	101.275	109.502	N/A	N/A	-8.226	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5180 MHz by 802.11a ant 1	



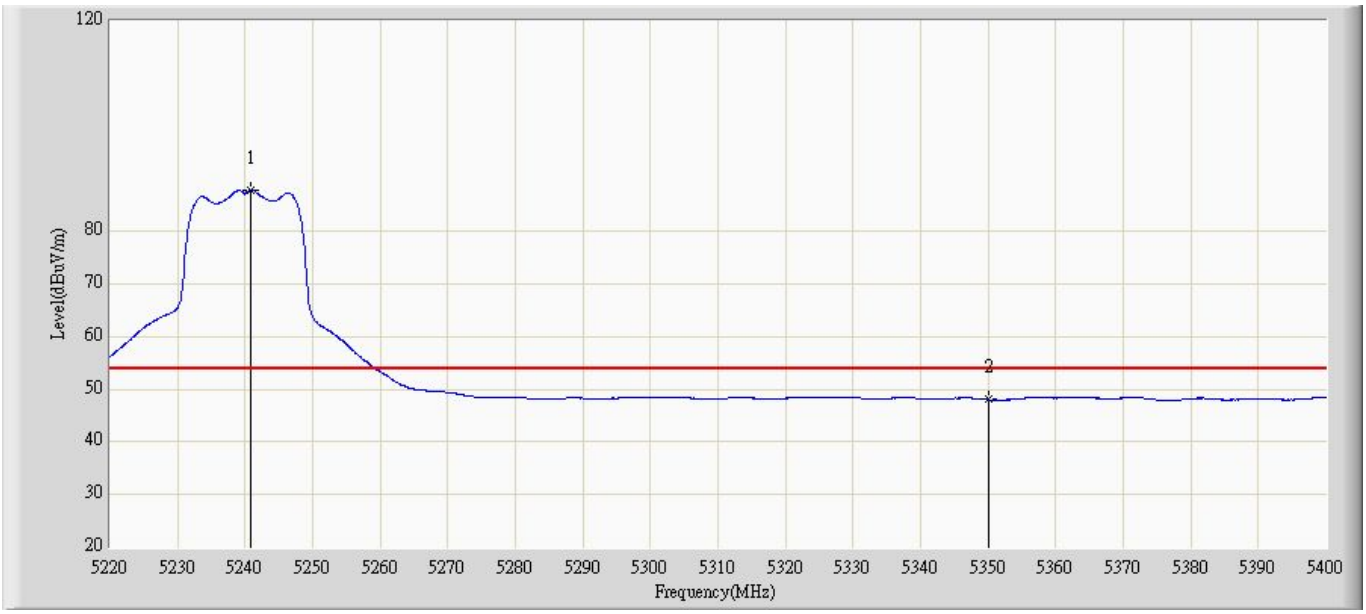
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	49.584	57.804	-4.416	54.000	-8.220	AV
2		*	5178.670	88.555	96.782	N/A	N/A	-8.227	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 0	



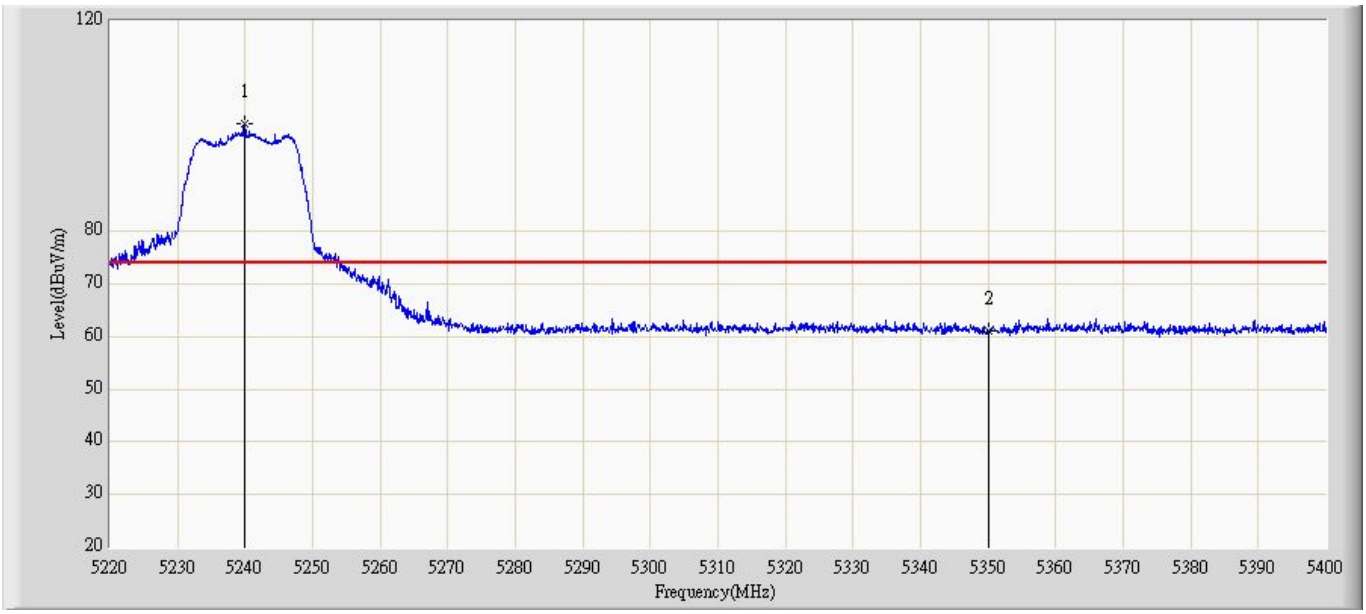
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5240.790	99.365	107.597	N/A	N/A	-8.232	PK
2			5350.000	60.919	69.121	-13.081	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 0	



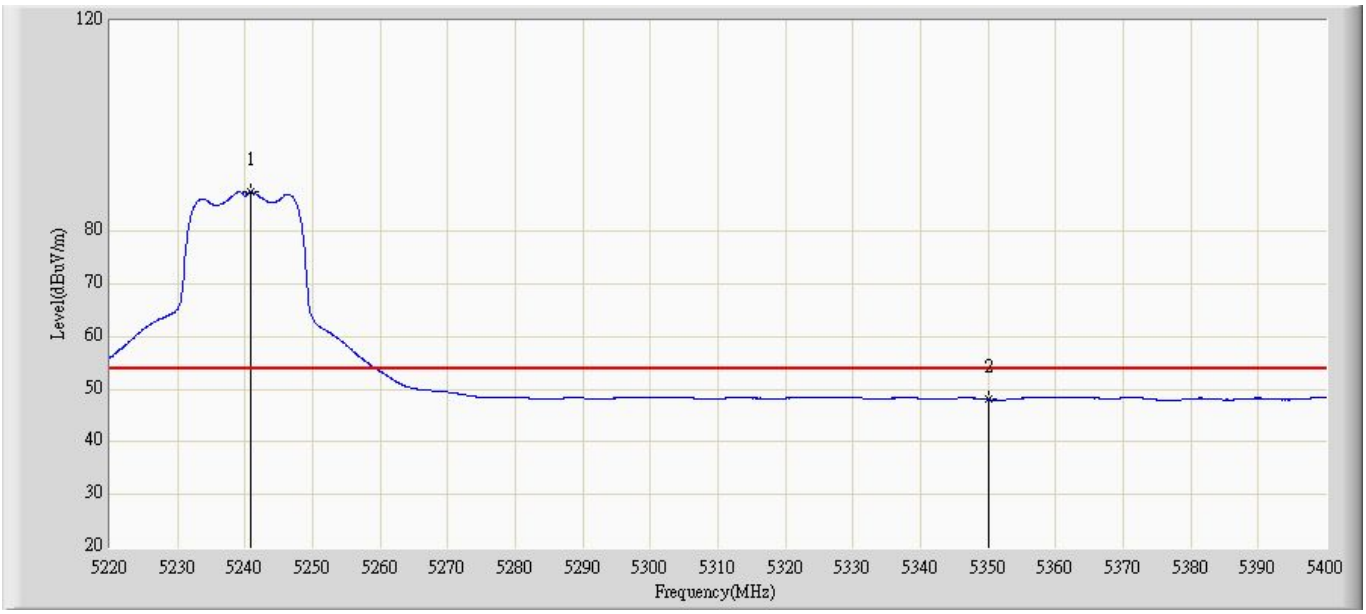
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5240.880	87.858	96.090	N/A	N/A	-8.232	AV
2			5350.000	48.038	56.240	-5.962	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 0	



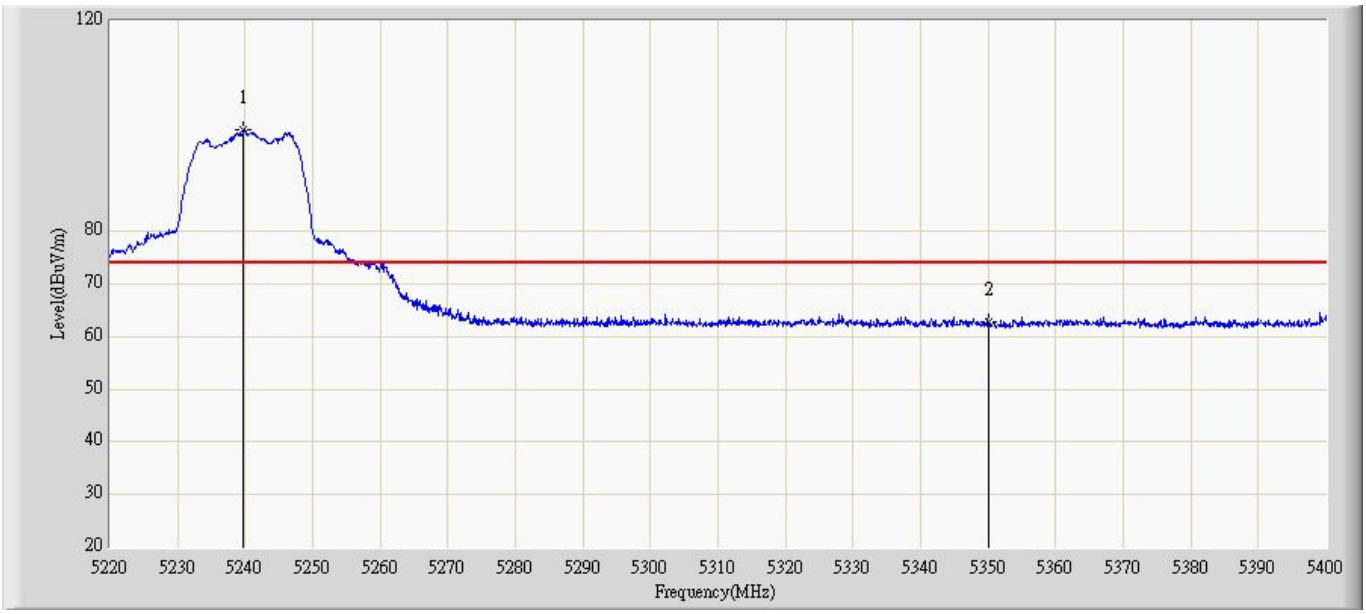
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.890	100.471	108.703	N/A	N/A	-8.232	PK
2			5350.000	61.009	69.211	-12.991	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 0	



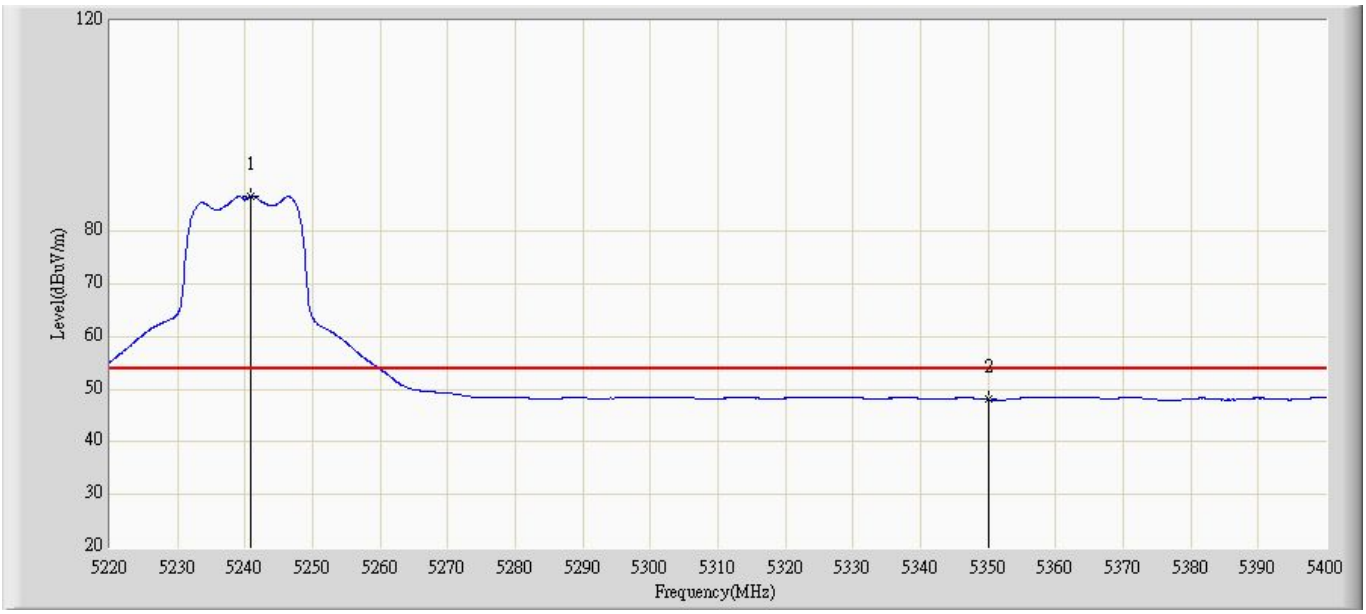
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5240.880	87.556	95.788	N/A	N/A	-8.232	AV
2			5350.000	48.052	56.254	-5.948	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 10:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 1	



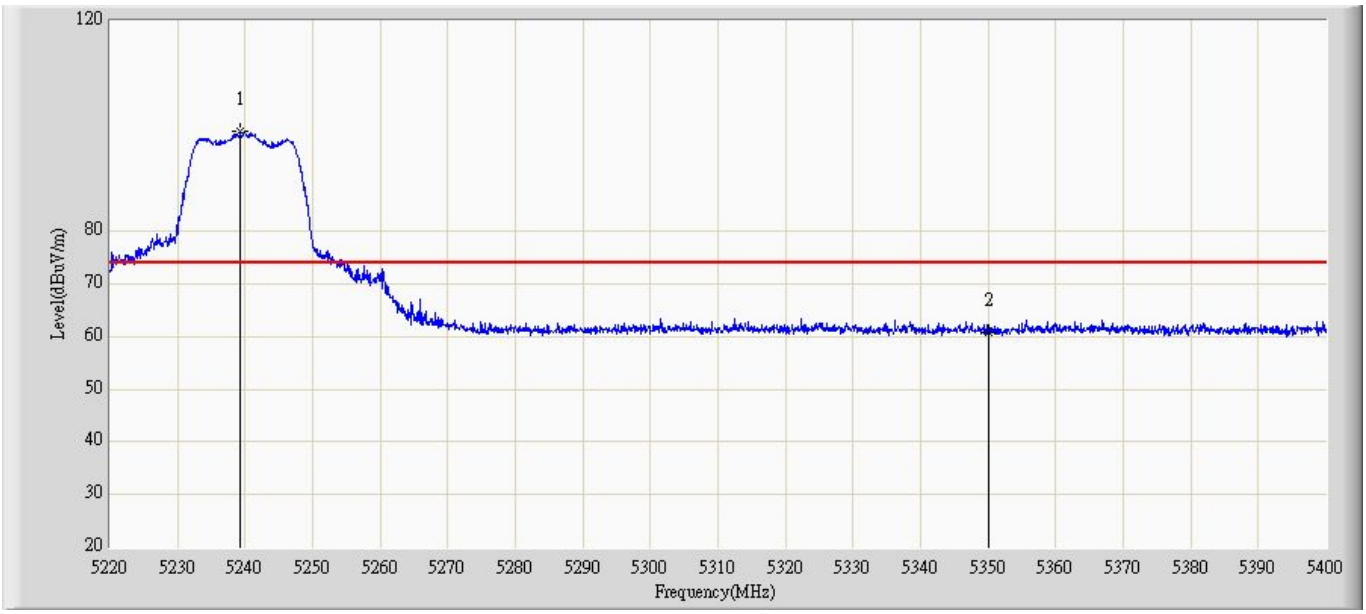
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.800	99.248	107.480	N/A	N/A	-8.232	PK
2			5350.000	62.727	70.929	-11.273	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 1	



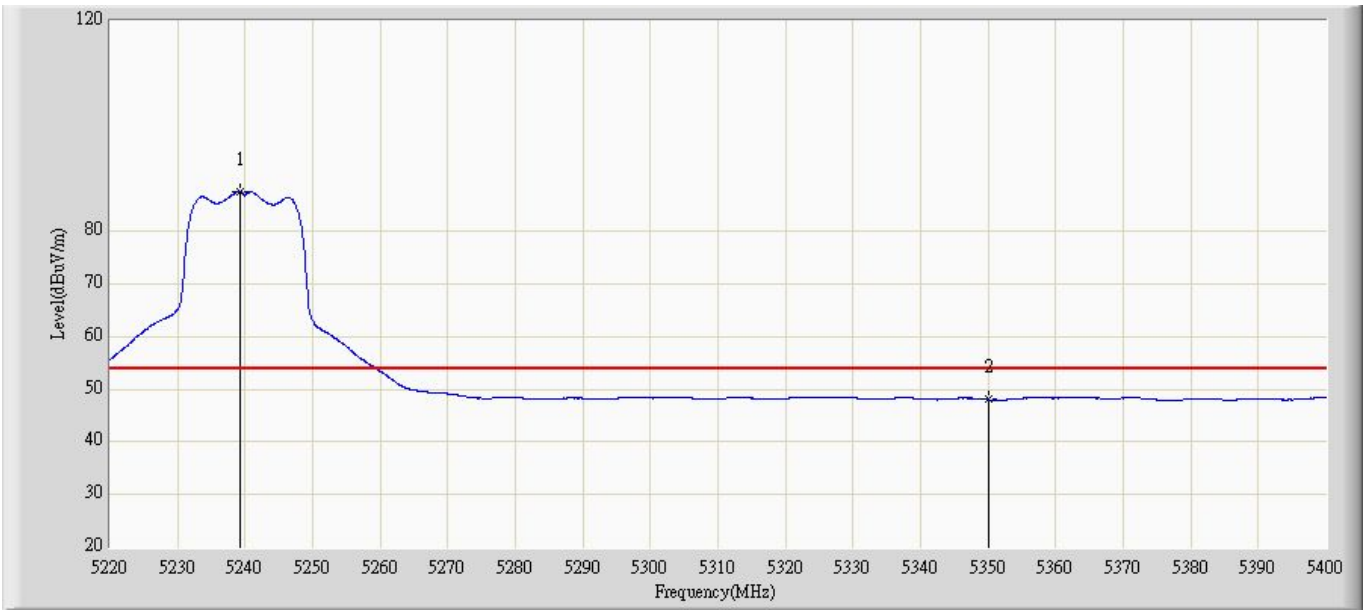
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5240.880	86.768	95.000	N/A	N/A	-8.232	AV
2			5350.000	48.064	56.266	-5.936	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 1	



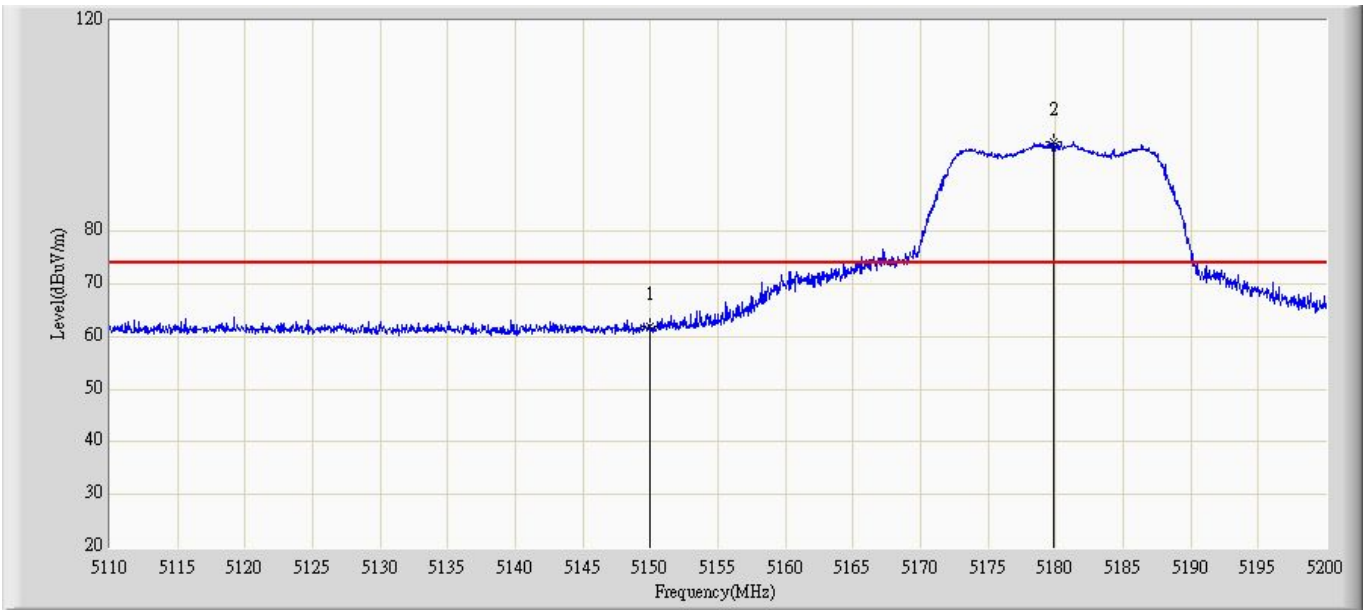
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.260	98.903	107.134	N/A	N/A	-8.231	PK
2			5350.000	60.913	69.115	-13.087	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode1: Transmit at channel 5240 MHz by 802.11a ant 1	



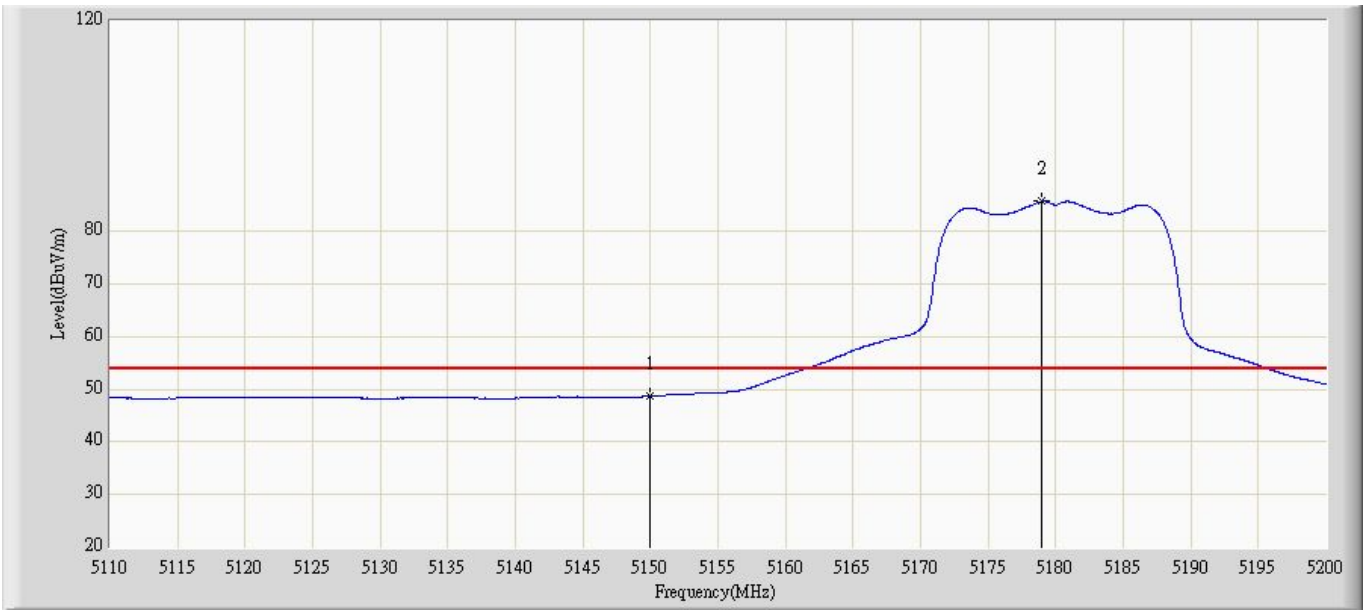
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.260	87.632	95.863	N/A	N/A	-8.231	AV
2			5350.000	48.039	56.241	-5.961	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0	



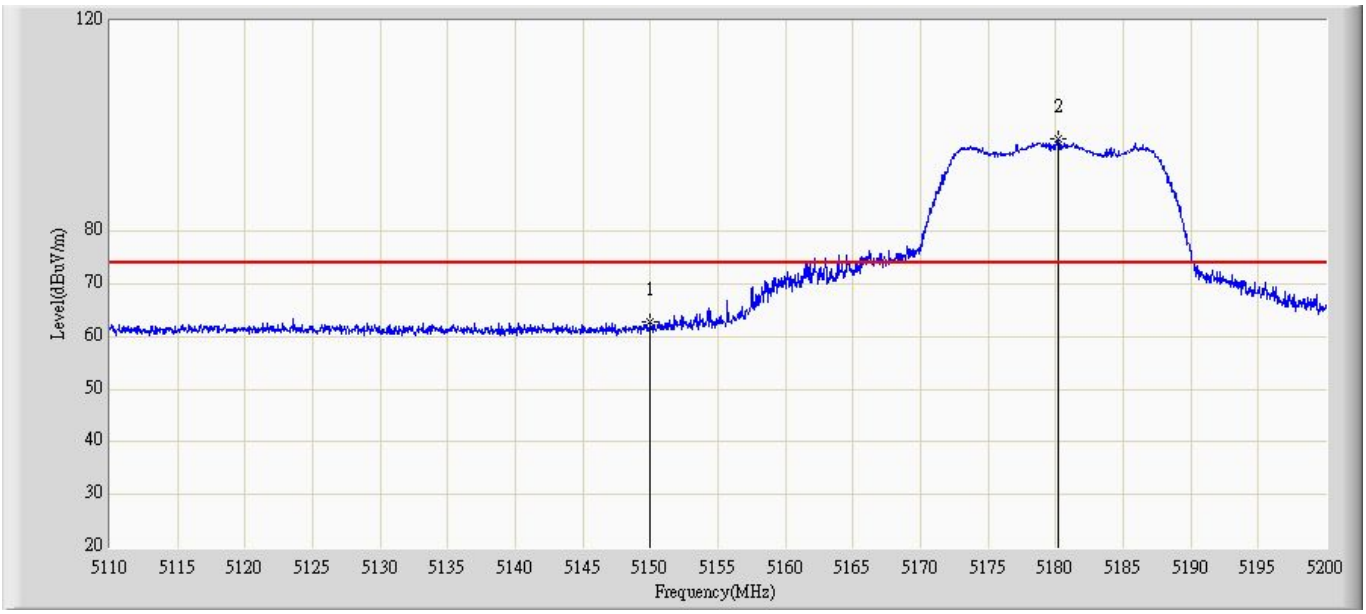
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	61.979	70.199	-12.021	74.000	-8.220	PK
2		*	5179.795	96.923	105.150	N/A	N/A	-8.226	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0	



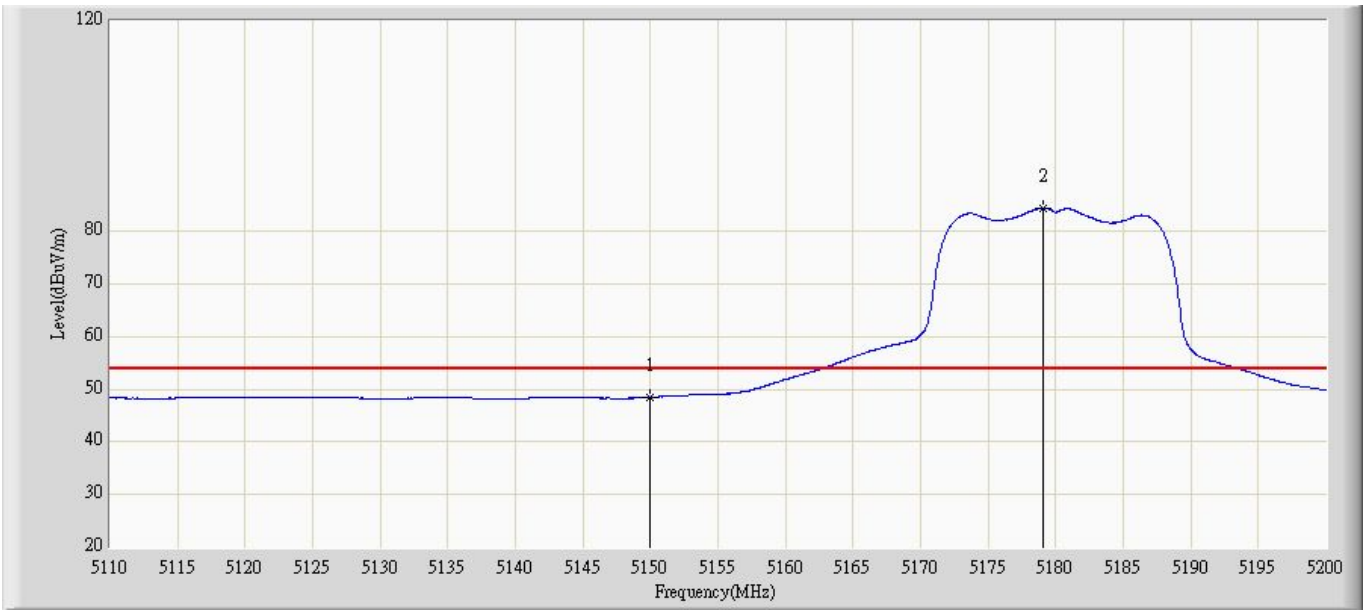
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.653	56.873	-5.347	54.000	-8.220	AV
2		*	5178.985	85.703	93.930	N/A	N/A	-8.228	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0	



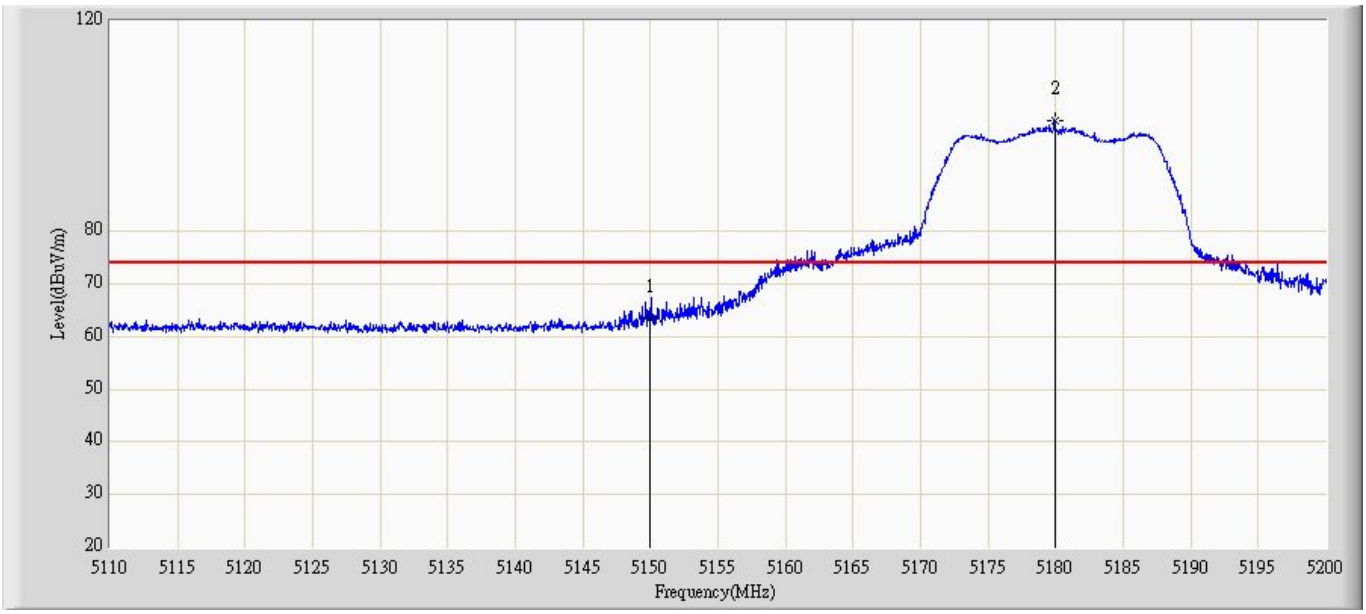
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	62.726	70.946	-11.274	74.000	-8.220	PK
2		*	5180.200	97.493	105.720	N/A	N/A	-8.227	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0	



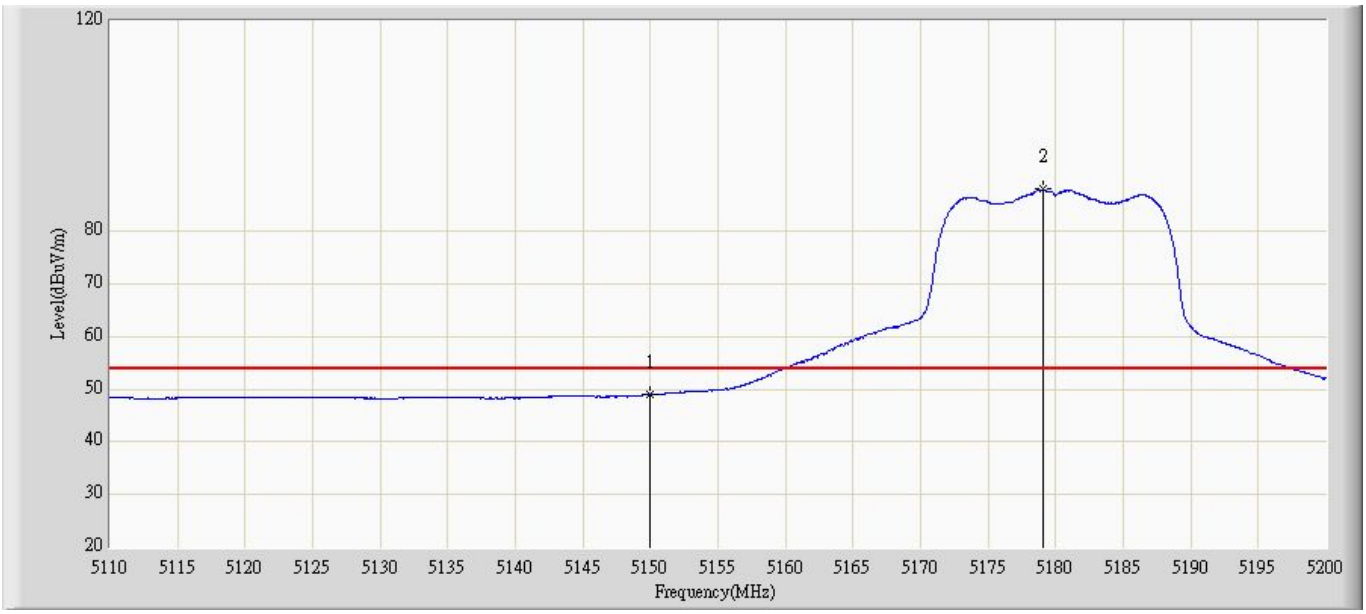
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.501	56.721	-5.499	54.000	-8.220	AV
2		*	5179.075	84.479	92.706	N/A	N/A	-8.228	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 1	



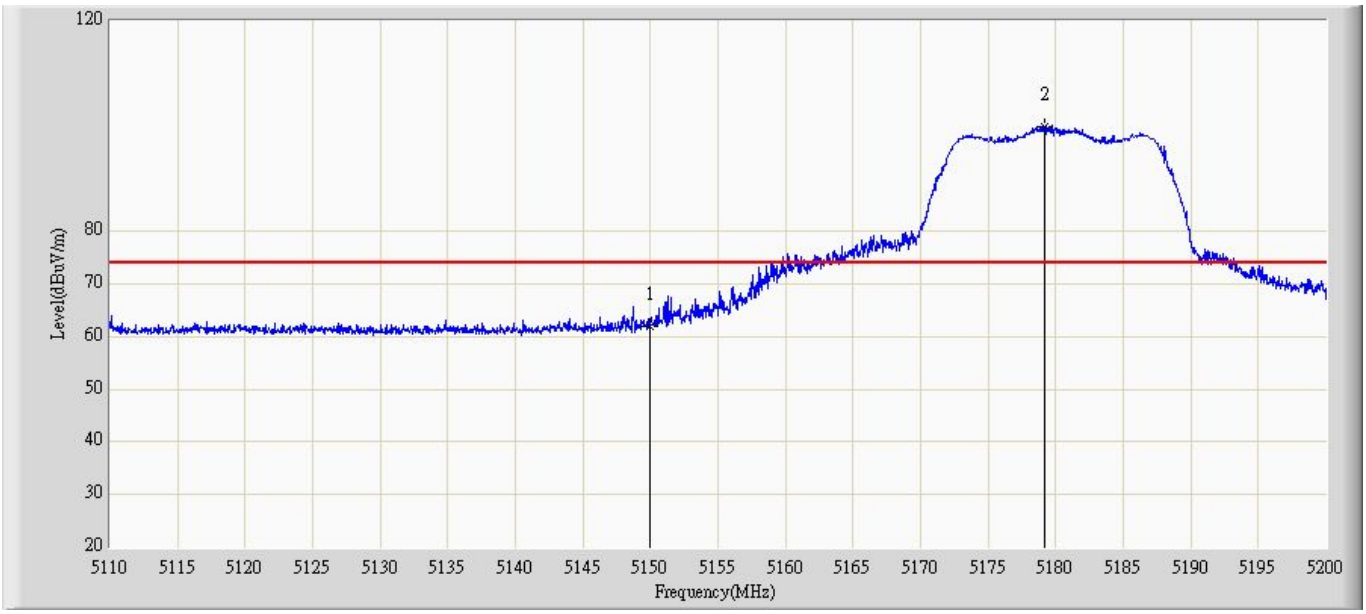
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	63.329	71.549	-10.671	74.000	-8.220	PK
2		*	5179.930	101.149	109.376	N/A	N/A	-8.226	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 1	



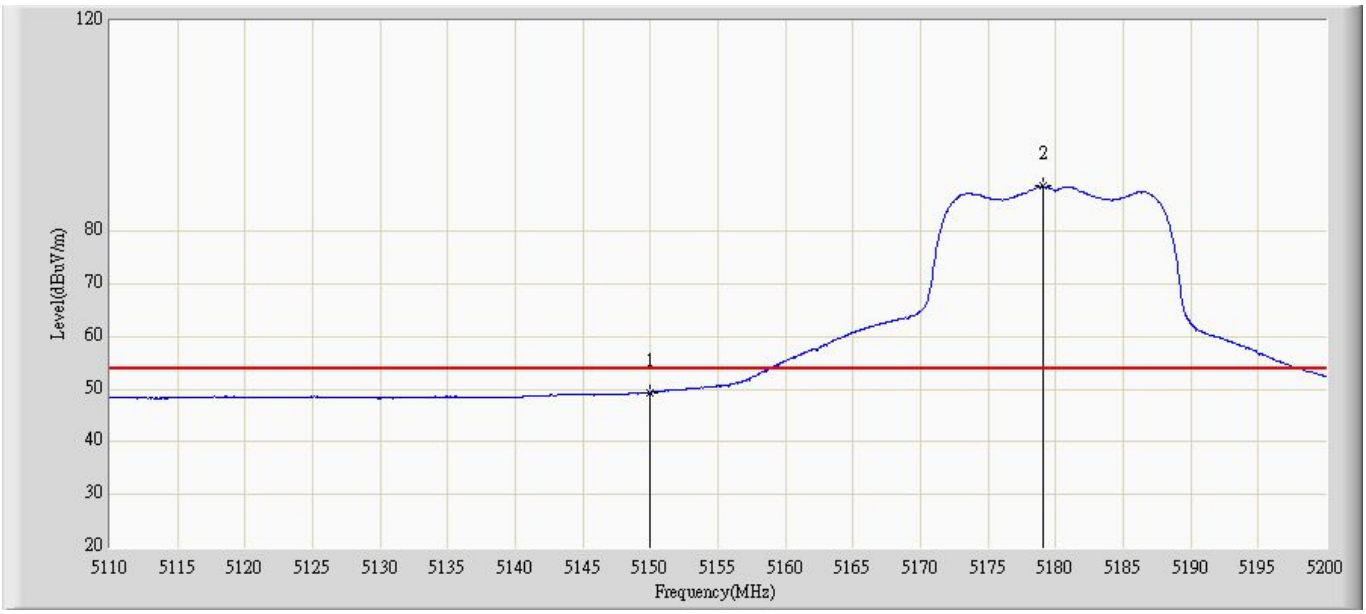
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.991	57.211	-5.009	54.000	-8.220	AV
2		*	5179.075	87.965	96.192	N/A	N/A	-8.228	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 1	



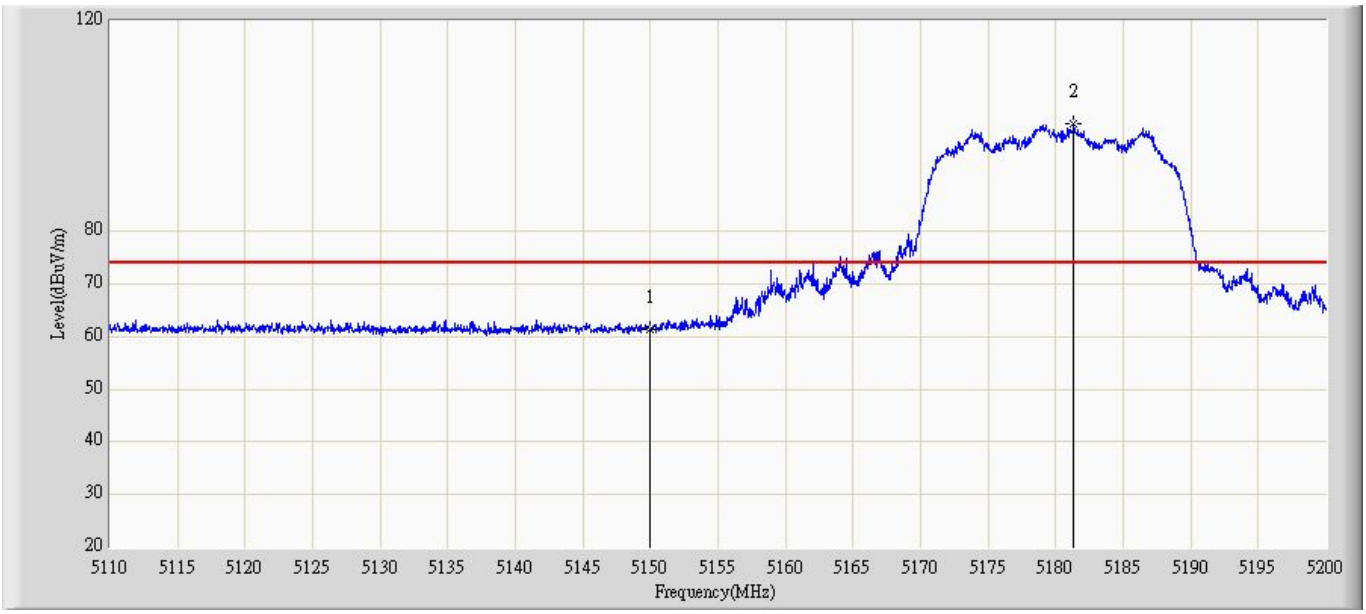
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	61.891	70.111	-12.109	74.000	-8.220	PK
2		*	5179.165	100.020	108.247	N/A	N/A	-8.228	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 1	



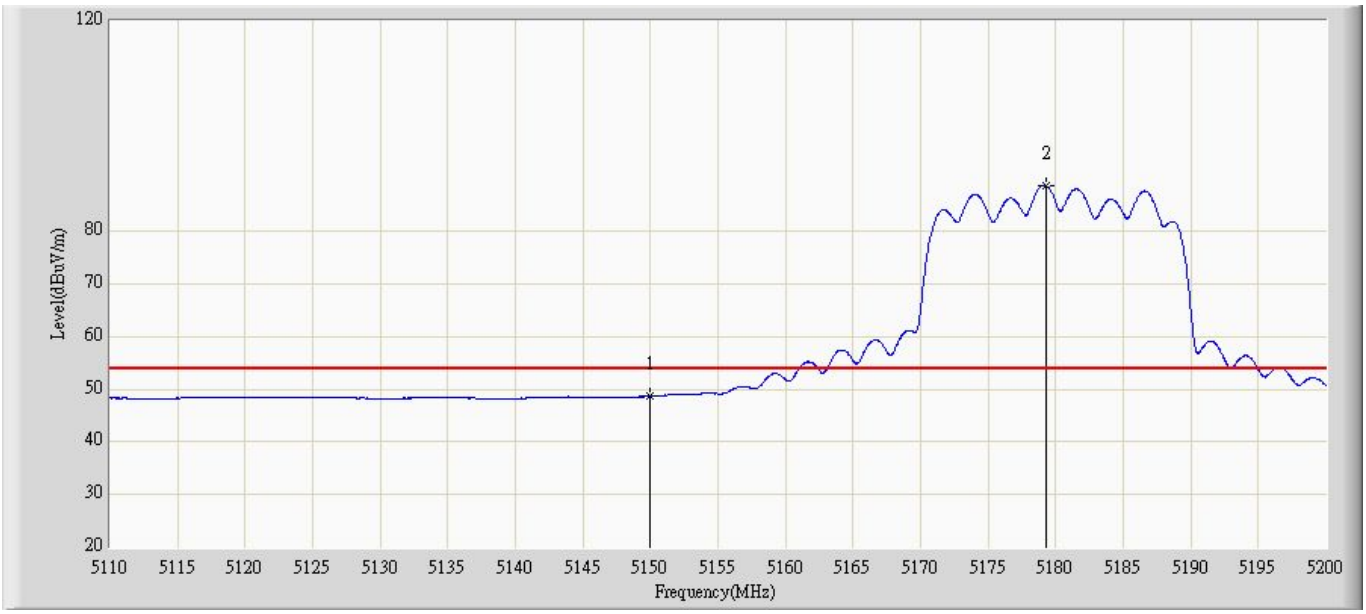
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	49.448	57.668	-4.552	54.000	-8.220	AV
2		*	5179.075	88.550	96.777	N/A	N/A	-8.228	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0+1	



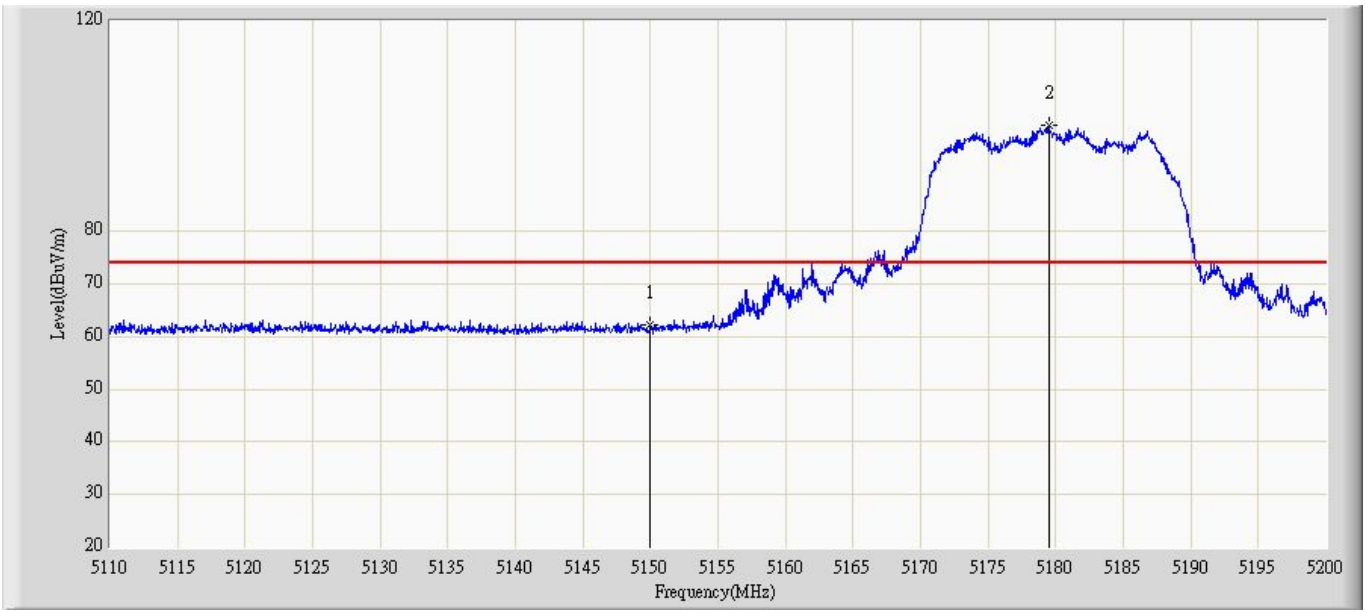
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	61.331	69.551	-12.669	74.000	-8.220	PK
2		*	5181.325	100.338	108.564	N/A	N/A	-8.225	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0+1	



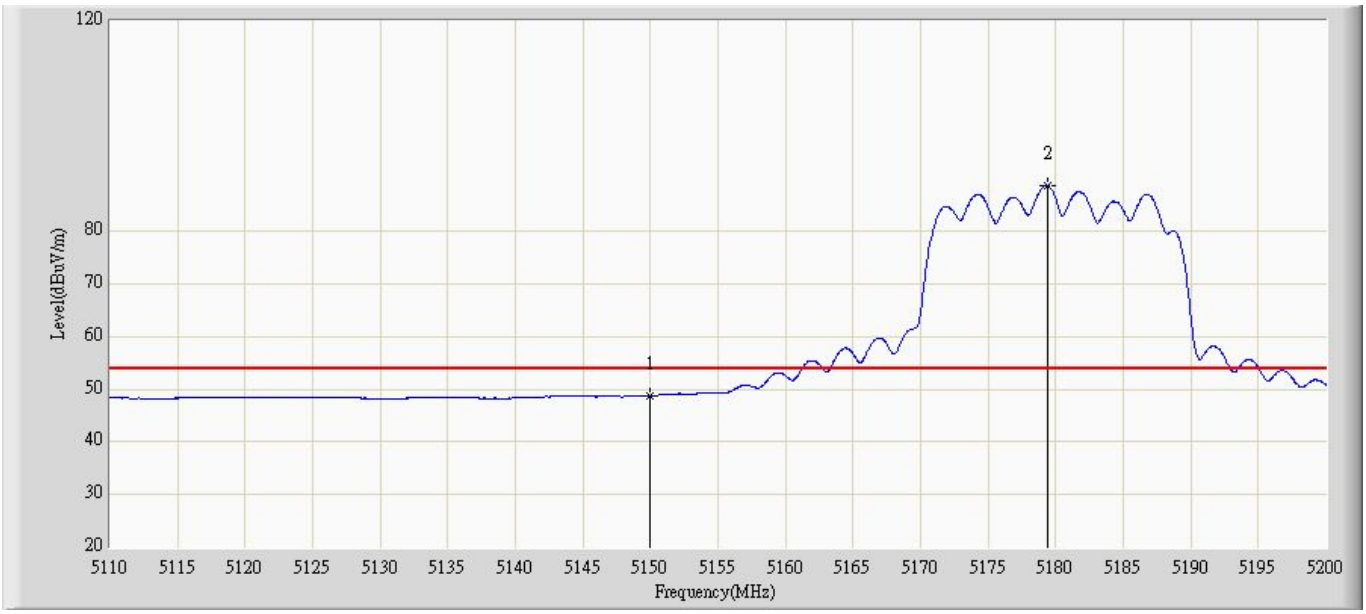
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.649	56.869	-5.351	54.000	-8.220	AV
2		*	5179.255	88.731	96.958	N/A	N/A	-8.228	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:28
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0+1	



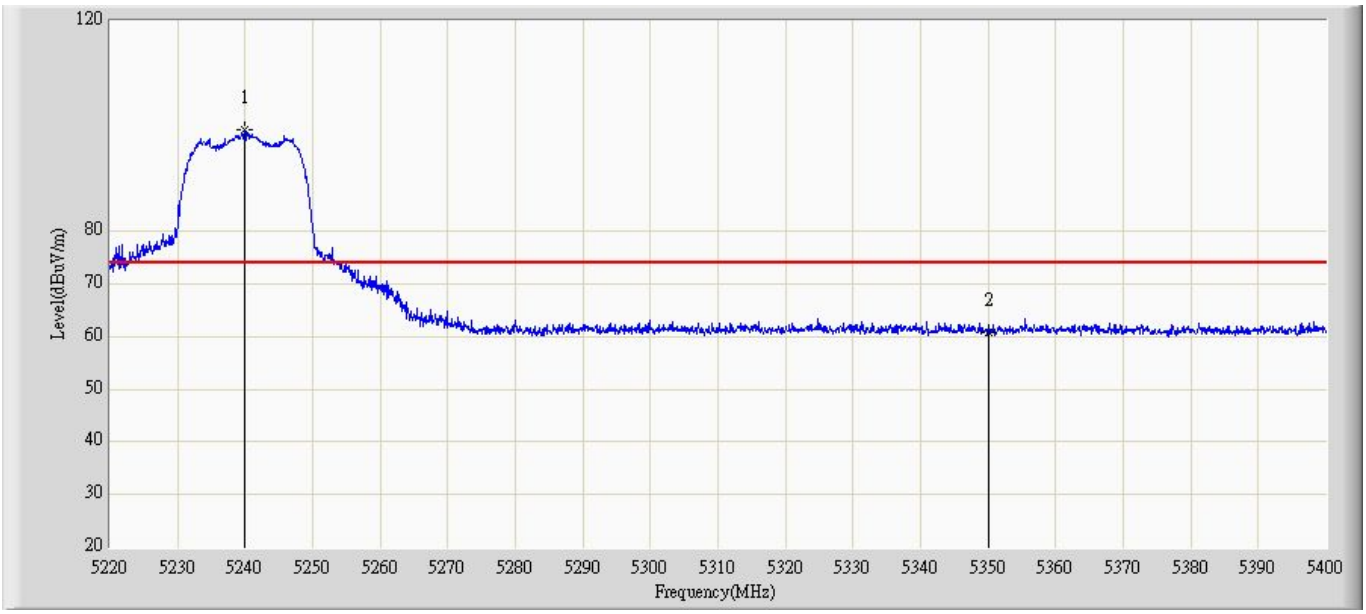
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	62.235	70.455	-11.765	74.000	-8.220	PK
2		*	5179.480	100.157	108.384	N/A	N/A	-8.226	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5180 MHz by 802.11n20 ant 0+1	



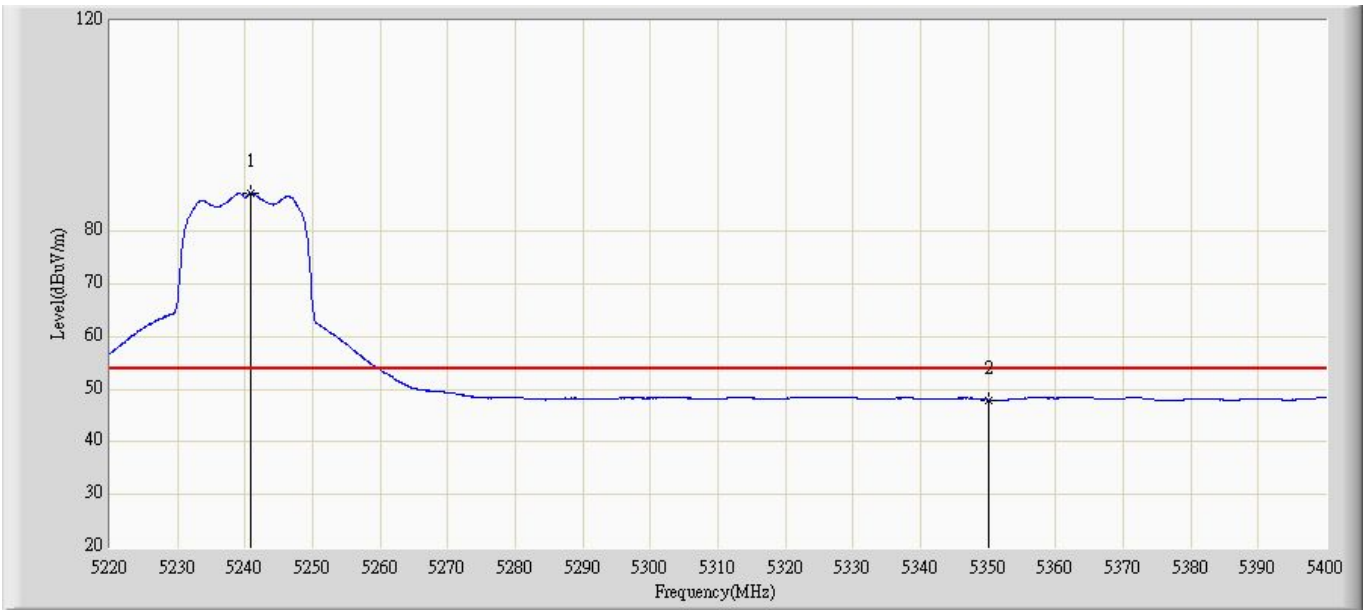
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.810	57.030	-5.190	54.000	-8.220	AV
2		*	5179.390	88.665	96.892	N/A	N/A	-8.228	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0	



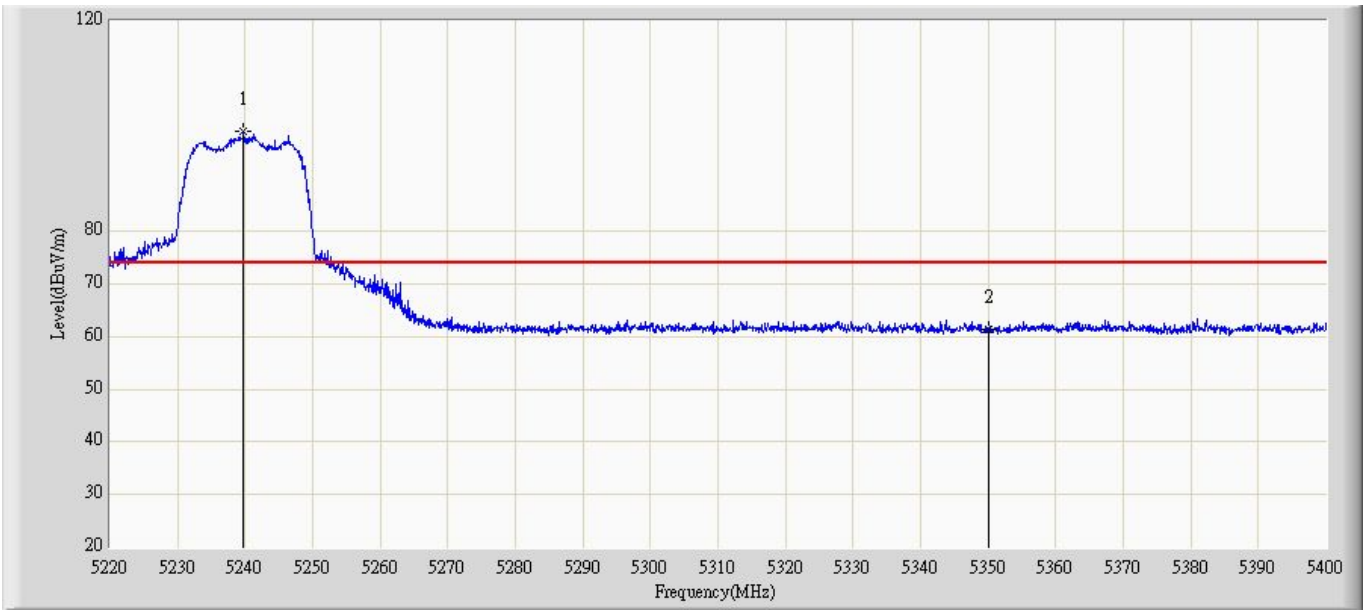
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.980	99.418	107.650	N/A	N/A	-8.232	PK
2			5350.000	60.777	68.979	-13.223	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0	



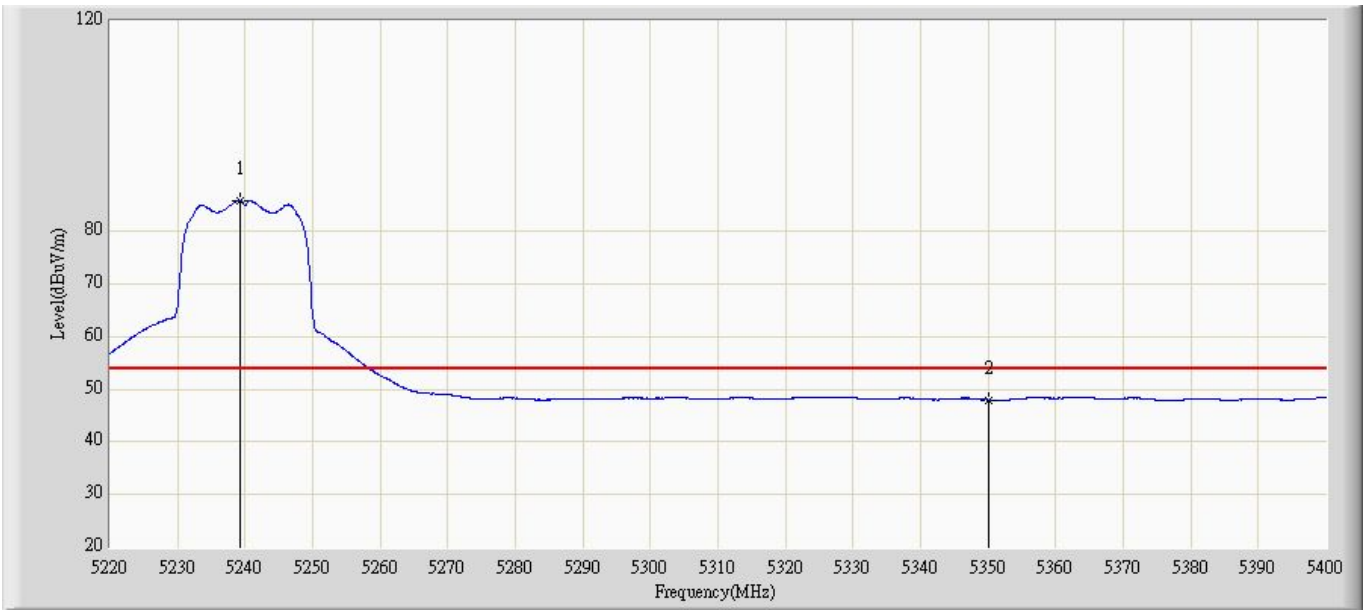
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5240.790	87.246	95.478	N/A	N/A	-8.232	AV
2			5350.000	48.002	56.204	-5.998	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0	



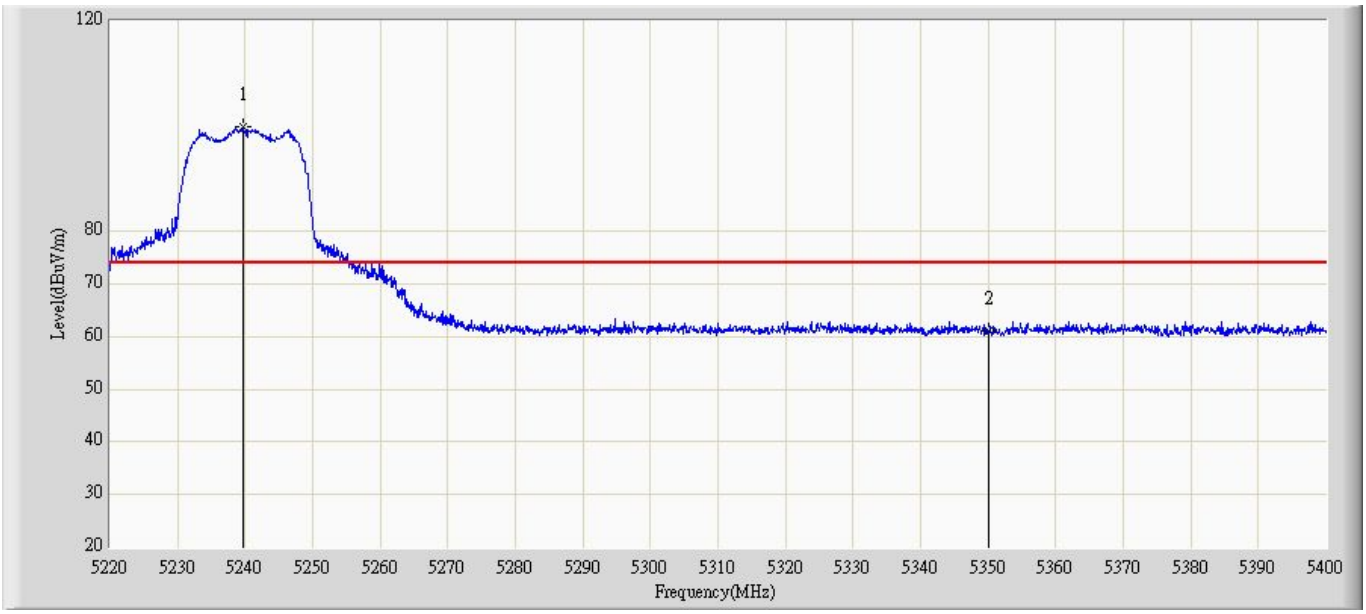
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.710	98.973	107.205	N/A	N/A	-8.232	PK
2			5350.000	61.239	69.441	-12.761	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0	



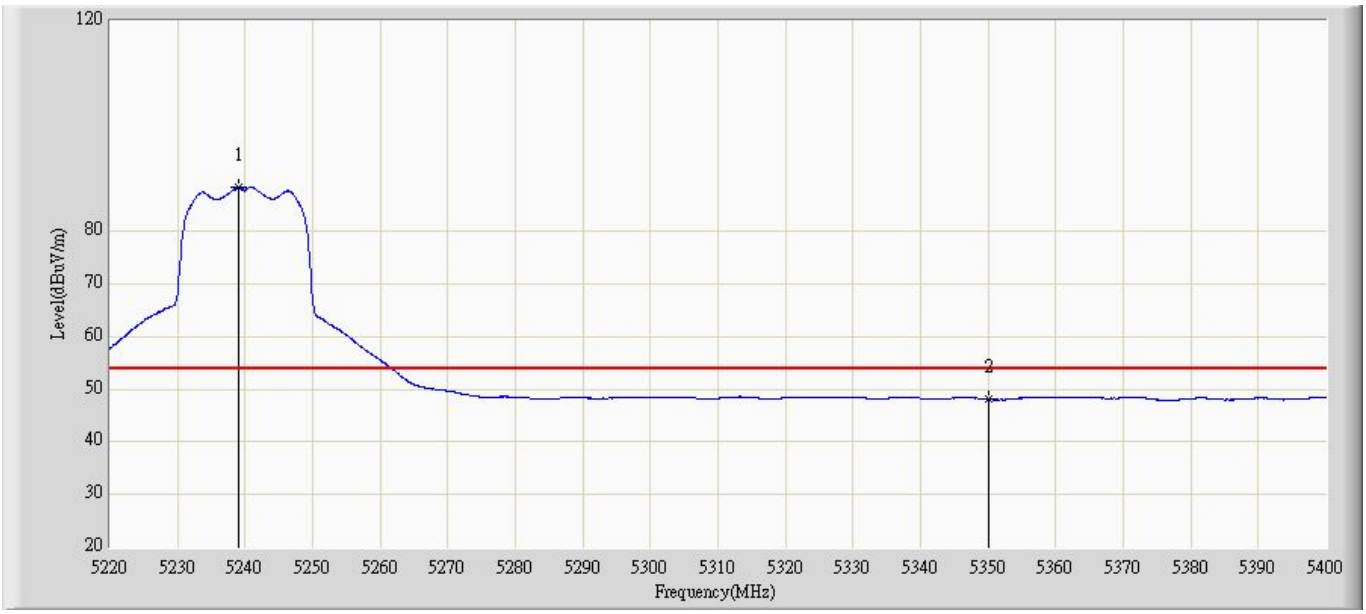
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.260	85.751	93.982	N/A	N/A	-8.231	AV
2			5350.000	47.981	56.183	-6.019	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 1	



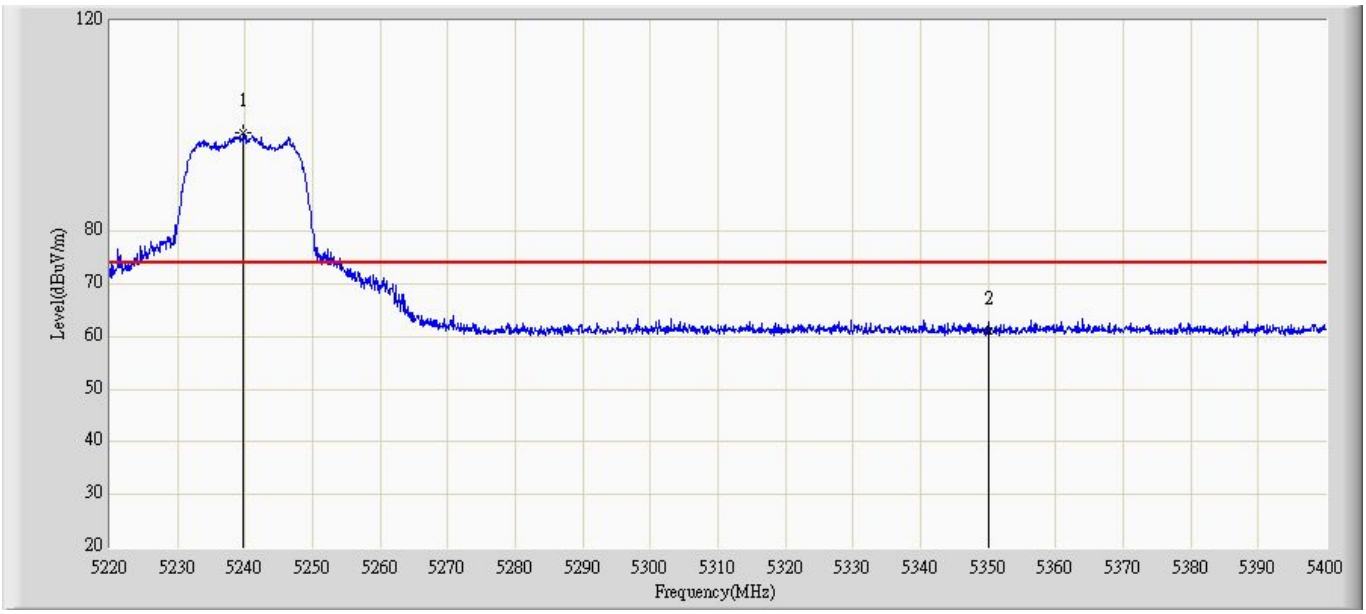
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.710	99.907	108.139	N/A	N/A	-8.232	PK
2			5350.000	61.159	69.361	-12.841	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 1	



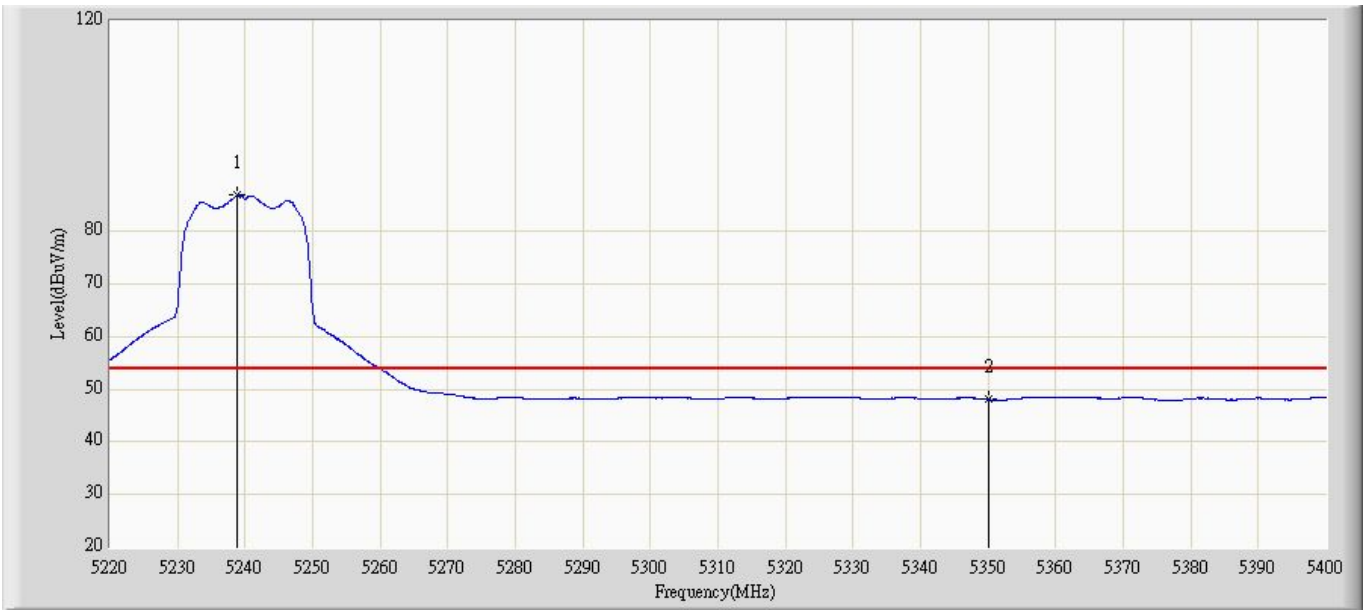
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5238.990	88.508	96.739	N/A	N/A	-8.231	AV
2			5350.000	48.053	56.255	-5.947	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 1	



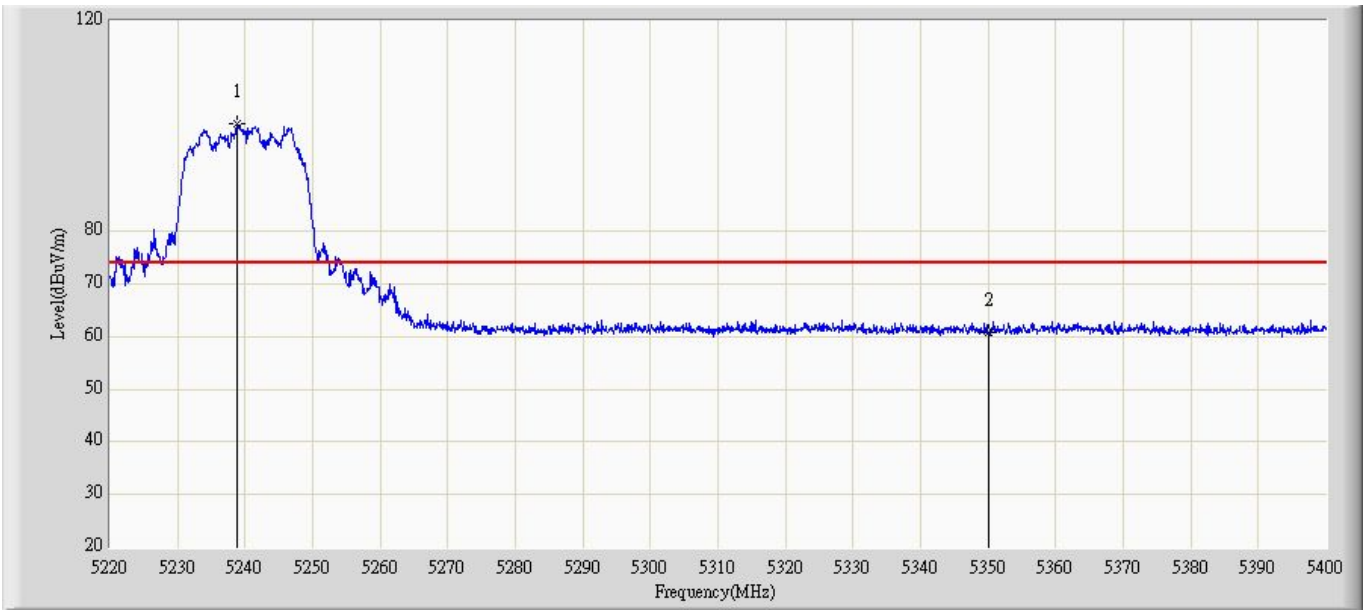
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.710	98.742	106.974	N/A	N/A	-8.232	PK
2			5350.000	61.177	69.379	-12.823	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 1	



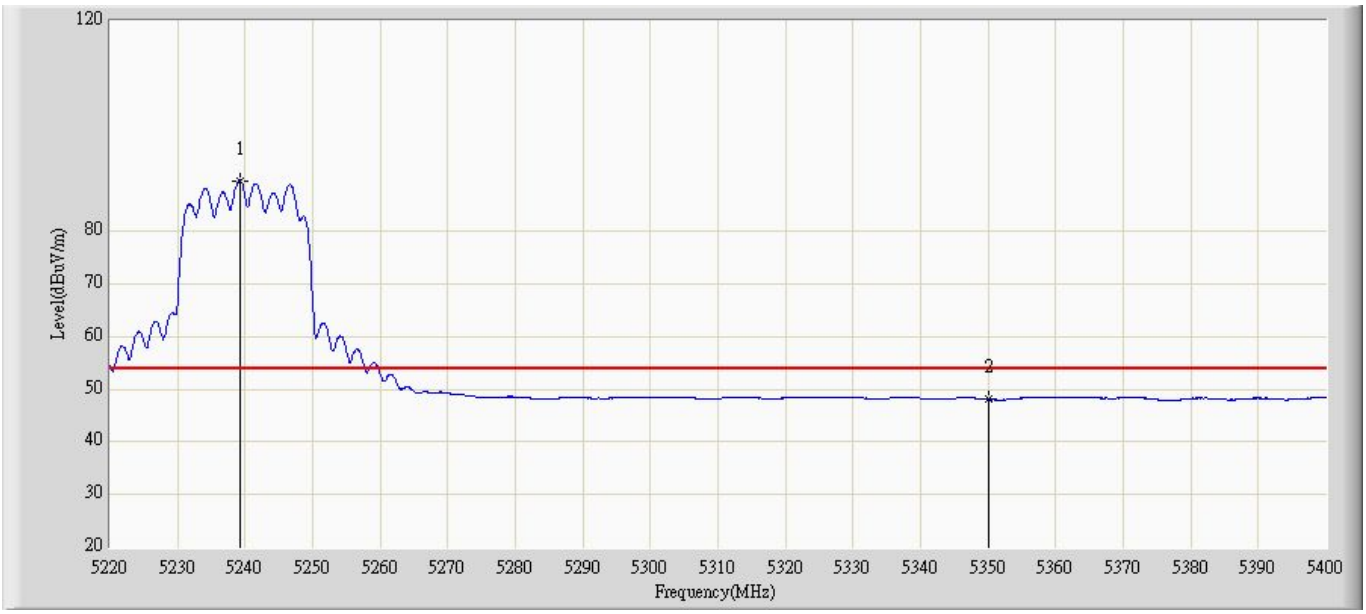
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5238.900	86.832	95.063	N/A	N/A	-8.231	AV
2			5350.000	48.018	56.220	-5.982	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0+1	



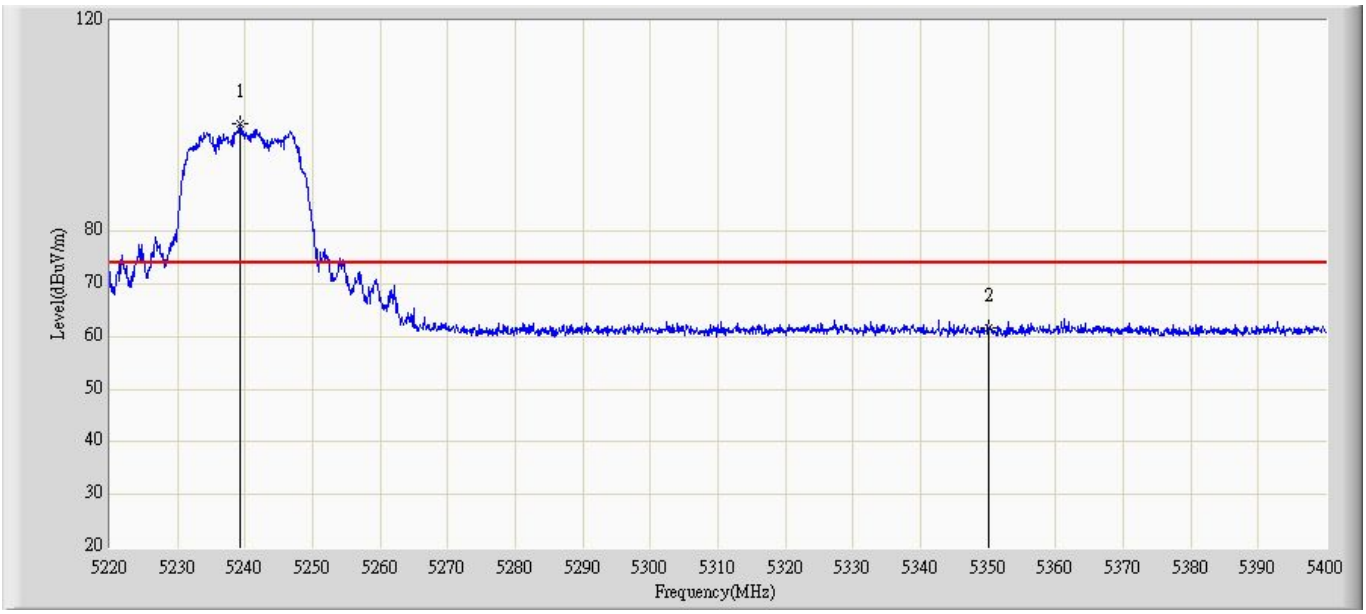
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5238.900	100.404	108.635	N/A	N/A	-8.231	PK
2			5350.000	60.771	68.973	-13.229	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0+1	



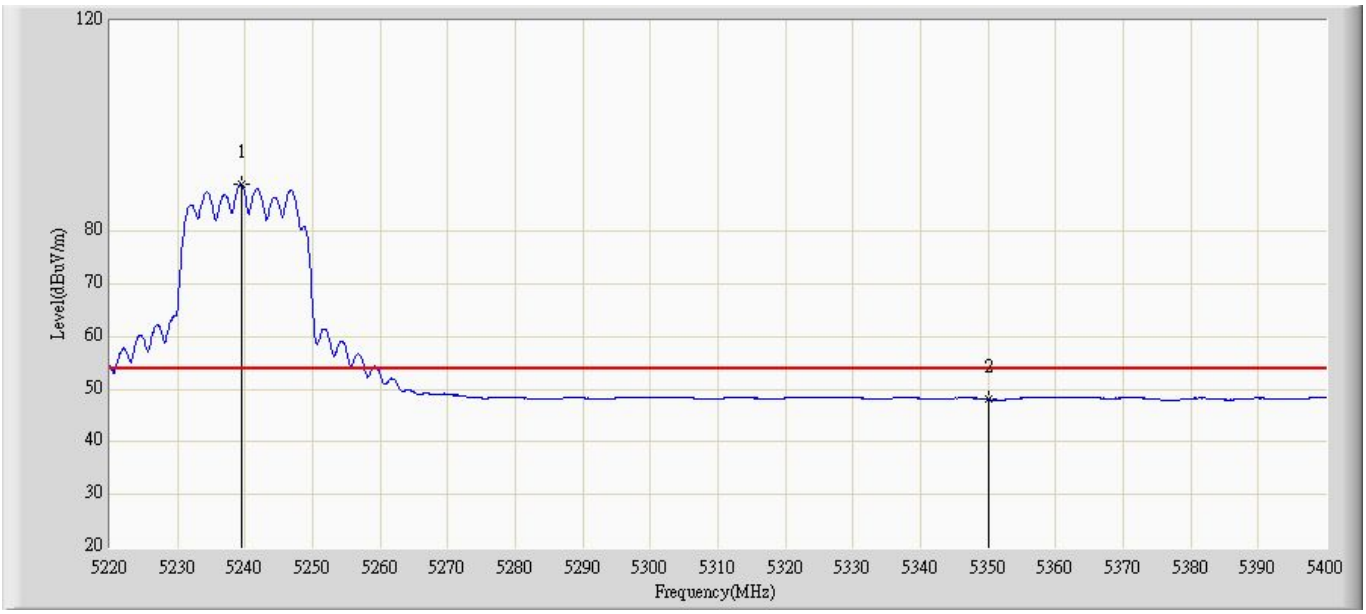
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.260	89.628	97.859	N/A	N/A	-8.231	AV
2			5350.000	48.086	56.288	-5.914	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0+1	



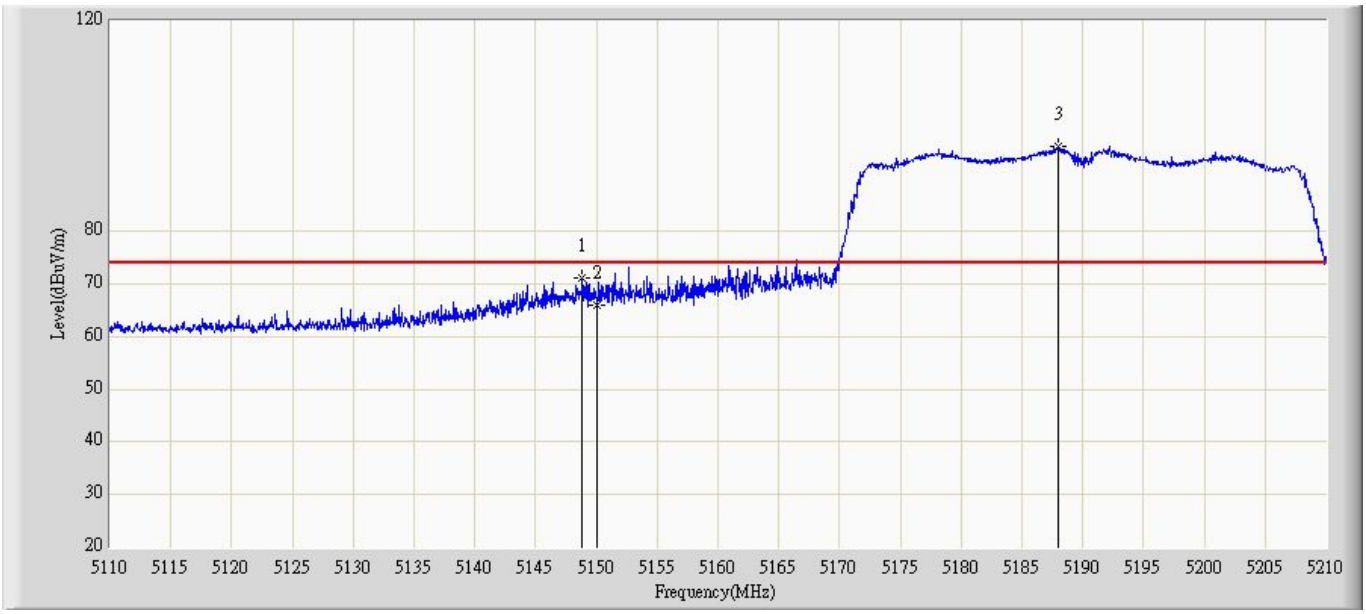
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.170	100.378	108.609	N/A	N/A	-8.231	PK
2			5350.000	61.583	69.785	-12.417	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 11:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode2: Transmit at channel 5240 MHz by 802.11n20 ant 0+1	



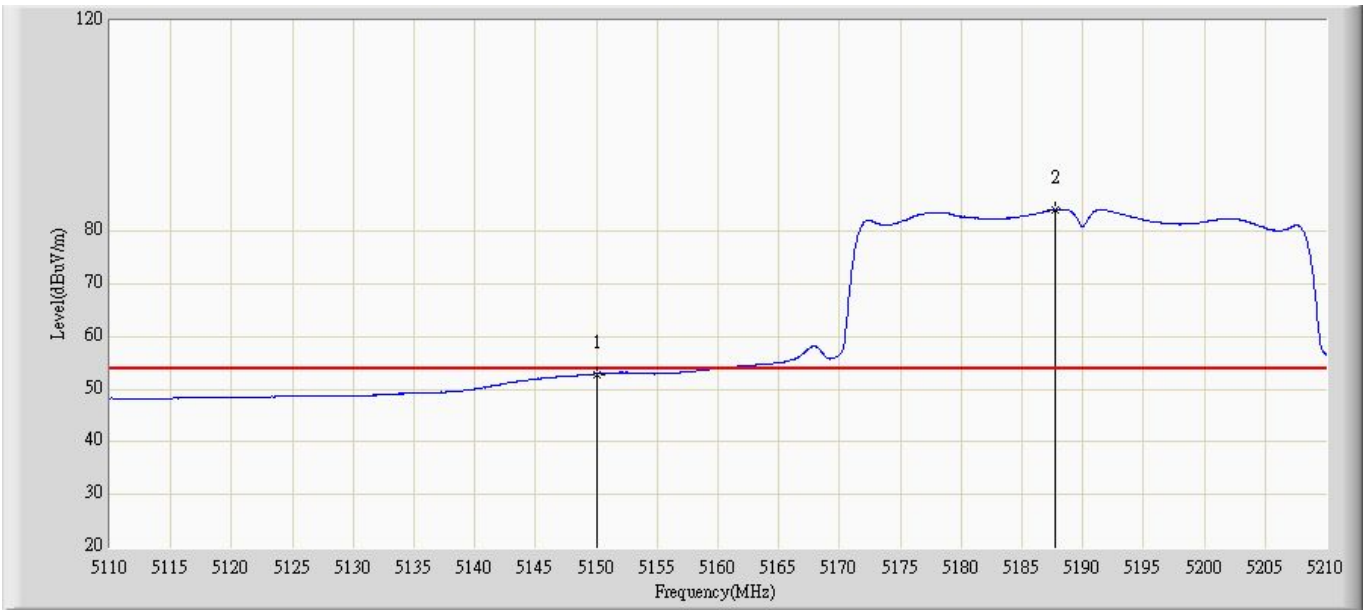
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5239.530	88.931	97.162	N/A	N/A	-8.231	AV
2			5350.000	48.092	56.294	-5.908	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 15:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0	



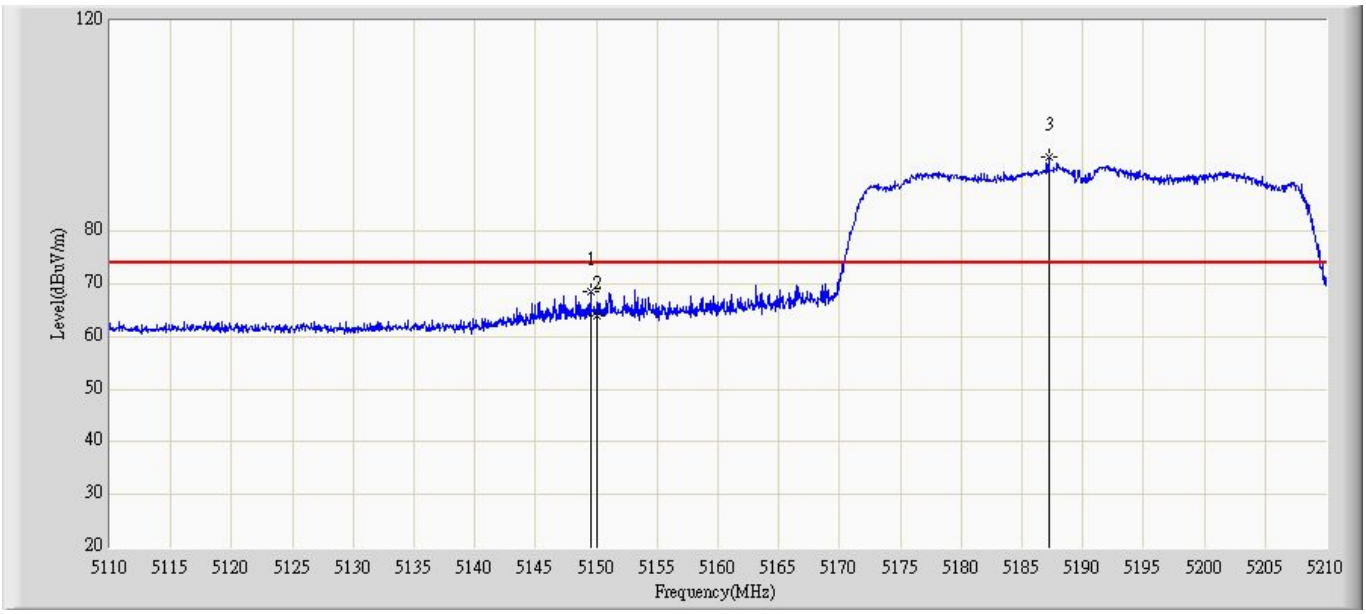
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5148.850	71.182	79.401	-2.818	74.000	-8.218	PK
2			5150.000	65.899	74.119	-8.101	74.000	-8.220	PK
3		*	5188.000	96.247	104.478	N/A	N/A	-8.231	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0	



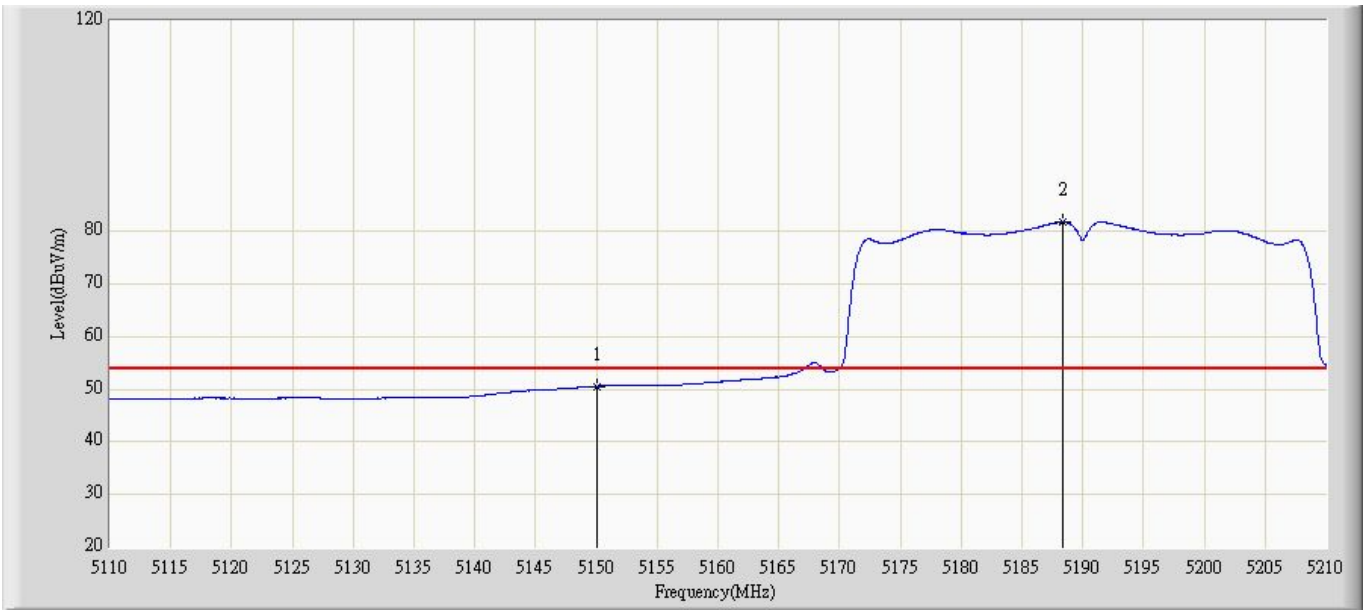
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	52.875	61.095	-1.125	54.000	-8.220	AV
2		*	5187.750	84.153	92.383	N/A	N/A	-8.230	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0	



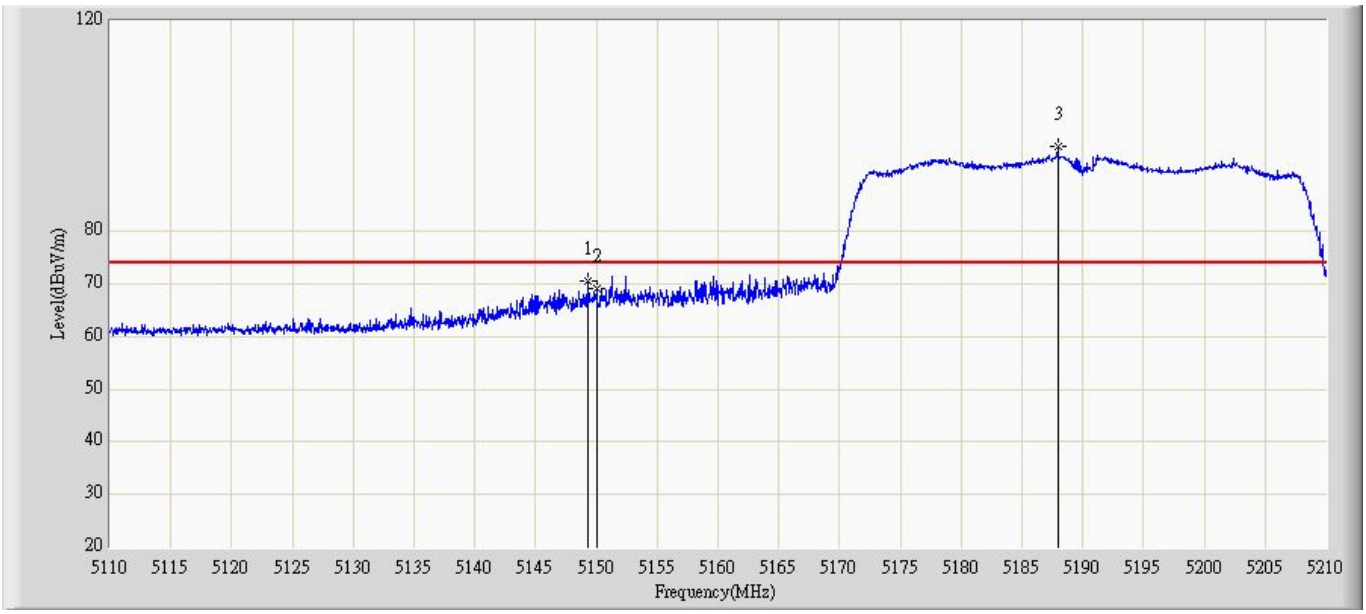
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5149.500	68.634	76.853	-5.366	74.000	-8.219	PK
2			5150.000	64.069	72.289	-9.931	74.000	-8.220	PK
3		*	5187.200	94.061	102.291	N/A	N/A	-8.230	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0	



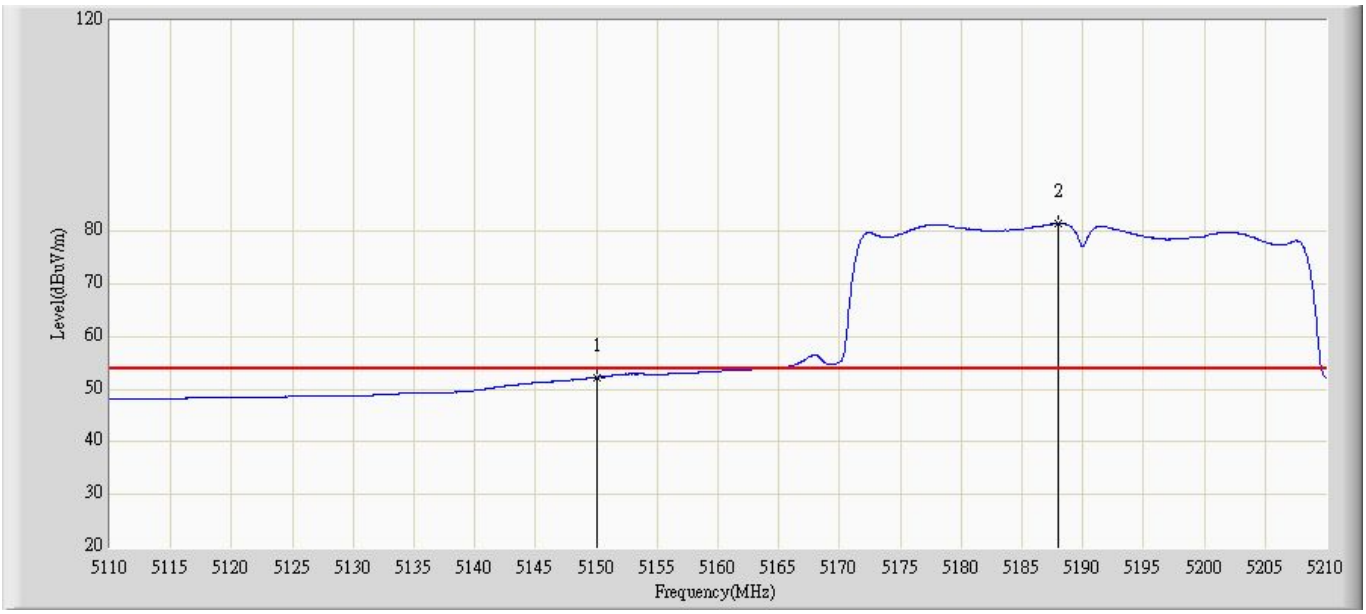
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	50.527	58.747	-3.473	54.000	-8.220	AV
2		*	5188.350	81.703	89.934	N/A	N/A	-8.231	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:08
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 1	



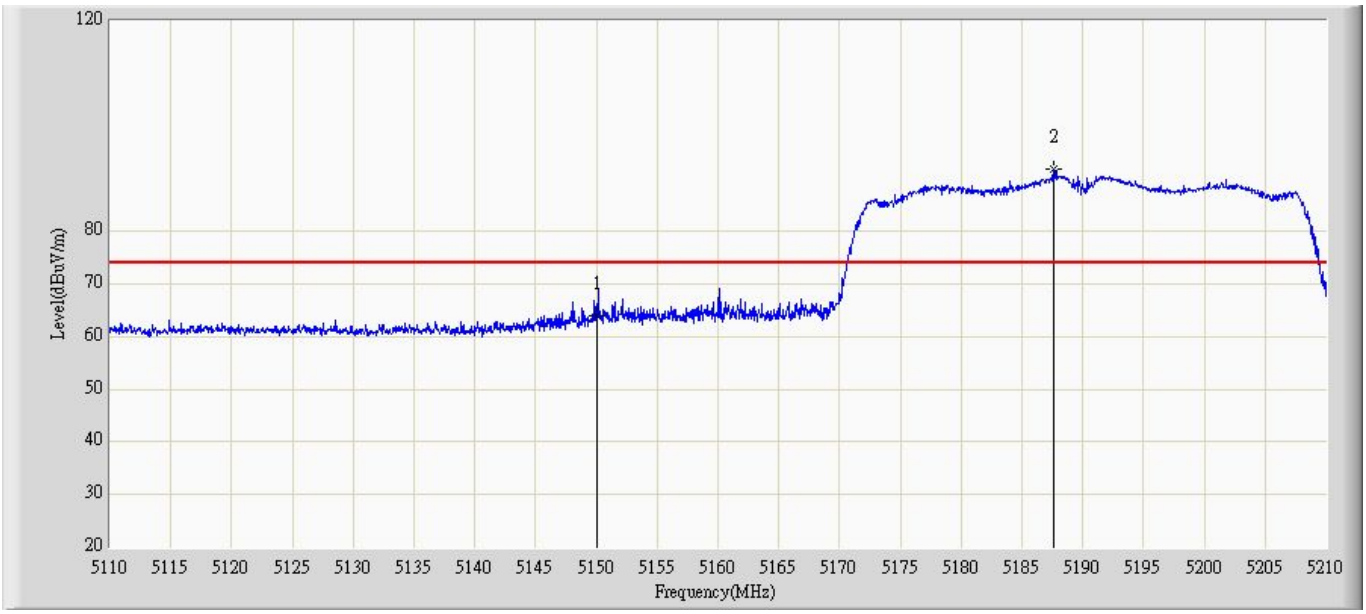
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5149.350	70.594	78.813	-3.406	74.000	-8.219	PK
2			5150.000	69.023	77.243	-4.977	74.000	-8.220	PK
3		*	5187.950	96.014	104.245	N/A	N/A	-8.231	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 1	



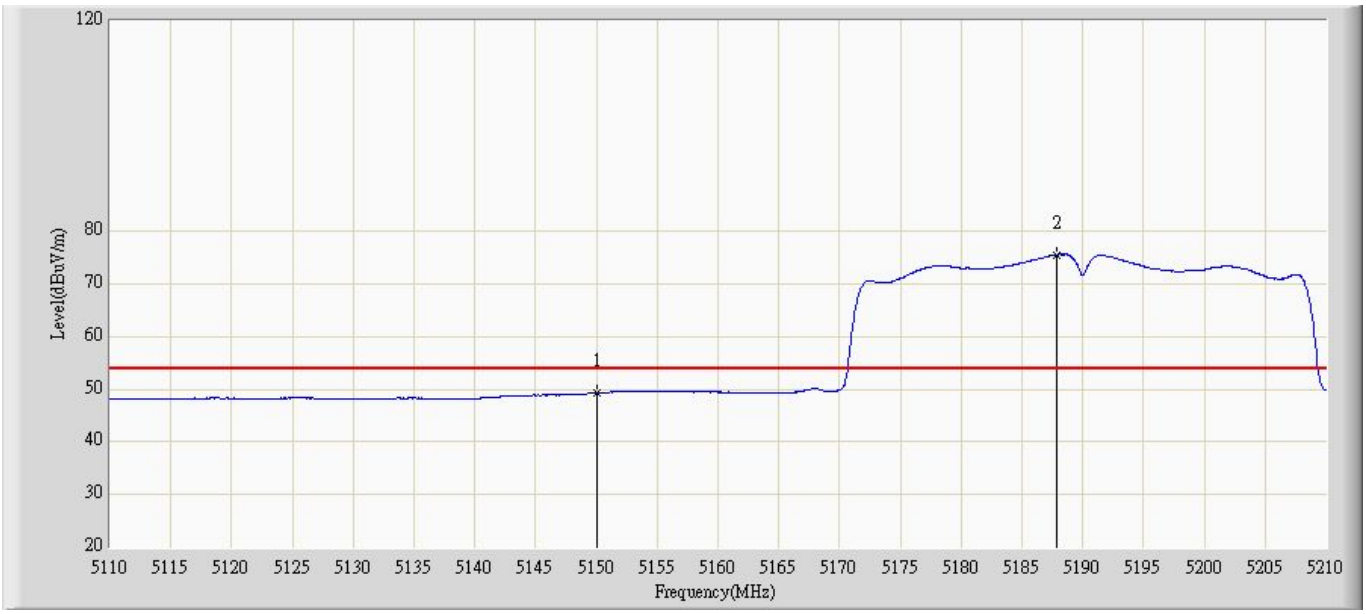
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	52.252	60.472	-1.748	54.000	-8.220	AV
2		*	5188.000	81.424	89.655	N/A	N/A	-8.231	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 1	



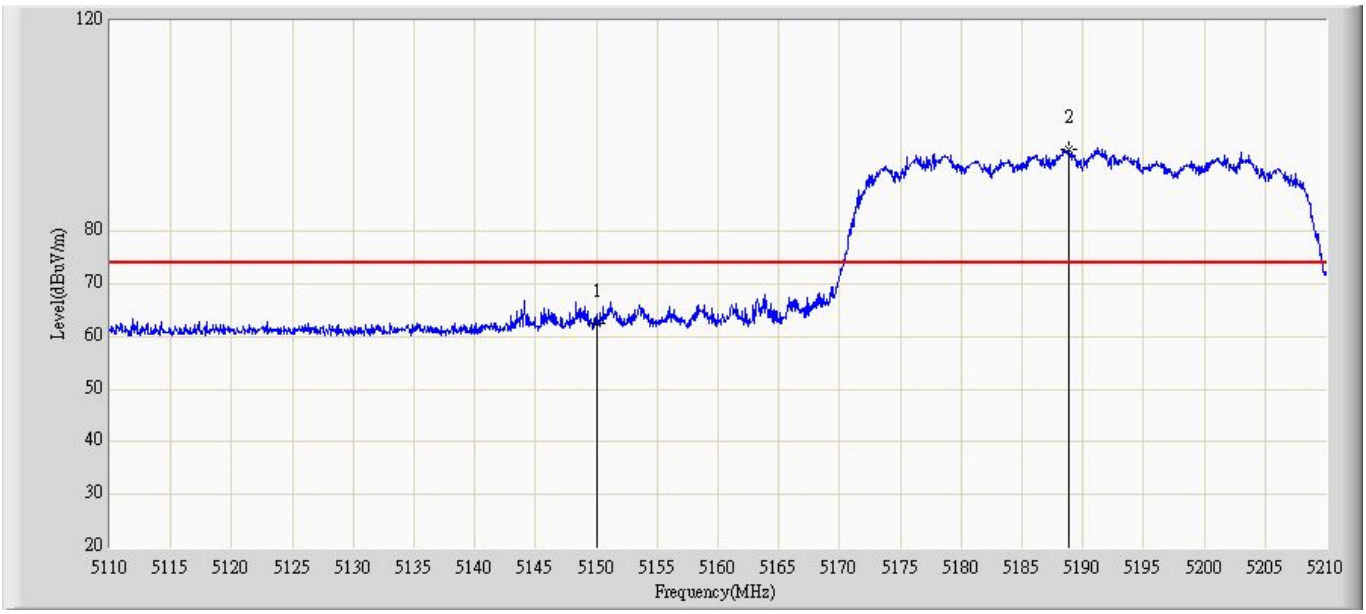
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	63.833	72.053	-10.167	74.000	-8.220	PK
2		*	5187.550	91.719	99.949	N/A	N/A	-8.230	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 1	



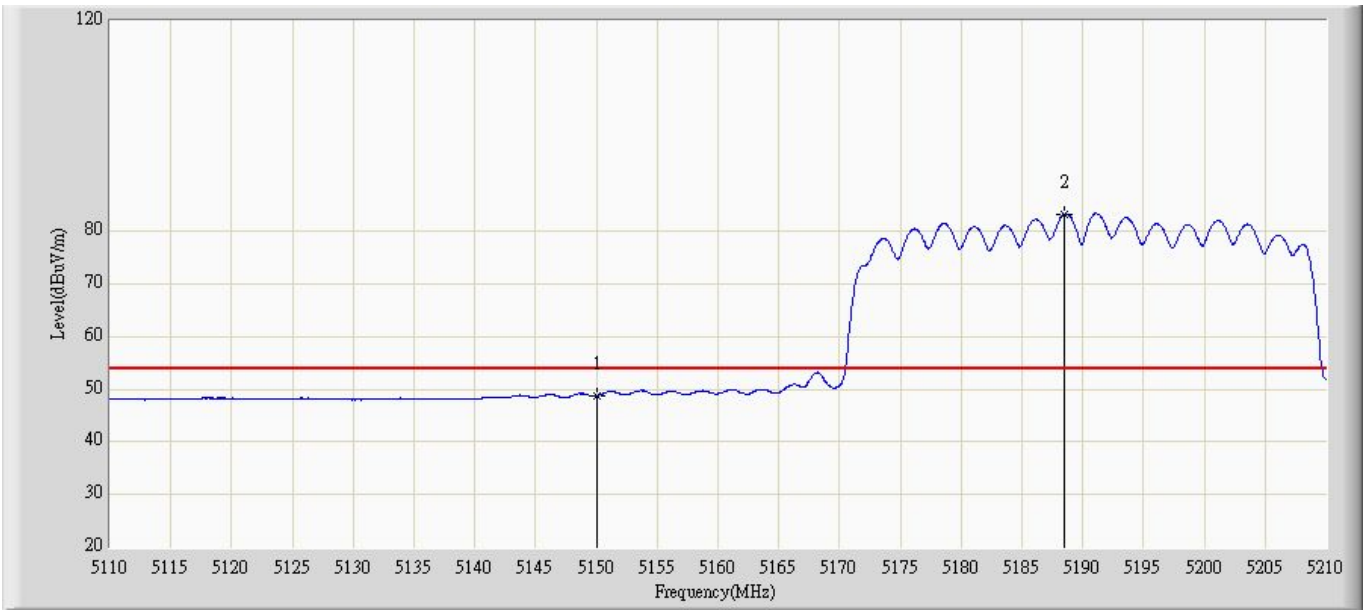
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	49.232	57.452	-4.768	54.000	-8.220	AV
2		*	5187.850	75.550	83.780	N/A	N/A	-8.230	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0+1	



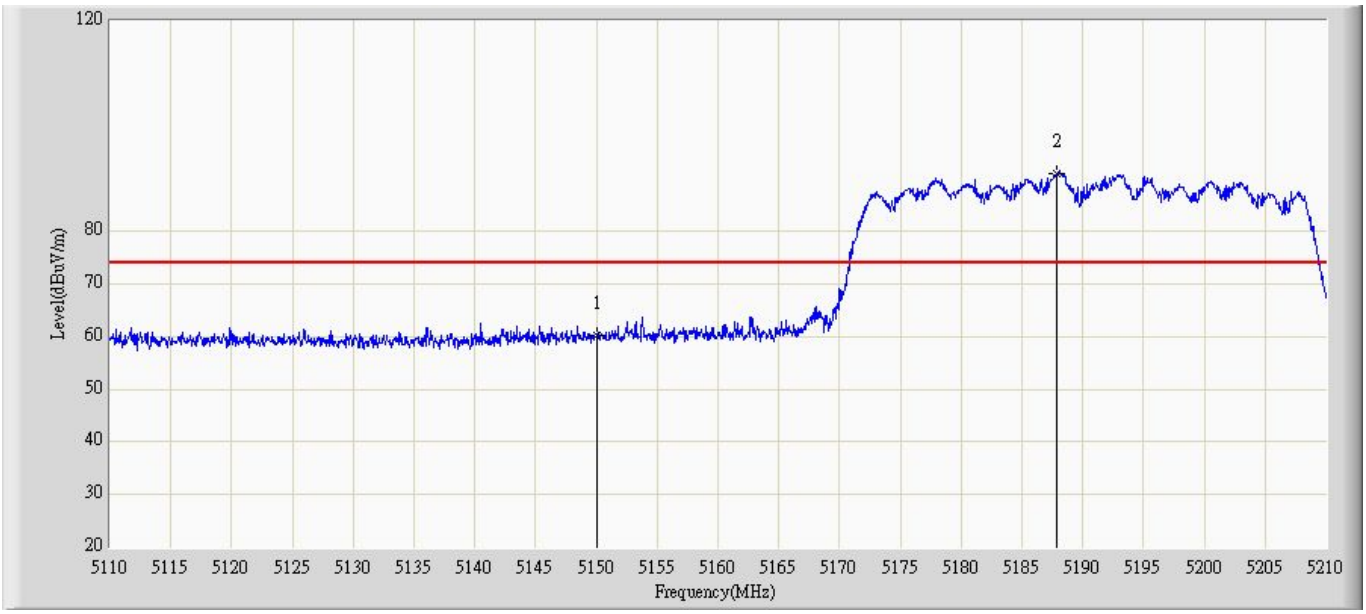
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	62.593	70.813	-11.407	74.000	-8.220	PK
2		*	5188.900	95.657	103.888	N/A	N/A	-8.231	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0+1	



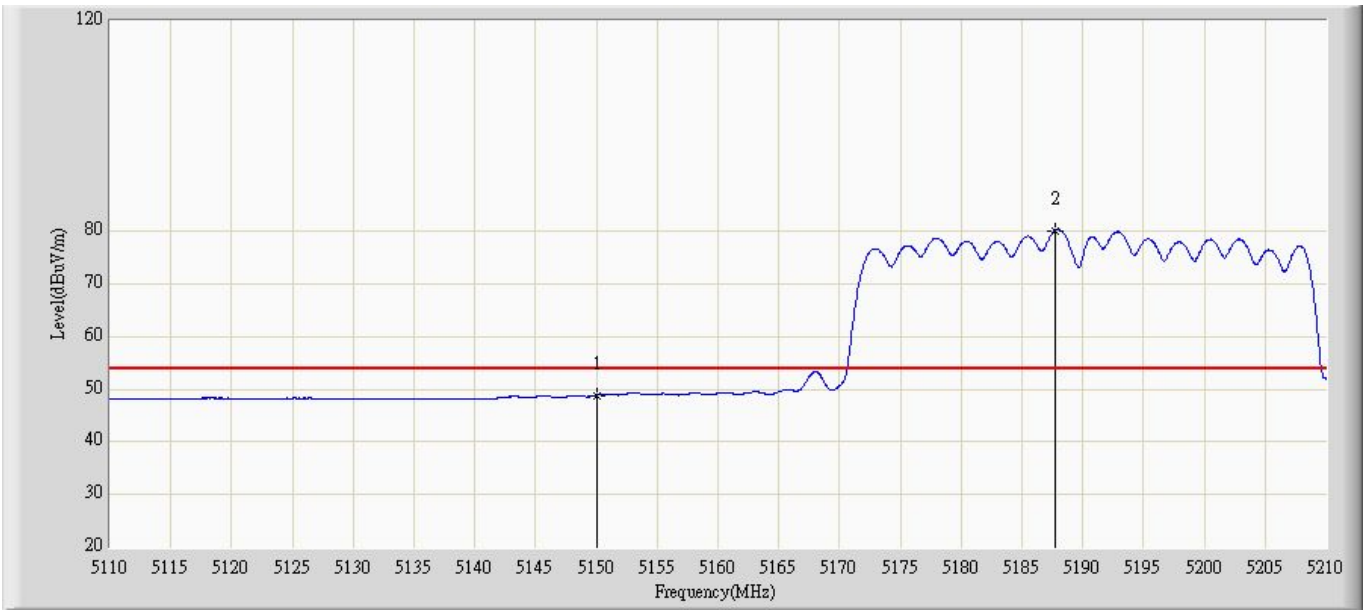
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.692	56.912	-5.308	54.000	-8.220	AV
2		*	5188.500	83.247	91.478	N/A	N/A	-8.231	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0+1	



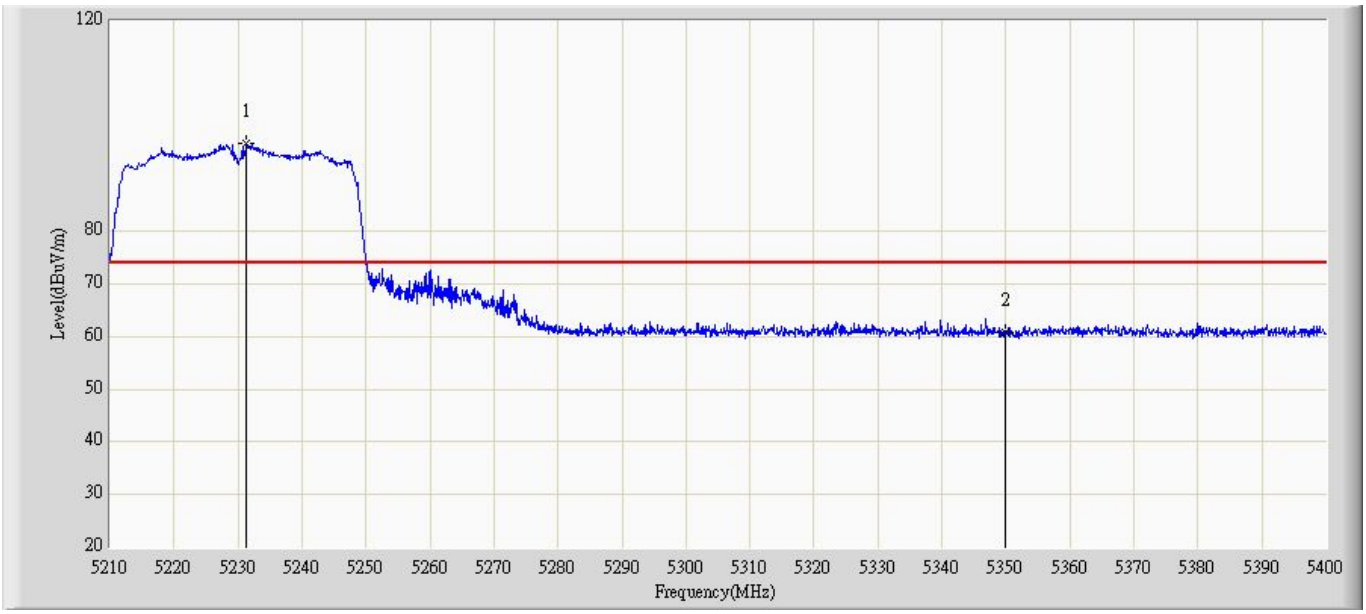
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	60.225	68.445	-13.775	74.000	-8.220	PK
2		*	5187.900	91.005	99.236	N/A	N/A	-8.231	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5190 MHz by 802.11n40 ant 0+1	



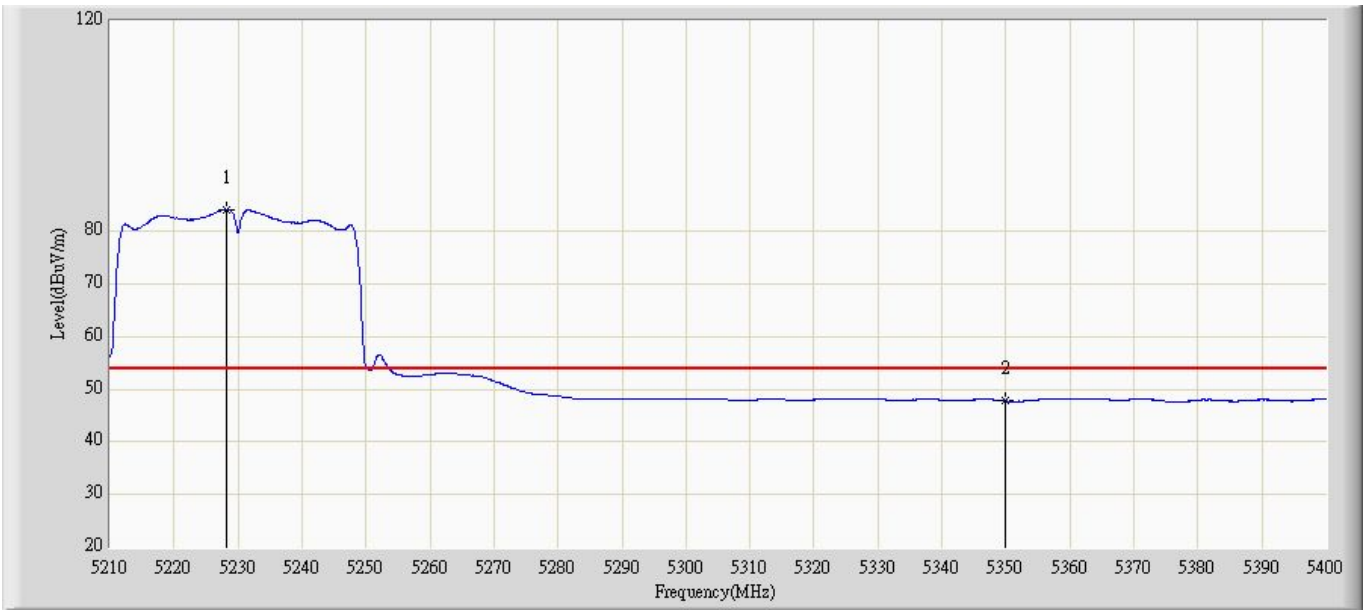
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			5150.000	48.853	57.073	-5.147	54.000	-8.220	AV
2		*	5187.700	80.169	88.399	N/A	N/A	-8.230	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0	



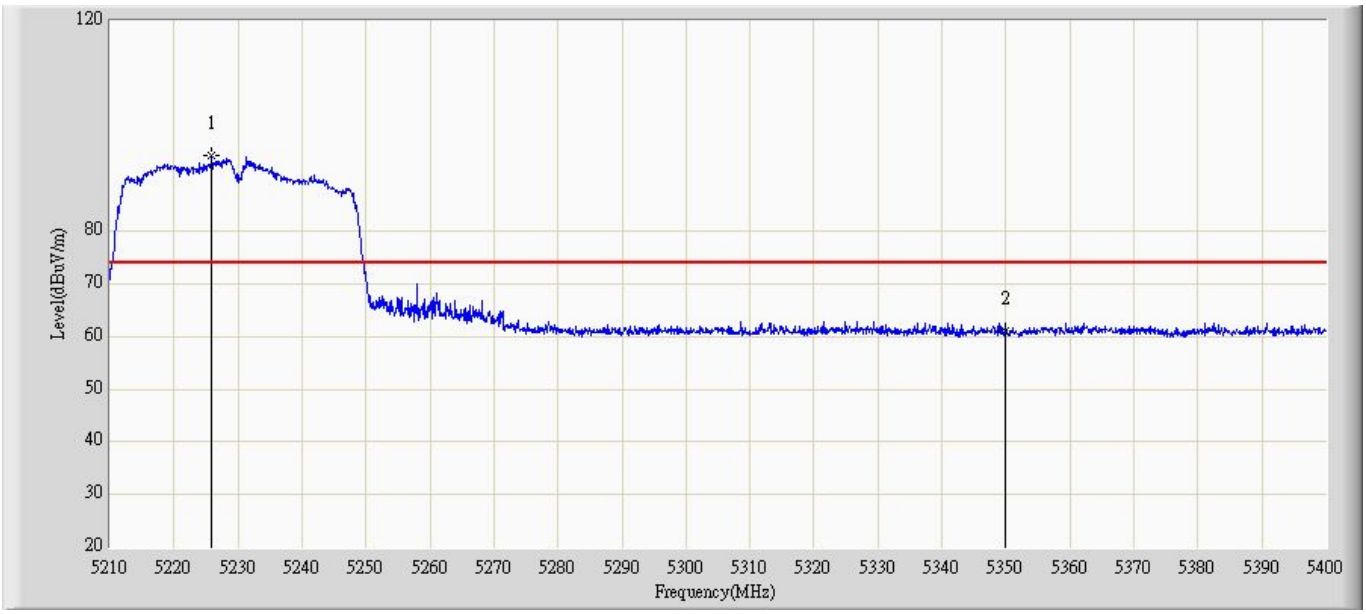
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5231.375	96.614	104.841	N/A	N/A	-8.227	PK
2			5350.000	60.861	69.063	-13.139	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0	



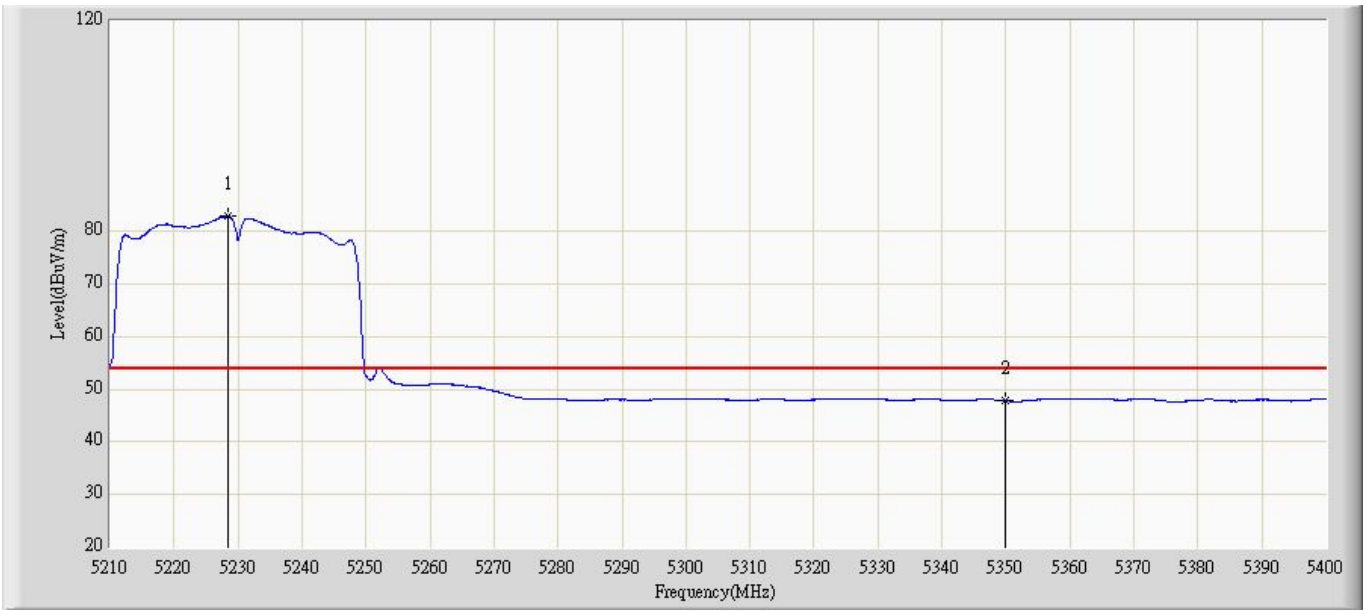
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5228.240	84.172	92.400	N/A	N/A	-8.228	AV
2			5350.000	47.787	55.989	-6.213	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0	



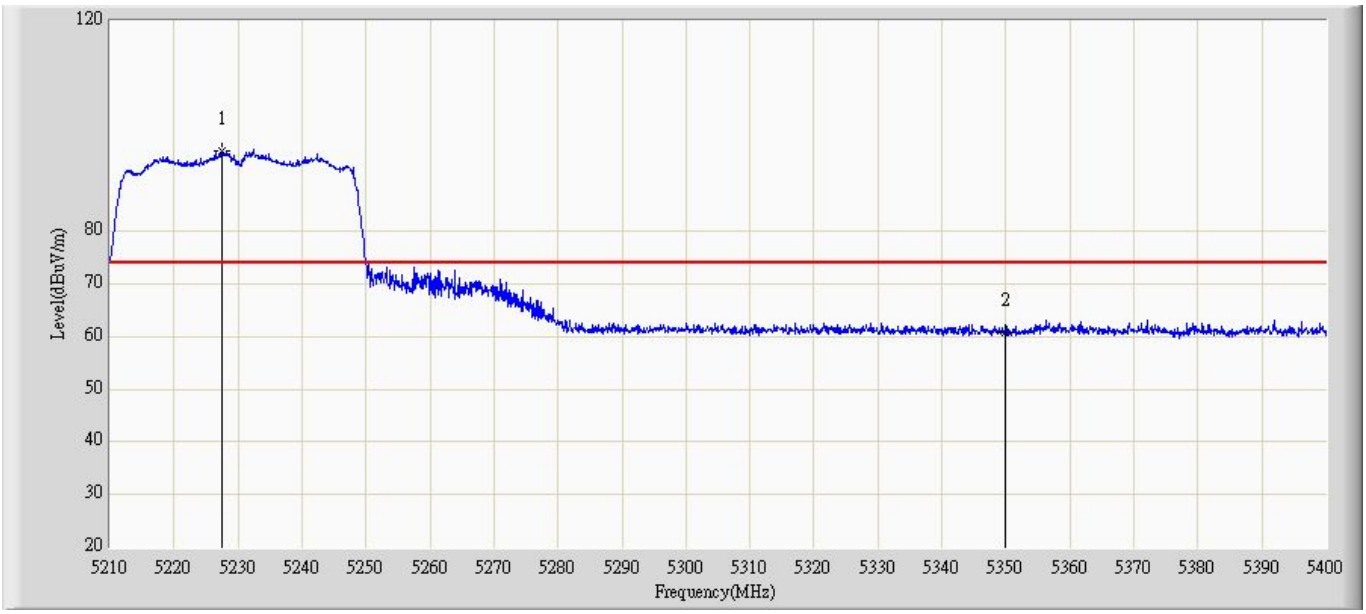
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5225.865	94.425	102.654	N/A	N/A	-8.229	PK
2			5350.000	61.211	69.413	-12.789	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0	



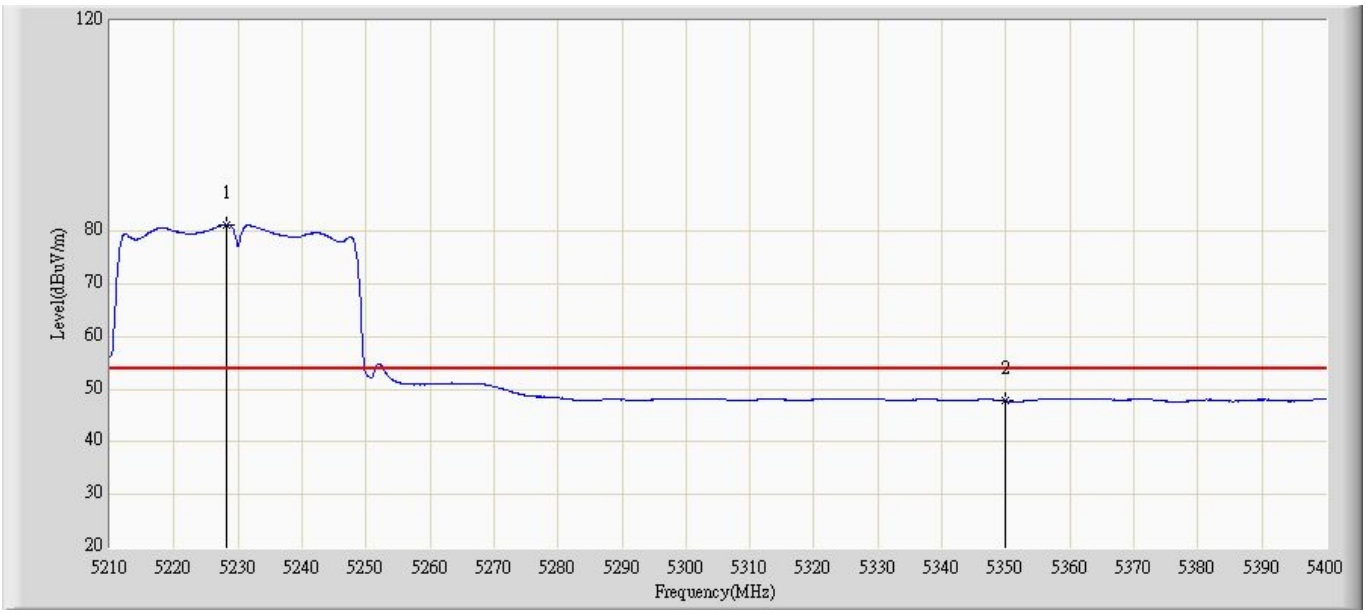
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5228.525	82.825	91.053	N/A	N/A	-8.229	AV
2			5350.000	47.792	55.994	-6.208	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:23
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 1	



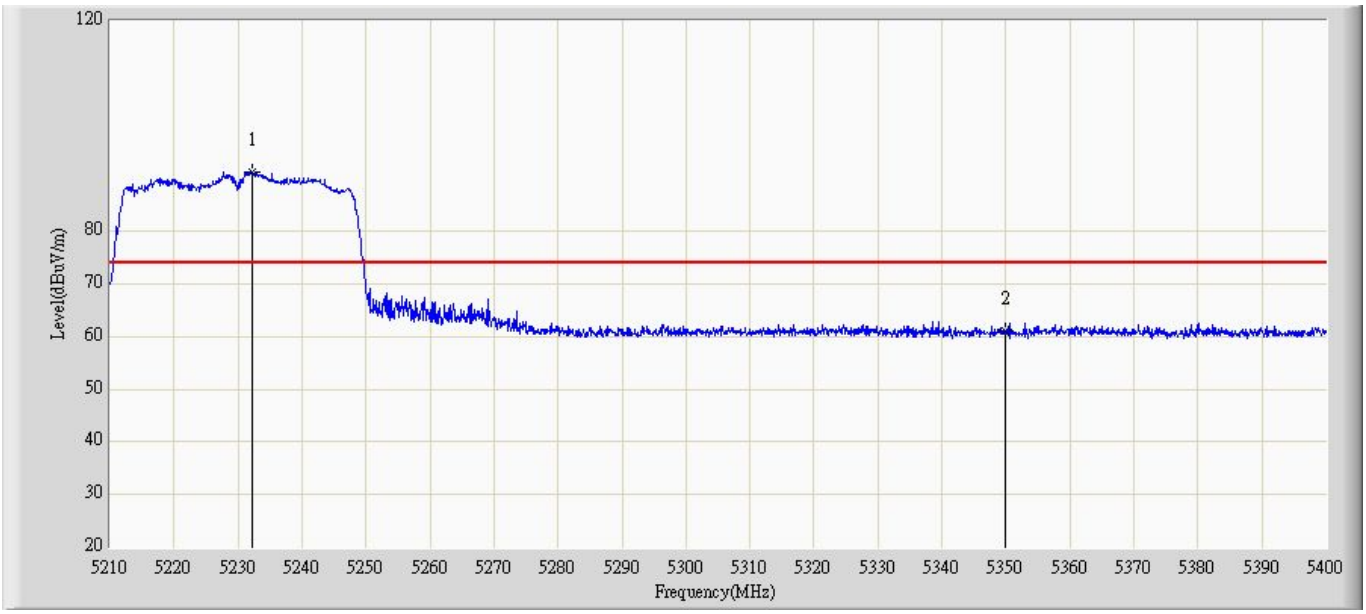
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5227.575	95.345	103.573	N/A	N/A	-8.228	PK
2			5350.000	60.899	69.101	-13.101	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 1	



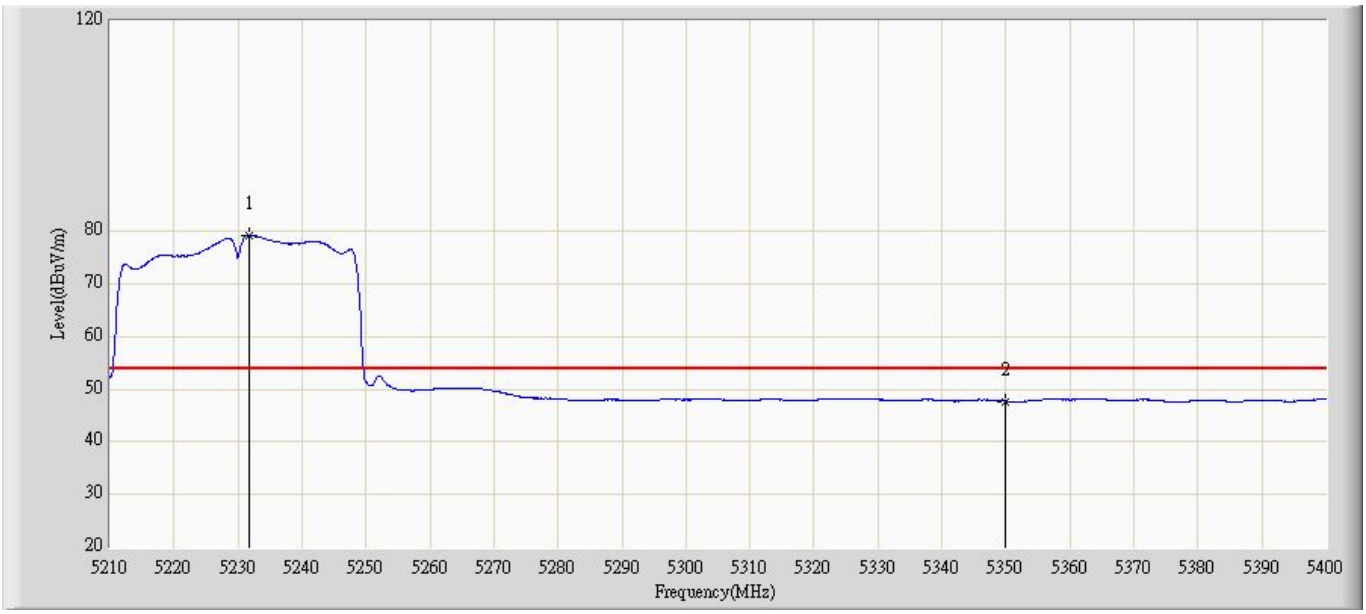
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5228.240	81.337	89.565	N/A	N/A	-8.228	AV
2			5350.000	47.759	55.961	-6.241	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 1	



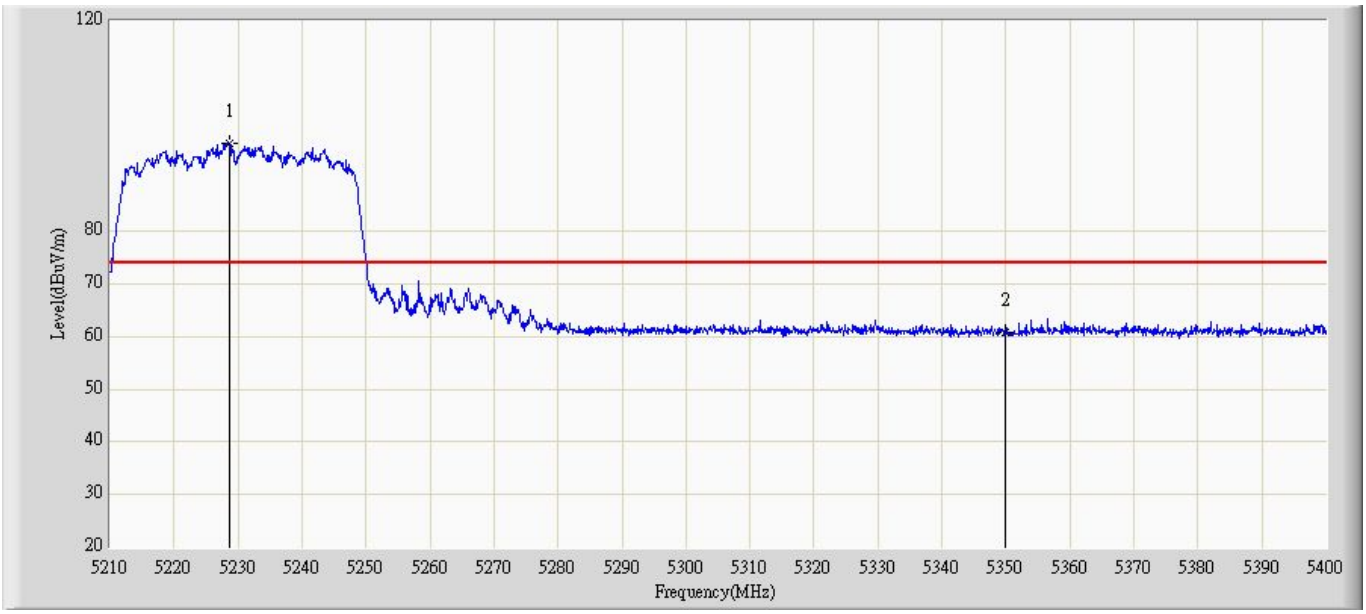
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5232.325	91.350	99.576	N/A	N/A	-8.225	PK
2			5350.000	61.058	69.260	-12.942	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 1	



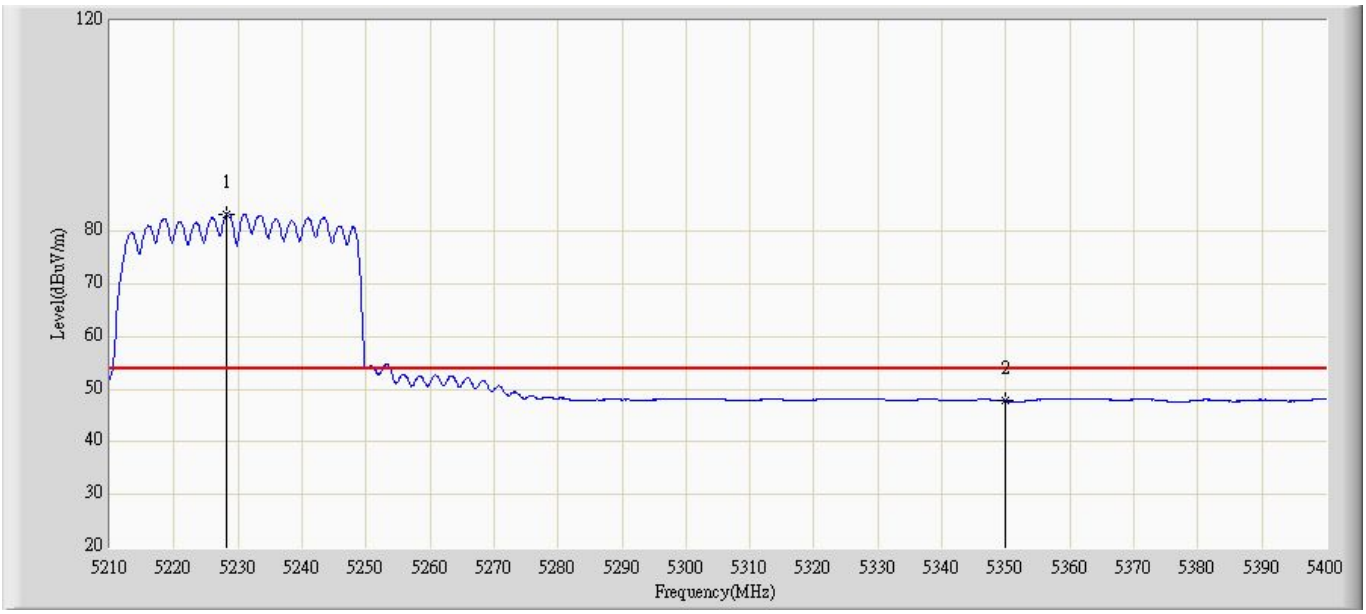
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5231.755	79.173	87.400	N/A	N/A	-8.227	AV
2			5350.000	47.707	55.909	-6.293	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0+1	



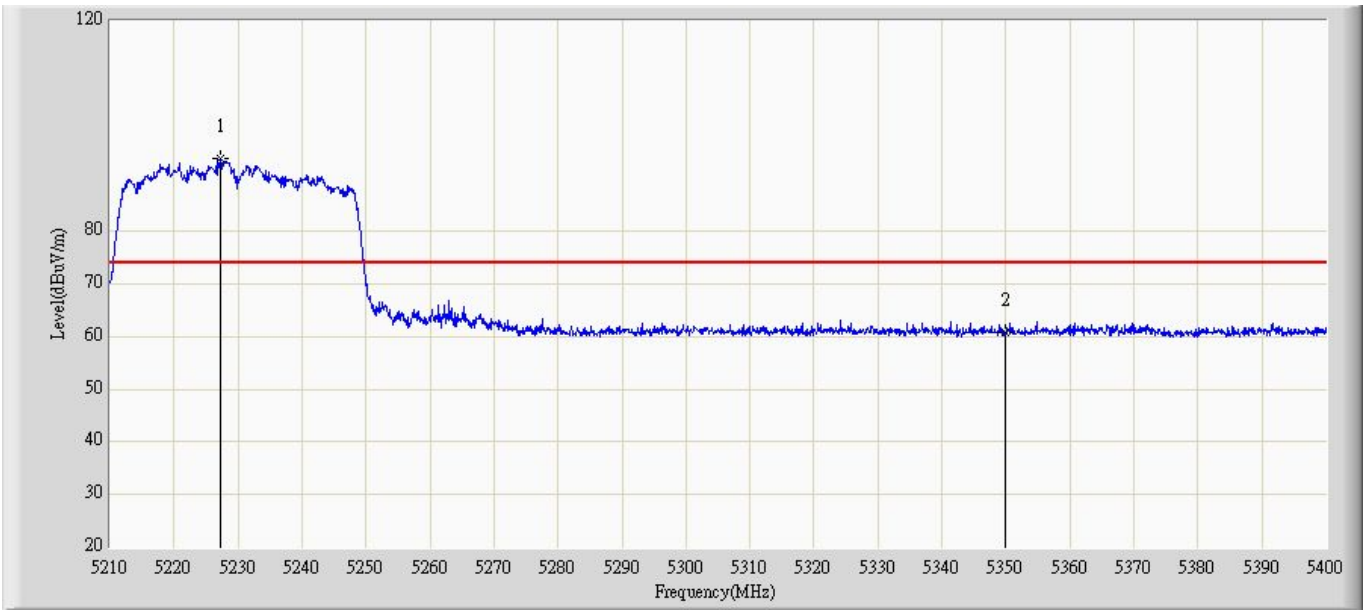
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5228.620	96.842	105.070	N/A	N/A	-8.229	PK
2			5350.000	60.824	69.026	-13.176	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:30
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0+1	



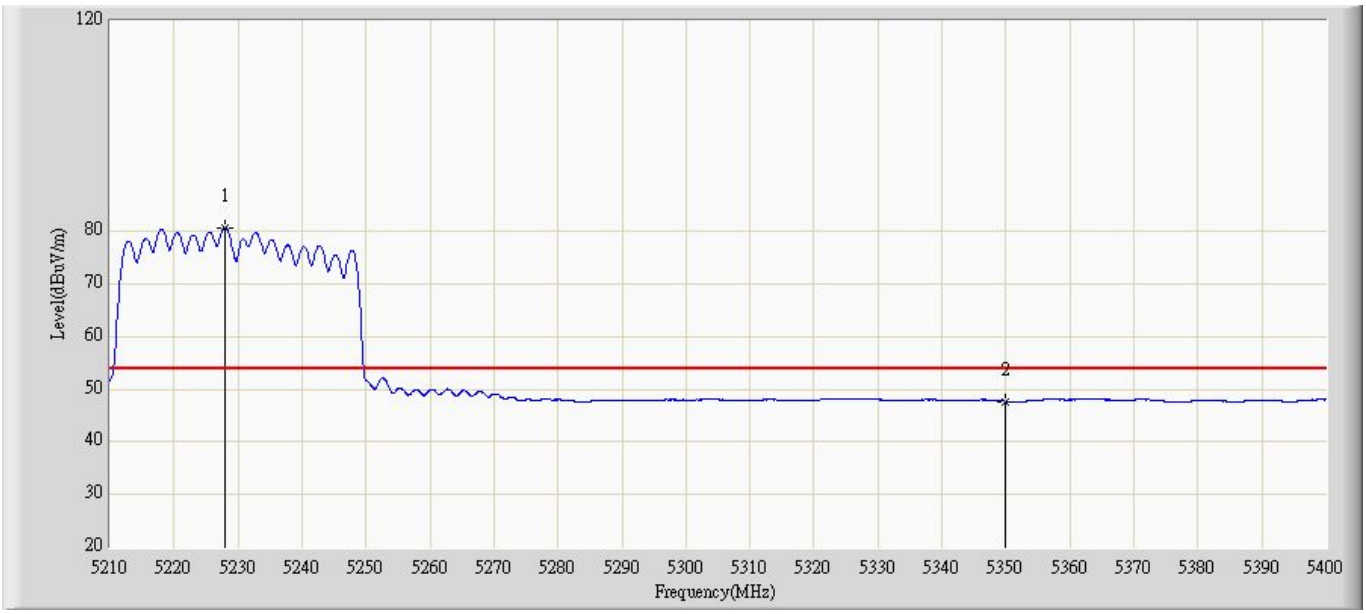
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5228.145	83.225	91.453	N/A	N/A	-8.228	AV
2			5350.000	47.789	55.991	-6.211	54.000	-8.201	AV

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0+1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5227.290	93.738	101.966	N/A	N/A	-8.228	PK
2			5350.000	60.817	69.019	-13.183	74.000	-8.201	PK

Engineer: Toms	
Site: AC5	Time: 2012/07/05 - 16:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT:IP-STB	Power: DC 5V
Note: Mode3: Transmit at channel 5230 MHz by 802.11n40 ant 0+1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	5227.955	80.775	89.003	N/A	N/A	-8.228	AV
2			5350.000	47.693	55.895	-6.307	54.000	-8.201	AV

11. Frequency Stability

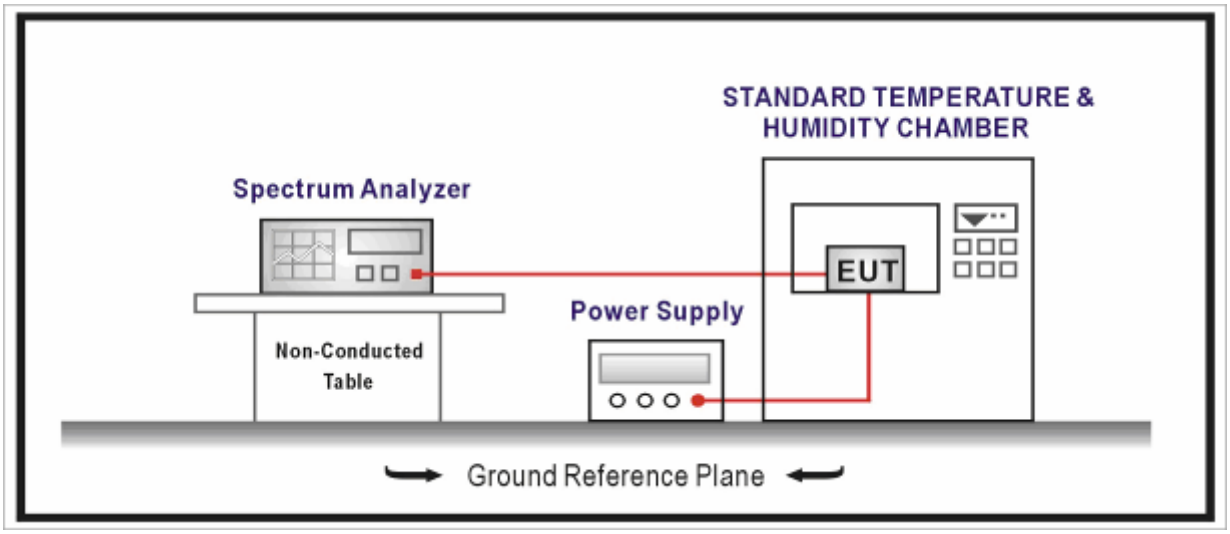
11.1. Test Equipment

Frequency Stability / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2013.04.18
AC Power Supply	IDRC	CF-500TP	979422	2012.09.22
DC Power Supply	IDRC	CD-035-020PR	977272	2012.09.22
Programmable Temperature & Humidity Chamber	Gaoyu	TH-1P-B	WIT-05121302	2013.01.13
Temperature/Humidity Meter	zhicheng	ZC1-2	TR8-TH	2013.05.07

Note: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

11.2. Test Setup



11.3. Limit

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 in the user's manual.

11.4. Test Procedure

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to highest. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ decreased per stage until the lowest temperature reached.

Frequency Stability Under Voltage Variations:

Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

11.5. Uncertainty

The measurement uncertainty is defined as ± 100 Hz

11.6. Test Result

Product	:	IP-STB
Test Item	:	Frequency Stability
Test Site	:	TR-8
Test Mode	:	Carrier Transmit

Operating Frequency: 5180MHz					
Temp (℃)	Voltage (AC)	Frequency Tolerance (ppm)			
		0 minutes	2 minutes	5 minutes	10 minutes
-10	102	2.45	2.45	2.49	2.48
	120	2.03	2.03	2.01	2.01
	138	2.24	2.22	2.21	2.17
20	102	2.45	2.45	2.49	2.48
	120	2.02	2.02	2.01	2.00
	138	2.23	2.21	2.21	2.18
55	102	2.38	2.37	2.37	2.36
	120	2.03	2.02	2.01	2.00
	138	2.28	2.25	2.25	2.23

12. Receiver Spurious Emission for Industry Canada RSS-Gen Requirement

12.1. Test Equipment

Radiated Emission / AC-2

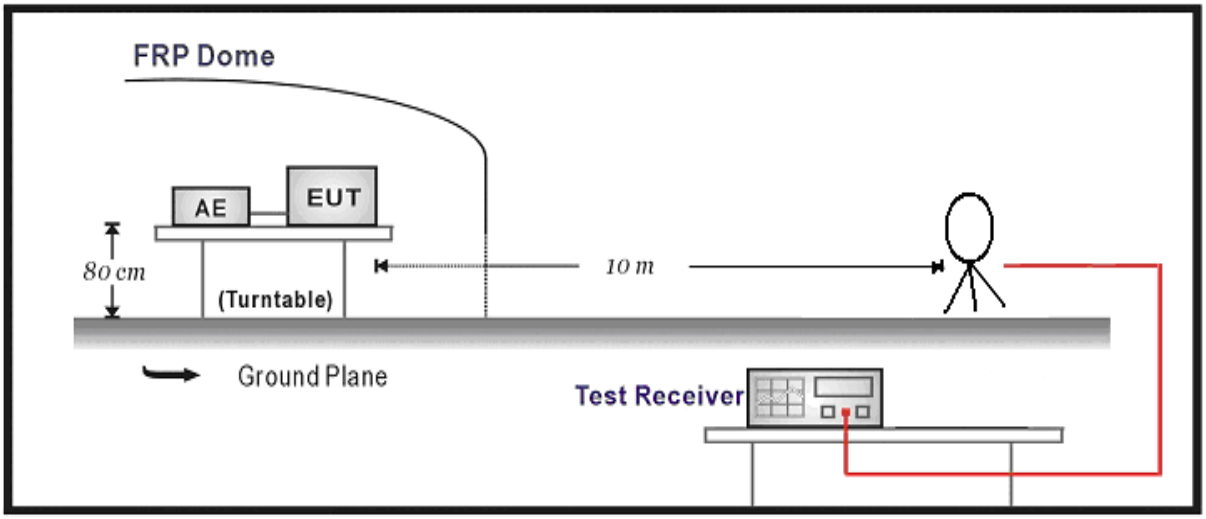
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2012.11.22
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012.10.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH	2012.01.14

Radiated Emission / AC-5

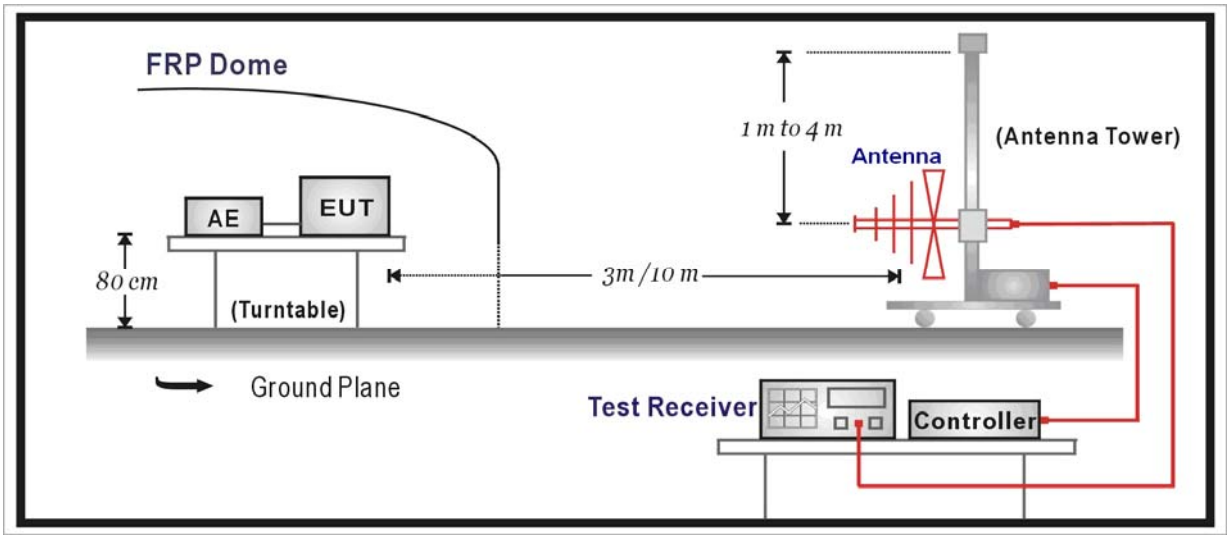
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	QuieTek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	499	2012.06.11
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2013.11.24
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C1	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC5-C2	2013.03.02
Coaxial Cable	Huber+Suhner	SUCOFLEX 102	AC5-C3	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC5-TH	2013.01.10

12.2. Test Setup

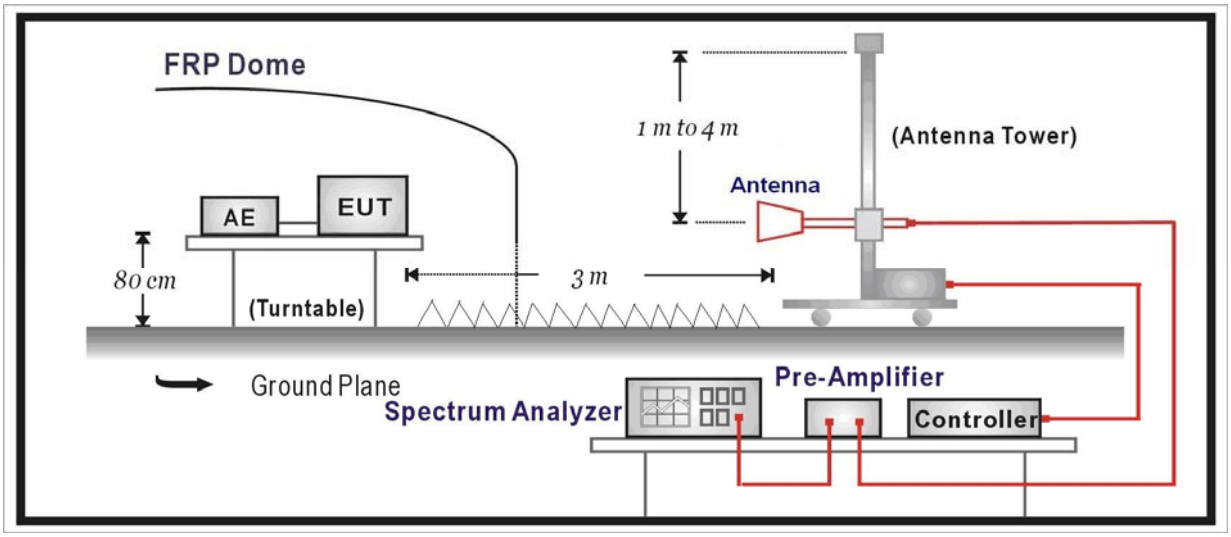
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



12.3. Limit

FCC Part 15 Subpart B Paragraph 15.109		
Frequency (MHz)	Distance (m)	Level (dBuV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54

Note 1: The lower limit shall apply at the transition frequency.

Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

Note 3: E field strength (dBuV/m) = 20 log E field strength (uV/m)

12.4. Test Procedure

According to ANSI C63.10: 2009.

The EUT is placed on a turn table which is 0.8 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 from 1 meter to 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 C63.4: 2009 on radiated measurement.

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

The frequency range from 9kHz to10th harmonic is checked.

Note: When doing emission measurement above 1GHz, the horn antenna will be bended down a little (as horn antenna has the narrow beamwidth) in order to keeping the antenna in the “cone of radiation” of EUT. The 3dB beamwidth is 60~10 degrees for H-plane and 90~10 degrees for E-plane.

12.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB

below 1G is defined as ± 3.8 dB

12.6. Test Result

All of the test result shown indicates the worst case, and spectrum analyzer parameters setting as shown below:
Peak detector: RBW = 1MHz, VBW = 3MHz, sweep time = 200ms;
Average detector: RBW = 1MHz, VBW = 10Hz, sweep time = auto.
Measure Level = Reading Level + Cable Loss + Antenna Factor - Preamplifier Gain

Mode 1: Receive by 802.11n (20MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 0+1	36	H	599.8	3.7	13.4	17.1	46	-28.9	QP
		V	599.8	2.9	13.7	16.5	46	-29.5	QP
		H	1663.0	44.5	-6.6	37.8	54(Note1)	-16.2	PK
		V	1663.0	44.3	-6.6	37.6	54(Note1)	-16.4	PK
	40	H	666.8	5.7	12.2	17.9	46	-28.1	QP
		V	666.8	4.7	13.3	18.0	46	-28.0	QP
		H	2870.0	44.8	-2.5	42.3	54(Note1)	-11.7	PK
		V	2870.0	44.4	-0.9	43.5	54(Note1)	-10.5	PK
	48	H	553.3	6.5	11.9	18.4	46	-27.6	QP
		V	553.3	4.5	12.0	16.5	46	-29.5	QP
		H	2334.5	46.1	-3.2	42.9	54(Note1)	-11.1	PK
		V	2334.5	47.9	-3.2	44.7	54(Note1)	-9.3	PK

Note1: This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.

Mode 2: Receive by 802.11n (40MHz)

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 0+1	38	H	697.3	3.5	14.3	17.8	46	-28.2	QP
		V	697.3	3.0	14.3	17.3	46	-28.7	QP
		H	5080.0	41.9	3.7	45.6	54(Note1)	-8.4	PK
		V	5080.0	41.7	3.7	45.3	54(Note1)	-8.7	PK
	46	H	599.8	3.8	13.4	17.3	46	-28.7	QP
		V	599.8	3.0	13.7	16.7	46	-29.3	QP
		H	1663.0	43.6	-6.6	36.9	54(Note1)	-17.1	PK

		V	1663.0	44.3	-6.6	37.7	54(Note1)	-16.3	PK

Note1: This limit applies for using average detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.