Test Report

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

Product Name	:	IP-STB
Model No.	:	4200X
FCC ID	:	TC2-R1004
IC	:	5959A-R1004

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

Date of Receipt	:	14/09/2012
Test Date	:	14/09/2012~23/09/2012
Issued Date	:	24/09/2012
Report No.	:	129S019R-RF-US-P05V01
Report Version	:	V2.0-draft

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

Issued Date : 24/09/2012
Report No. : 129S019R-RF-US-P05V01

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.	:	4200X
FCC ID	:	TC2-R1004
IC	:	5959A-R1004
EUT Voltage	:	12V
Brand Name	:	Roku
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C: 2012 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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Approved By : Marlin chen
(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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1. General Information

1.1. EUT Description

Product Name	IP-STB
Brand Name	Roku
Model No.	4200X
EUT Voltage	12V
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
Components	
Adapter #1	Brand Name: AmpowerTek M/N: T99A123.00 Input: 100-120V~0.5A 50/60Hz Output: 12V, 1A
Adapter #2	Brand Name: Roku M/N: FA-1201000SUC Input: 120V~60Hz 0.5A Output: 12V, 1.0A

Adapter #3	Brand Name: Roku M/N: MU12AB120100-A1 Input: 100-240V~50/60Hz 0.3A Output: 12V, 1A

Note

1: This EUT has three kinds of adapter, we choose adapter 1# for all RF testing.

2: This is IP STB, streaming players deliver an affordable, fun and friendly way to instantly stream entertainment to a TV, embody 2.4/5GHz dual band 2 by 2 antenna WiFi function.

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
Antenna 1	Cortec Technology Inc.	N/A	2dBi for 2.4GHz, 1dBi for 5GHz
Antenna 2	Cortec Technology Inc.	N/A	2dBi for 2.4GHz, 1dBi for 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 802.11b
Mode 2: Transmit by 802.11g
Mode 3: Transmit by 802.11a
Mode 4: Transmit by 802.11n (20MHz)
Mode 5: Transmit by 802.11n (40MHz)

Note:

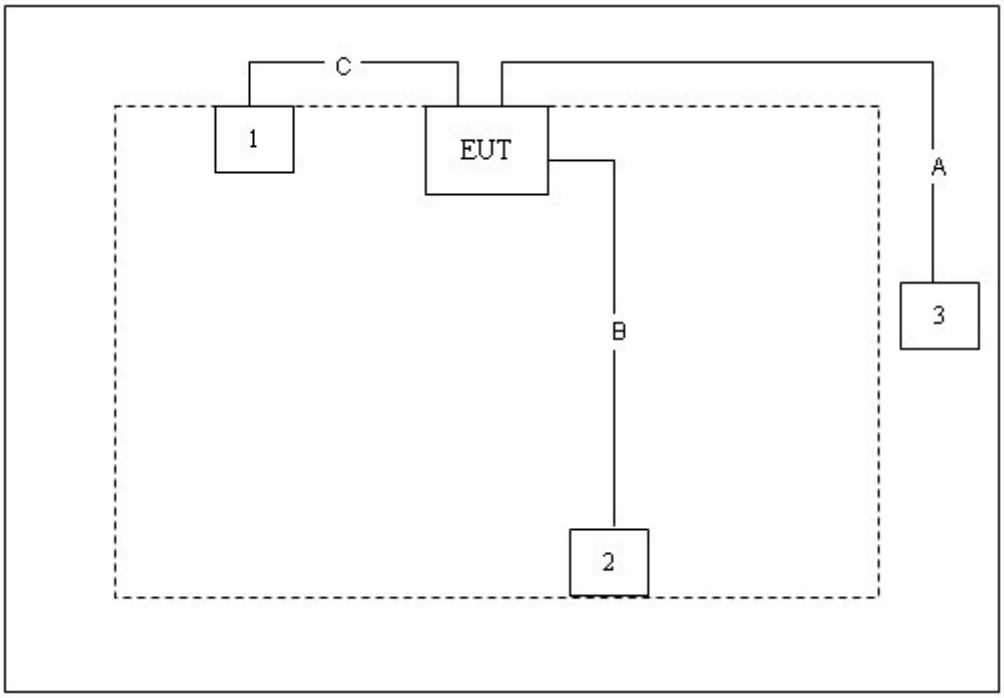
1. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.
2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 129259R-ITUSP01V02.

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	LCD Monitor	DELL	ST2420LB	CN-OXOK27-74261-189-OA4U	Non-Shielded, 1.8m
2	iPod	Apple	A1199	7J71085BVQ5E	Power by PC
3	Laptop PC	Asus	N80V	8BN0AS226971468	N/A

1.4. Configuration of Tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	LAN Cable	Shielded, >10m
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
RF Antenna Conducted Spurious	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(d)	Yes	No
Radiated Emission Band Edge	FCC CFR Title 47 Part 15 Subpart C: 2011 15.247(d)	Yes	No
Operation Frequency Range of 20dB Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2011 15.215(c)	Yes	No
Occupied Bandwidth	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(a)(2)	Yes	No
Power Output	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(b)(3)	Yes	No
Power Spectral Density	FCC CFR Title 47 Part 15 Subpart C: 2011 Section 15.247(e)	Yes	No

Performed Test Item	Normative References	Test Performed	Deviation
Conducted Emission	RSS-Gen Issue 3 December 2010 Section 7.2.2	Yes	No
Radiated Emission	RSS-210 Issue 8 December 2010 Section 2.7 Table 2 and Table 3	Yes	No
RF Antenna Conducted Spurious	RSS-210 Issue 8 December 2010 Section A8.5	Yes	No
Radiated Emission Band Edge	RSS-210 Issue 8 December 2010 Section A8.5	Yes	No
Occupied Bandwidth	RSS-Gen Issue 3 December 2010 Section 4.6.1 and 4.6.2 RSS-210 Issue 8 December 2010 Section A8.2(1)	Yes	No
Power Output	RSS-210 Issue 8 December 2010 Section A8.4(4)	Yes	No
Power Spectral Density	RSS-210 Issue 8 December 2010 Section A8.2(2)	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

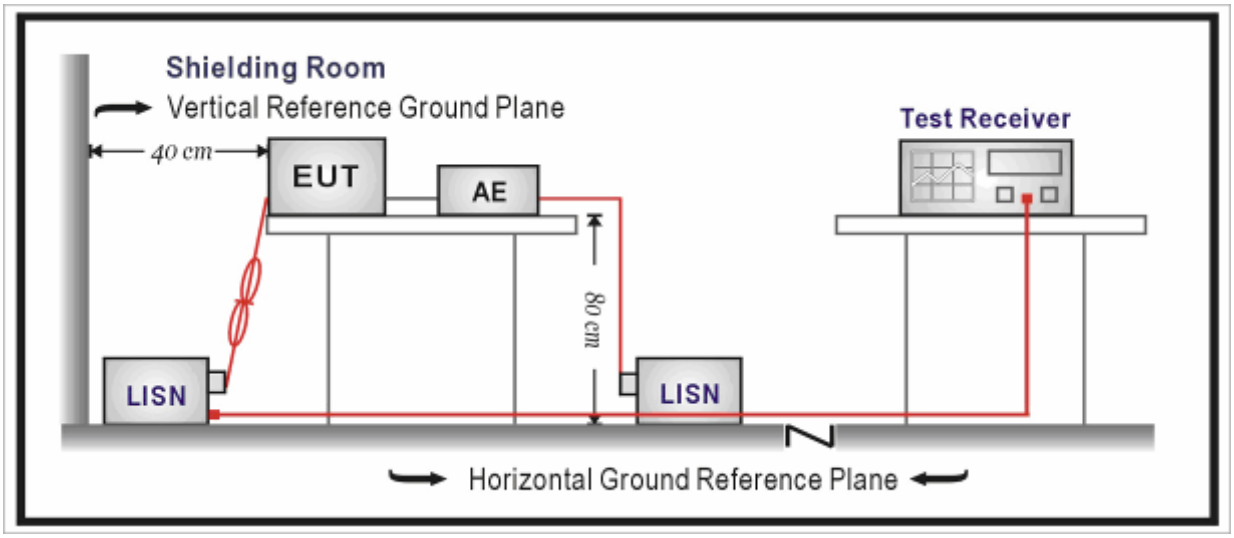
3.1. Test Equipment

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	2013.09.17
50ohm Coaxial Switch	Anritsu	MP59B	6200464462	2013.03.02
50ohm Termination	SHX	TF2	07081401	2013.09.17
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 and tested according to ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements. 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.

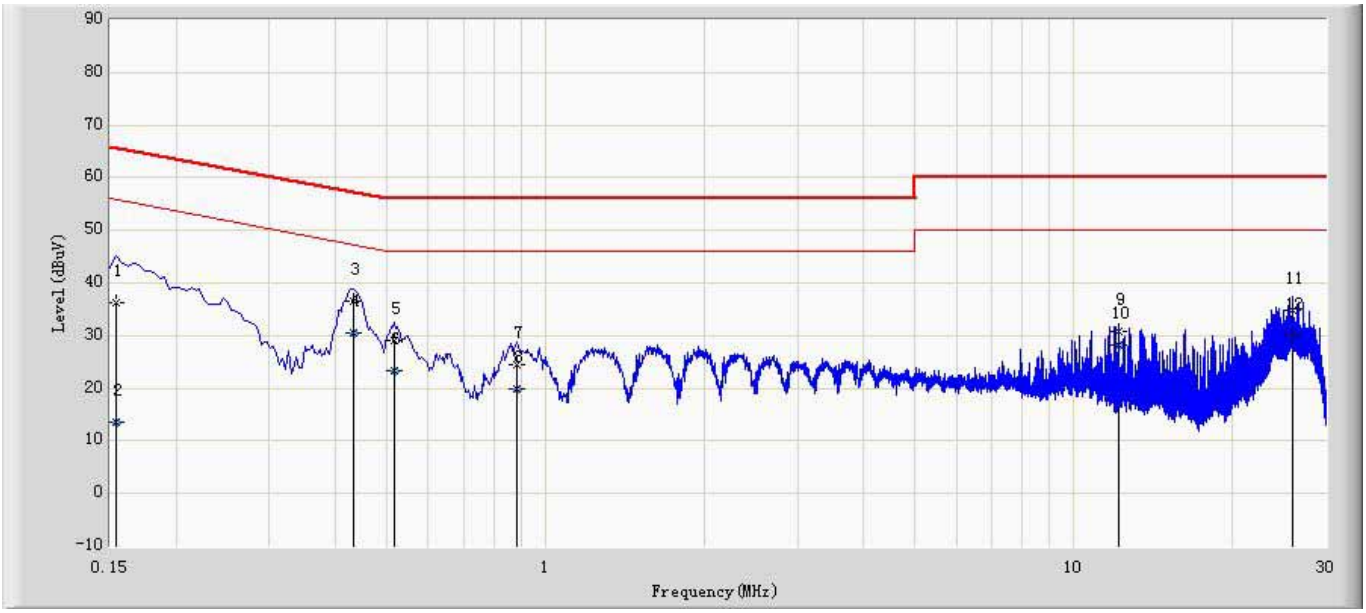
The excess length of the power cord between the EUT and the LISN receptacle were folded back and forth at the center of the lead to form a bundle not exceeding 40 cm in length. Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

3.5. Uncertainty

The measurement uncertainty is defined as ± 2.02 dB

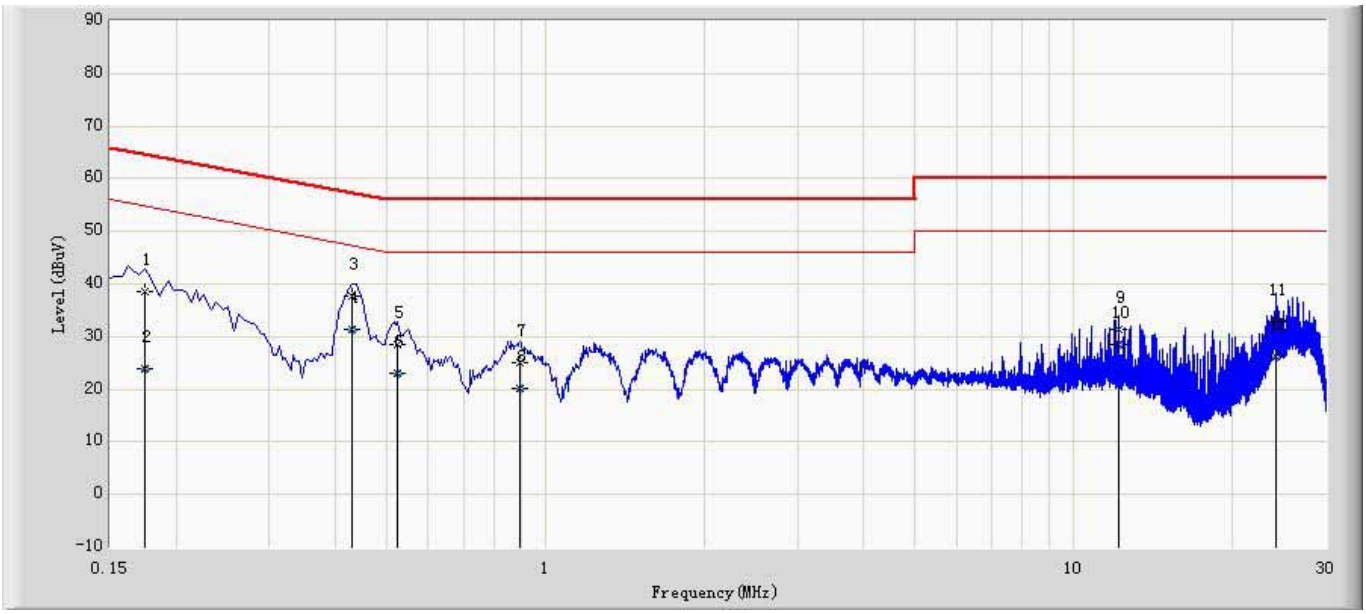
3.6. Test Result

Engineer: Toms	
Site: TR1	Time: 2012/09/23 - 17:47
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		0.154	36.341	26.495	-29.440	65.781	9.846	QP
2		0.154	13.678	3.832	-42.103	55.781	9.846	AV
3		0.434	36.640	26.738	-20.536	57.176	9.902	QP
4	*	0.434	30.575	20.673	-16.601	47.176	9.902	AV
5		0.518	29.027	19.124	-26.973	56.000	9.903	QP
6		0.518	23.256	13.352	-22.744	46.000	9.903	AV
7		0.882	24.542	14.722	-31.458	56.000	9.821	QP
8		0.882	19.809	9.988	-26.191	46.000	9.821	AV
9		12.198	30.844	20.782	-29.156	60.000	10.062	QP
10		12.198	28.254	18.192	-21.746	50.000	10.062	AV
11		25.874	34.779	24.216	-25.221	60.000	10.563	QP
12		25.874	30.078	19.515	-19.922	50.000	10.563	AV

Engineer: Toms	
Site: TR1	Time: 2012/09/23 - 17:47
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		0.174	38.688	28.727	-26.079	64.767	9.961	QP
2		0.174	24.040	14.079	-30.727	54.767	9.961	AV
3		0.430	37.730	27.705	-19.523	57.253	10.025	QP
4	*	0.430	31.293	21.269	-15.960	47.253	10.025	AV
5		0.526	28.475	18.439	-27.525	56.000	10.037	QP
6		0.526	22.938	12.902	-23.062	46.000	10.037	AV
7		0.894	25.052	15.067	-30.948	56.000	9.986	QP
8		0.894	20.296	10.310	-25.704	46.000	9.986	AV
9		12.198	31.286	20.992	-28.714	60.000	10.294	QP
10		12.198	28.566	18.272	-21.434	50.000	10.294	AV
11		24.098	32.814	22.387	-27.186	60.000	10.427	QP
12		24.098	26.071	15.644	-23.929	50.000	10.427	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

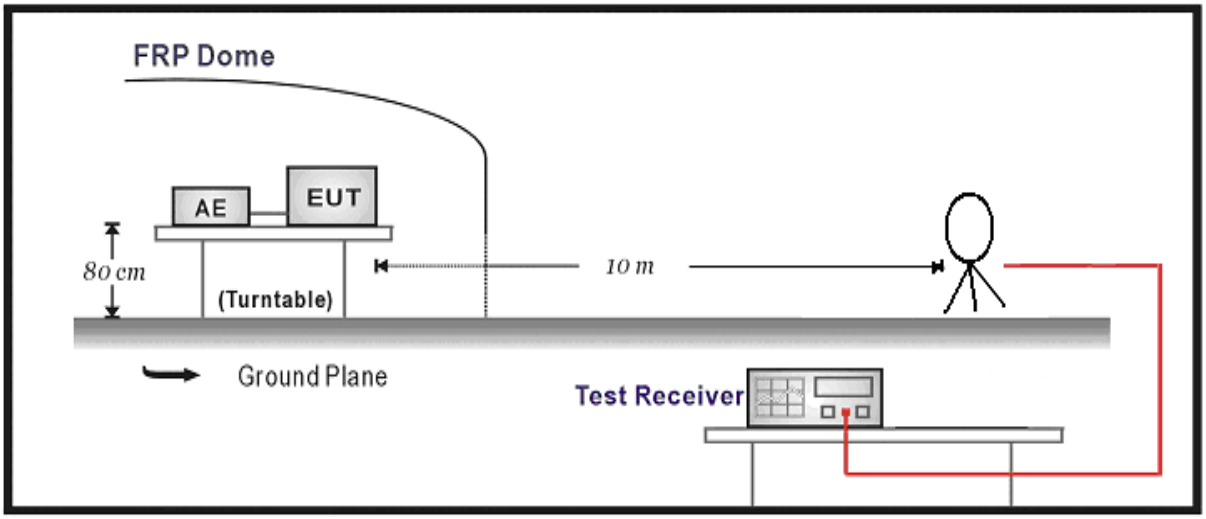
Radiated Emission / AC-5

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

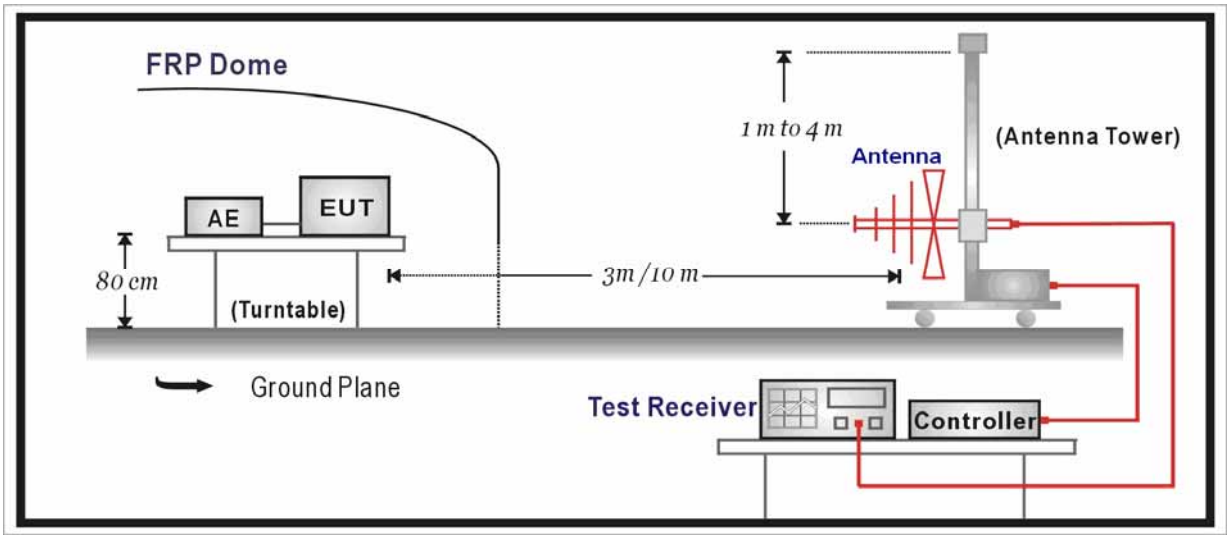
Note 1: All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

4.2. Test Setup

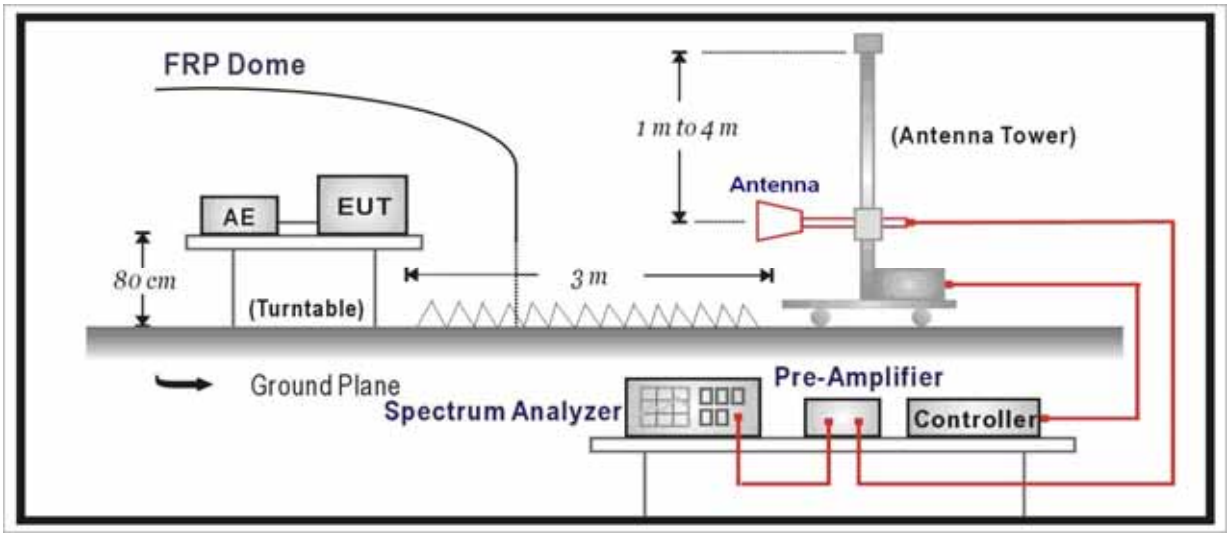
Below 30MHz Test Setup:



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 and tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 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.

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 degrees for H-plane and 90 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.

Measure Level = Reading Level + Cable Loss + Antenna Factor - Preamplifier Gain

802.11b

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 1	1	V	2412.0	71.9	30.8	102.7	Fundamental	/	PK
		V	302.1	12.9	14.8	27.7	46	-18.3	QP
		V	500.0	15.0	19.7	34.7	46	-11.3	QP
		V	3200.0	42.8	-0.6	42.2	54(note3)	-11.8	PK
		V	4825.0	47.2	2.6	49.8	54(note3)	-4.2	PK
		V	7239.0	51.8	8.9	60.7	74	-13.3	PK
		V	7236.0	44.2	8.9	53.1	54	-0.9	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	71.3	31.2	102.5	Fundamental	/	PK
		V	317.1	13.3	15.2	28.5	46	-17.5	QP
		V	572.2	13.1	21.2	34.3	46	-11.7	QP
		V	3200.0	43.6	-0.6	43.0	54(note3)	-11.0	PK
		V	4876.0	49.2	2.8	52.0	54(note3)	-2.0	PK
		V	7315.5	53.8	8.8	62.6	74	-11.4	PK
		V	7311.0	43.9	8.8	52.7	54	-1.3	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	11	V	2462.0	70.5	30.9	101.4	Fundamental	/	PK
		V	306.0	12.6	14.9	27.5	46	-18.5	QP
		H	580.0	12.9	21.2	34.1	46	-11.9	QP
		V	3200.0	44.1	-0.6	43.5	54(note3)	-10.5	PK
		V	4927.0	45.1	3.0	48.1	54(note3)	-5.9	PK
		V	7383.5	50.8	8.9	59.7	74	-14.3	PK
		V	7386.0	43.4	8.9	52.3	54	-1.7	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
Chain 2	1	V	2412.0	71.1	30.8	101.9	Fundamental	/	PK
		V	322.5	12.5	15.4	27.9	46	-18.1	QP
		V	549.0	14.2	21.2	35.4	46	-10.6	QP

		V	3200.0	42.9	-0.6	42.3	54(note3)	-11.7	PK
		V	4825.0	49.4	2.6	52.0	54(note3)	-2.0	PK
		V	7230.5	51.4	8.9	60.3	74	-13.7	PK
		V	7236.0	44.2	8.9	53.1	54	-0.9	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	72.6	31.2	103.8	Fundamental	/	PK
		H	316.2	13.2	15.2	28.4	46	-17.6	QP
		V	551.9	13.5	21.2	34.7	46	-11.3	QP
		V	3200.0	42.6	-0.6	42.0	54(note3)	-12.0	PK
		V	4876.0	48.3	2.8	51.1	54(note3)	-2.9	PK
		V	7307.0	43.5	8.8	52.3	54(note3)	-1.7	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	11	V	2462.0	74.8	30.9	105.7	Fundamental	/	PK
		V	309.8	12.8	15.0	27.8	46	-18.2	QP
		H	542.6	13.8	21.0	34.8	46	-11.2	QP
		V	3200.0	42.6	-0.6	42.0	54(note3)	-12.0	PK
		V	4924.0	50.5	3.0	53.5	54	-0.5	AV
		V	4927.0	53.2	3.0	56.2	74	2.2	PK
		V	7383.5	49.0	8.9	57.9	74	-16.1	PK
		V	7386.0	44.1	8.9	53.0	54	-1.0	AV
		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.

802.11g

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 1	1	V	2411.9	69.7	30.8	100.5	Fundamental	/	PK
		H	296.8	13.4	14.7	28.1	46	-17.9	QP
		H	567.4	13.9	21.3	35.2	46	-10.8	QP
		V	3200	50.0	-13.4	36.6	54(note3)	-17.4	PK
		V	4824.0	43.3	2.6	45.9	54(note3)	-8.1	PK

		V	7236.0	36.7	8.9	45.6	54	-8.4	AV
		V	7239.0	50.2	8.9	59.1	74	-14.9	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	70.0	31.2	101.2	Fundamental	/	PK
		V	302.6	12.7	14.8	27.5	46	-18.5	QP
		V	599.9	13.8	21.2	35.0	46	-11.0	QP
		V	3200.0	42.5	-0.6	41.9	54(note3)	-12.1	PK
		V	4876.0	45.6	2.8	48.4	54(note3)	-5.6	PK
		V	7298.5	44.2	8.8	53.0	54(note3)	-1.0	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	11	V	2462.3	70.9	30.9	101.8	Fundamental	/	PK
		H	589.7	13.7	21.2	34.9	46	-11.1	QP
		V	286.6	12.5	14.7	27.2	46	-18.8	QP
		V	3200.0	42.7	-0.6	42.1	54(note3)	-11.9	PK
		V	4927.0	45.9	3.0	48.9	54(note3)	-5.1	PK
		V	7386.0	37.4	8.9	46.3	54	-7.7	AV
		V	7392.0	51.8	8.9	60.7	74	-13.3	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
Chain 2	1	V	2412.1	64.6	30.8	95.4	Fundamental	/	PK
		H	296.3	13.0	14.7	27.7	46	-18.3	QP
		H	599.9	13.8	21.2	35.0	46	-11.0	QP
		V	3200.0	42.7	-0.6	42.1	54(note3)	-11.9	PK
		V	4824.0	44.0	2.6	46.6	54(note3)	-7.4	PK
		V	7236.0	33.8	8.9	42.7	54	-11.3	AV
		V	7239.0	45.7	8.9	54.6	74	-19.4	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	64.8	31.2	96.0	Fundamental	/	PK
		H	290.4	13.4	14.9	28.3	46	-17.7	QP
		H	628.0	14.7	21.2	35.9	46	-10.1	QP
		V	3200.0	42.5	-0.6	41.9	54(note3)	-12.1	PK
		V	4867.5	44.3	2.7	47.0	54(note3)	-7.0	PK
		V	7307.0	44.2	8.8	53.0	54(note3)	-1.0	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	11	V	2462.4	65.7	30.9	96.6	Fundamental	/	PK
		H	290.9	12.6	14.8	27.4	46	-18.6	QP
		H	500.0	16.1	19.7	35.8	46	-10.2	QP
		V	3200.0	42.7	-0.6	42.1	54(note3)	-11.9	PK

		V	4927.0	53.2	3.0	56.2	74	-17.8	PK
		V	4927.0	49.7	3.0	52.7	54	-1.3	AV
		V	7383.5	47.8	8.9	56.7	74	-17.3	PK
		V	7386.0	34.1	8.9	43.0	54	-11.0	AV
		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.

802.11a

Chain	CH	Antenna	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dB)	Measure Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
Chain 0	149	V	5745.0	106.8	-8.2	98.6	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	34.6	9.8	44.4	54(note3)	-9.6	PK
		V	11489.0	49.8	8.5	58.3	74	-15.7	PK
		V	11489.0	40.7	8.5	49.2	54	-4.8	AV
		V	16000.0	40.3	7.6	47.9	54(note3)	-6.1	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	157	V	5785.0	103.6	-8.2	95.4	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	38.5	9.8	48.3	54(note3)	-5.7	PK
		V	11570.0	42.7	8.6	51.3	54	-2.7	AV
		V	11574.0	52.5	8.5	61.0	74	-13.0	PK
		V	16000.0	40.0	7.6	47.6	54(note3)	-6.4	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	165	V	5825.0	104.4	-8.2	96.2	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
		V	13000.0	34.9	9.8	44.7	54(note3)	-9.3	PK
		V	11650.0	41.3	8.7	50.0	54	-4.0	AV

		V	11650.5	53.7	8.7	62.4	74	-11.6	PK
		V	16000.0	40.1	7.6	47.7	54(note3)	-6.3	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
Chain 2	149	V	5745.0	110.8	-8.2	102.6	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
		H	13000.0	34.8	9.8	44.6	54(note3)	-9.4	PK
		V	11489.0	54.3	8.5	62.8	74	-11.2	PK
		V	11489.0	43.0	8.5	51.5	54	-2.5	AV
		V	16000.0	41.0	7.6	48.6	54(note3)	-5.4	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	157	V	5785.0	109.5	-8.2	101.3	Fundamental	/	PK
		H	300	4.1	20.5	24.6	46	-21.4	QP
		H	900	2.6	29.2	31.8	46	-14.2	QP
		V	13000.0	39.2	9.8	49.0	54(note3)	-5.0	PK
		V	11565.5	55.2	8.6	63.8	74	-10.2	PK
		V	11570.0	43.0	8.6	51.6	54	-2.4	AV
		V	16000.0	40.7	7.6	48.3	54(note3)	-5.7	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	165	V	5825.0	109.5	-8.2	103.4	Fundamental	/	PK
		H	300	4.5	20.5	25.0	46	-21.0	QP
		H	900	1.7	29.2	30.9	46	-15.1	QP
		V	13000.0	34.7	9.8	44.5	54(note3)	-9.5	PK
		V	11650.0	42.8	8.7	51.5	54	-2.5	AV
		V	11659.0	54.8	8.7	63.5	74	-10.5	PK
		V	16000.0	40.6	7.6	48.2	54(note3)	-5.8	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	Factor (dB)	Measure Level	Limit (dBuV/m)	Margin (dB)	Detector

				(dBuV/m)		(dBuV/m)			
Chain 1	1	V	2412.1	69.1	30.8	99.9	Fundamental	/	PK
		H	597.9	14.1	21.2	35.3	46	-10.7	QP
		H	311.8	12.5	15.1	27.6	46	-18.4	QP
		V	3200.0	42.4	-0.6	41.8	54(note3)	-12.2	PK
		V	4824.0	42.3	2.6	44.9	54(note3)	-9.1	PK
		V	7236.0	33.6	8.9	42.5	54	-11.5	AV
		V	7239.0	46.2	8.9	55.1	74	-18.9	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	69.3	31.2	100.5	Fundamental	/	PK
		H	561.6	13.8	21.2	35.0	46	-11.0	QP
		H	343.3	13.2	16.0	29.2	46	-16.8	QP
		V	3200.0	42.5	-0.6	41.9	54(note3)	-12.1	PK
		V	4876.0	45.5	2.8	48.3	54(note3)	-5.7	PK
		V	7307.0	54.6	8.8	63.4	74	-10.6	PK
		V	7310.6	41.0	8.8	49.8	54	-4.2	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	11	V	2462.0	70.1	30.9	101.0	Fundamental	/	PK
		H	300.1	13.7	14.7	28.4	46	-17.6	QP
		H	553.8	13.5	21.2	34.7	46	-11.3	QP
		V	3200.0	43.2	-0.6	42.6	54(note3)	-11.4	PK
		V	4924.0	42.7	3.0	45.7	54(note3)	-8.3	PK
		V	7375.0	50.1	9.0	59.0	74	-15.0	PK
		V	7378.3	34.0	9.0	42.9	54	-11.1	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	149	V	5745.0	116.8	-8.2	98.6	Fundamental	/	PK
		H	313.7	13.3	15.1	28.4	46	-17.6	QP
		H	597.9	14.1	21.2	35.3	46	-10.7	QP
		H	13000.0	35.2	9.8	45.0	54(note3)	-9.0	PK
		V	11489.0	50.8	8.5	59.3	74	-14.7	PK
		V	11490.0	39.2	8.5	47.7	54	-6.3	AV
		V	16000.0	40.5	7.6	48.1	54(note3)	-5.9	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	157	V	5785.0	104.6	-8.2	96.4	Fundamental	/	PK
		H	300	4.2	20.5	24.7	46	-21.3	QP
		H	900	2.3	29.2	31.5	46	-14.5	QP

		V	13000.0	38.4	9.8	48.2	54(note3)	-5.8	PK
		V	11570.0	38.3	8.6	46.9	54	-7.1	AV
		V	11574.0	49.3	8.5	57.8	74	-16.2	PK
		V	16000.0	40.4	7.6	48.0	54(note3)	-6.0	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	165	V	5825.0	105.7	-8.2	97.5	Fundamental	/	PK
		H	300	4.6	20.5	25.1	46	-20.9	QP
		H	900	2.1	29.2	31.3	46	-14.7	QP
		H	13000.0	34.9	9.8	44.7	54(note3)	-9.3	PK
		V	11650.0	39.3	8.7	48.0	54	-6.0	AV
		V	11650.5	47.9	8.7	56.6	74	-17.4	PK
		V	16000.0	40.7	7.6	48.3	54(note3)	-5.7	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
Chain 2	1	V	2412.7	54.1	30.8	84.9	Fundamental	/	PK
		V	313.7	13.3	15.1	28.4	46	-17.6	QP
		V	597.9	14.1	21.2	35.3	46	-10.7	QP
		V	3200.0	42.3	-0.6	41.7	54(note3)	-12.3	PK
		V	4824.0	43.2	2.6	45.8	54(note3)	-8.2	PK
		V	7236.0	42.8	8.9	51.7	54(note3)	-2.3	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	58.5	31.2	89.7	Fundamental	/	PK
		H	306.0	13.4	14.9	28.3	46	-17.7	QP
		H	561.6	13.8	21.2	35.0	46	-11.0	QP
		V	3200.0	42.3	-0.6	41.7	54(note3)	-12.3	PK
		V	4867.5	47.2	2.7	49.9	54(note3)	-4.1	PK
		V	7307.0	50.6	8.8	59.4	74	-14.6	PK
		V	7308.0	37.4	8.8	46.2	54	-7.8	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	11	V	2461.8	63.6	30.9	94.5	Fundamental	/	PK
		H	321.0	14.2	15.3	29.5	46	-16.5	QP
		H	551.9	13.4	21.2	34.6	46	-11.4	QP
		V	3200.0	42.4	-0.6	41.8	54(note3)	-12.2	PK
		V	4927.0	47.2	3.0	50.2	74	-3.8	PK
		V	7383.0	32.0	8.9	40.9	54	-13.1	AV
		V	7383.5	45.4	8.9	54.3	74	-19.7	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	149	V	5745.0	111.6	-8.2	103.4	Fundamental	/	PK

		H	256.01	6.3	19.7	26.0	46	-20.0	QP
		H	299.7	8.4	20.5	28.9	46	-17.1	QP
		H	13000.0	34.7	9.8	44.5	54(note3)	-9.5	PK
		V	11489.0	47.9	8.5	56.4	74	-17.6	PK
		V	11560.0	39.3	8.6	47.9	54	-6.1	AV
		V	16000.0	40.9	7.6	48.5	54(note3)	-5.5	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	157	V	5785.0	111.3	-8.2	103.1	Fundamental	/	PK
		H	207.1	6.2	15.9	22.1	43.5	-21.4	QP
		H	299.6	8.9	20.5	29.4	46	-16.6	QP
		H	13000.0	39.1	9.8	48.9	54(note3)	-5.1	PK
		V	11565.5	52.1	8.6	60.7	74	-13.3	PK
		V	11570.0	40.4	8.6	49.0	54	-5.0	AV
		V	16000.0	40.9	7.6	48.5	54(note3)	-5.5	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	165	V	5825.0	111.9	-8.2	103.7	Fundamental	/	PK
		H	303.1	11.1	20.6	31.7	46	-14.3	QP
		H	565.3	5.4	26.6	32.0	46	-14.0	QP
		V	13000.0	34.9	9.8	44.7	54(note3)	-9.3	PK
		V	11650.0	38.3	8.7	47.0	54	-7.0	AV
		V	11650.5	46.5	8.7	55.2	74	-18.8	PK
		V	16000.0	40.5	7.6	48.1	54(note3)	-5.9	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
Chain 1+2	1	V	2412.5	71.5	30.8	102.3	Fundamental	/	PK
		H	539.3	14.2	20.9	35.1	46	-10.9	QP
		H	297.2	13.2	14.7	27.9	46	-18.1	QP
		V	3200.0	42.2	-0.6	41.6	54(note3)	-12.4	PK
		V	4824.0	42.8	2.6	45.4	54(note3)	-8.6	PK
		V	7236.0	44.5	8.9	53.4	54	-0.6	AV
		V	7239.0	47.6	8.9	56.5	74	-17.5	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	72.0	31.2	103.2	Fundamental	/	PK
		H	301.1	13.8	14.7	28.5	46	-17.5	QP
		H	539.3	14.2	20.9	35.1	46	-10.9	QP
		V	3200	51.9	-13.4	38.5	54(note3)	-15.5	PK
		V	4867.5	47.6	2.7	50.3	54(note3)	-3.7	PK
		V	7307.0	55.8	8.8	64.6	74	-9.4	PK

		V	7307.6	43.8	8.8	52.6	54	-1.4	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	11	V	2461.5	73.2	30.9	104.1	Fundamental	/	PK
		H	280.3	14.1	14.5	28.6	46	-17.4	QP
		H	500.0	17.0	19.7	36.7	46	-9.3	QP
		V	3200.0	42.3	-0.6	41.7	54(note3)	-12.3	PK
		V	4918.5	44.5	3.0	47.5	54(note3)	-6.5	PK
		V	7391.6	33.9	8.9	42.8	54	-11.2	AV
		V	7400.5	49.0	8.9	57.9	74	-16.1	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	149	V	5745.0	109.5	-8.2	101.3	Fundamental	/	PK
		H	301.1	11.5	20.5	32.0	46	-14.0	QP
		H	565.319	5.4	26.6	32.0	46	-14.0	QP
		H	13000.0	35.1	9.8	44.9	54(note3)	-9.1	PK
		V	11489.0	53.5	8.5	62.0	74	-12.0	PK
		V	11490.0	39.7	8.5	48.2	54	-5.8	AV
		V	16000.0	40.5	7.6	48.1	54(note3)	-5.9	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	157	V	5785.0	112.7	-8.2	104.5	Fundamental	/	PK
		H	201.4	7.3	16.1	23.4	43.5	-20.1	QP
		H	299.6	8.9	20.5	29.4	46	-16.6	QP
		V	13000.0	38.9	9.8	48.7	54(note3)	-5.3	PK
		V	11570.0	40.6	8.6	49.2	54	-4.8	AV
		V	11574.0	51.0	8.5	59.5	74	-14.5	PK
		V	16000.0	41.6	7.6	49.2	54(note3)	-4.8	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	165	V	5825.0	110.9	-8.2	102.7	Fundamental	/	PK
		H	544.3	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	34.7	9.8	44.5	54(note3)	-9.5	PK
		V	11570.0	41.3	8.6	49.9	54	-4.1	AV
		V	11659.0	50.9	8.7	59.6	74	-14.4	PK
		V	16000.0	40.5	7.6	48.1	54(note3)	-5.9	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 1	3	V	2423.6	65.2	30.8	96.0	Fundamental	/	PK
		H	341.9	14.2	16.0	30.2	46	-15.8	QP
		H	564.0	14.5	21.2	35.7	46	-10.3	QP
		V	3200.0	42.5	-0.6	41.9	54(note3)	-12.1	PK
		V	4844.0	41.5	2.6	44.2	54(note3)	-9.8	PK
		V	7290.0	44.5	8.8	53.3	54(note3)	-0.7	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	64.6	31.2	95.8	Fundamental	/	PK
		H	291.9	12.9	14.8	27.7	46	-18.3	QP
		H	553.3	13.6	21.2	34.8	46	-11.2	QP
		V	3200.0	42.1	-0.6	41.5	54(note3)	-12.5	PK
		V	4874.0	41.6	2.8	44.4	54(note3)	-9.6	PK
		V	7349.2	32.0	9.0	40.9	54	-13.1	AV
		V	7358.0	46.6	9.0	55.6	74	-18.4	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	9	V	2453.6	64.7	30.9	95.6	Fundamental	/	PK
		H	586.3	14.1	21.2	35.3	46	-10.7	QP
		H	294.3	13.4	14.8	28.2	46	-17.8	QP
		V	3200.0	42.6	-0.6	42.0	54(note3)	-12.0	PK
		V	4904.0	41.9	2.9	44.8	54(note3)	-9.2	PK
		V	7349.4	32.2	9.0	41.2	54	-12.8	AV
		V	7349.5	45.6	9.0	54.5	74	-19.5	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	151	V	5755.0	107.9	-8.2	99.7	Fundamental	/	PK
		H	303.1	11.1	20.6	31.7	46	-14.3	QP
		H	565.3	5.4	26.6	32.0	46	-14.0	QP
		H	13000.0	34.5	9.8	44.3	54(note3)	-9.7	PK
		V	11510.0	39.2	8.5	47.7	54	-6.3	AV
		V	11523.0	49.8	8.5	58.3	74	-15.7	PK
		V	16000.0	40.5	7.6	48.1	54(note3)	-5.9	PK

		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	159	V	5795.0	108.2	-8.2	98.6	Fundamental	/	PK
		H	298.5	11.1	20.4	31.5	46	-14.5	QP
		H	606.18	6.0	27.0	33.0	46	-13.0	QP
		V	13000.0	34.7	9.8	44.5	54(note3)	-9.5	PK
		V	11574.0	48.6	8.5	57.1	74	-16.9	PK
		V	11590.0	39.3	8.5	47.8	54	-6.2	AV
		V	16000.0	40.9	7.6	48.5	54(note3)	-5.5	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
Chain 2	3	V	2420.0	60.2	30.8	91.0	Fundamental	/	PK
		H	301.1	11.5	20.5	32.0	46	-14.0	QP
		H	565.319	5.4	26.6	32.0	46	-14.0	QP
		V	3200.0	42.7	-0.6	42.1	54(note3)	-11.9	PK
		V	4844.0	42.3	2.6	44.9	54(note3)	-9.1	PK
		V	7266.0	42.5	8.8	51.3	54(note3)	-2.7	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	59.8	31.2	91.0	Fundamental	/	PK
		H	309.4	12.8	15.0	27.8	46	-18.2	QP
		H	608.6	14.5	21.2	35.7	46	-10.3	QP
		V	3200.0	42.8	-0.6	42.2	54(note3)	-11.8	PK
		V	4874.0	41.1	2.8	43.9	54(note3)	-10.1	PK
		V	7311.0	40.5	8.8	49.3	54(note3)	-4.7	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	9	V	2453.3	60.2	30.9	91.1	Fundamental	/	PK
		H	500.0	17.0	19.7	36.7	46	-9.3	QP
		H	266.2	13.7	14.3	28.0	46	-18.0	QP
		V	3200.0	42.9	-0.6	42.3	54(note3)	-11.7	PK
		V	4904.0	43.7	2.9	46.6	54(note3)	-7.4	PK
		V	7356.0	43.0	9.0	52.0	54(note3)	-2.0	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	151	V	5755.0	103.7	-8.2	95.5	Fundamental	/	PK
		V	599.8	4.9	13.7	18.6	46	-27.4	QP
		V	697.3	1.9	14.3	16.2	46	-29.8	QP
		V	13000.0	35.2	9.8	45.0	54(note3)	-9.0	PK
		v	11510.0	47.8	8.5	56.3	74	-17.7	PK
		v	11510.0	38.3	8.5	46.8	54	-7.2	AV
		v	16000.0	41.2	7.6	48.8	54(note3)	-5.2	PK

		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	159	V	5795.0	103.9	-8.2	95.7	Fundamental	/	PK
		H	553.3	6.0	11.9	17.9	46	-28.1	QP
		H	697.3	4.0	14.3	18.3	46	-27.7	QP
		V	13000.0	35.0	9.8	44.8	54(note3)	-9.2	PK
		v	11582.5	47.9	8.5	56.4	74	-17.6	PK
		v	11590.0	38.7	8.5	47.2	54	-6.8	AV
		v	16000.0	40.2	7.6	47.8	54(note3)	-6.2	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
Chain 1+2	3	V	2420.3	70.1	30.8	100.9	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	3200.0	42.4	-0.6	41.8	54(note3)	-12.2	PK
		V	4844.0	42.2	2.6	44.8	54(note3)	-9.2	PK
		V	7264.5	39.5	8.8	48.3	54	-5.7	AV
		V	7273.0	51.7	8.8	60.5	74	-13.5	PK
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	6	V	2437.0	69.7	31.2	100.9	Fundamental	/	PK
		H	280.3	14.1	14.5	28.6	46	-17.4	QP
		H	500.0	17.0	19.7	36.7	46	-9.3	QP
		V	3200.0	42.2	-0.6	41.6	54(note3)	-12.4	PK
		V	4876.0	46.1	2.8	48.9	54(note3)	-5.1	PK
		V	7290.0	50.3	8.8	59.1	74	-14.9	PK
		V	7290.0	38.6	8.8	47.4	54	-6.6	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	9	V	2449.6	70.1	30.9	101.0	Fundamental	/	PK
		H	324.4	13.8	15.5	29.3	46	-16.7	QP
		H	553.8	13.3	21.2	34.5	46	-11.5	QP
		V	3200.0	42.9	-0.6	42.3	54(note3)	-11.7	PK
		V	4904.0	43.8	2.9	46.7	54(note3)	-7.3	PK
		V	7358.0	47.8	9.0	56.8	74	-17.2	PK
		V	7358.8	35.9	9.0	44.9	54	-9.1	AV
		H	24000.0	59.1	-8.9	50.2	54(note3)	-3.8	PK
	151	V	5755.0	108.7	-8.2	100.5	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	35.4	9.8	45.2	54(note3)	-8.8	PK

		V	11510.0	41.4	8.5	49.9	54	-4.1	AV
		V	11514.5	52.9	8.5	61.4	74	-12.6	PK
		V	16000.0	41.0	7.6	48.6	54(note3)	-5.4	PK
		H	24000.0	59.6	-8.9	50.7	54(note3)	-3.3	PK
	159	V	5795.0	109.0	-8.2	100.8	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
		H	13000.0	34.8	9.8	44.6	54(note3)	-9.4	PK
		V	11590.0	39.3	8.5	47.8	54	-6.2	AV
		V	11591.0	51.5	8.5	60.0	74	-14.0	PK
		V	16000.0	40.7	7.6	48.3	54(note3)	-5.7	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. RF Antenna Conducted Spurious

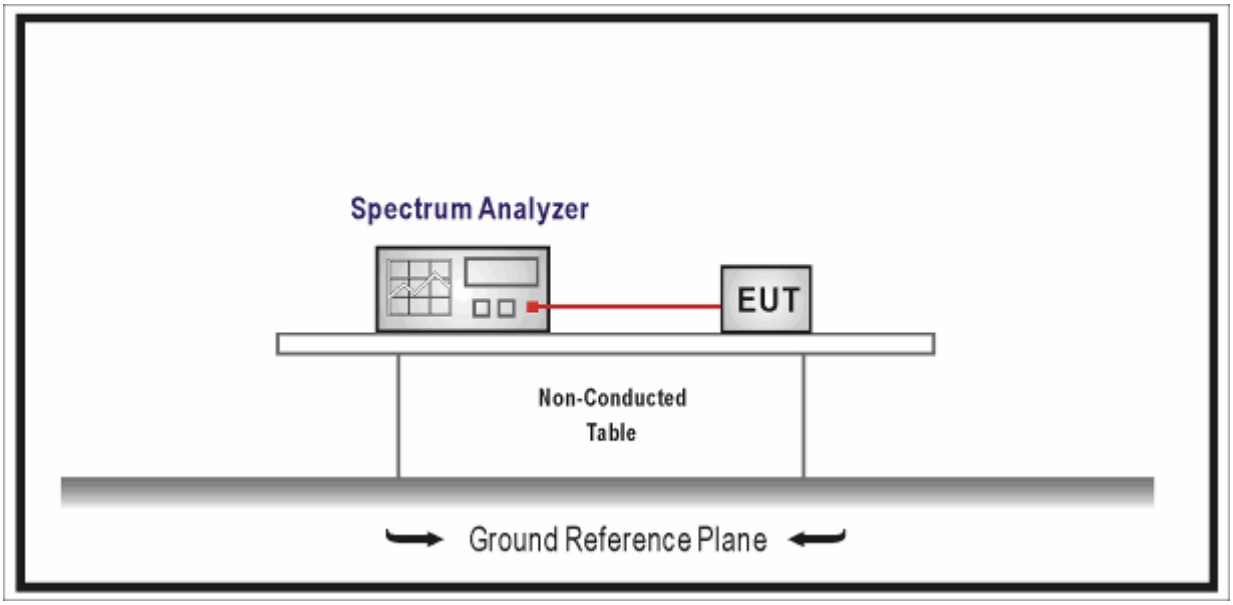
5.1. Test Equipment

RF Antenna Conducted Spurious / 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.

5.2. Test Setup



5.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

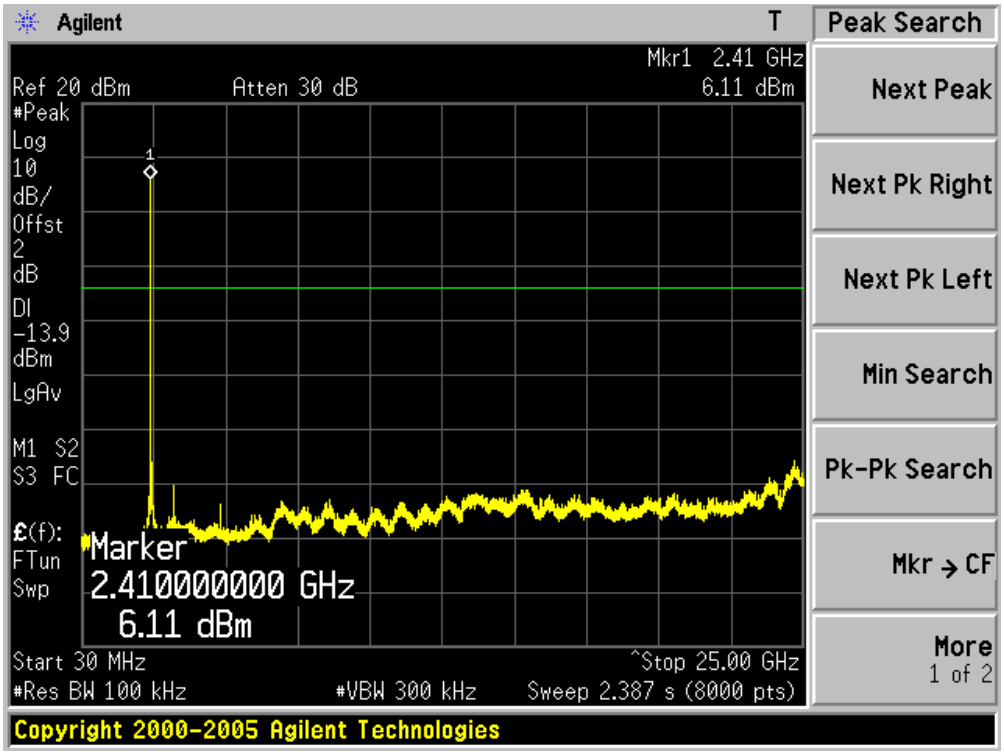
5.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

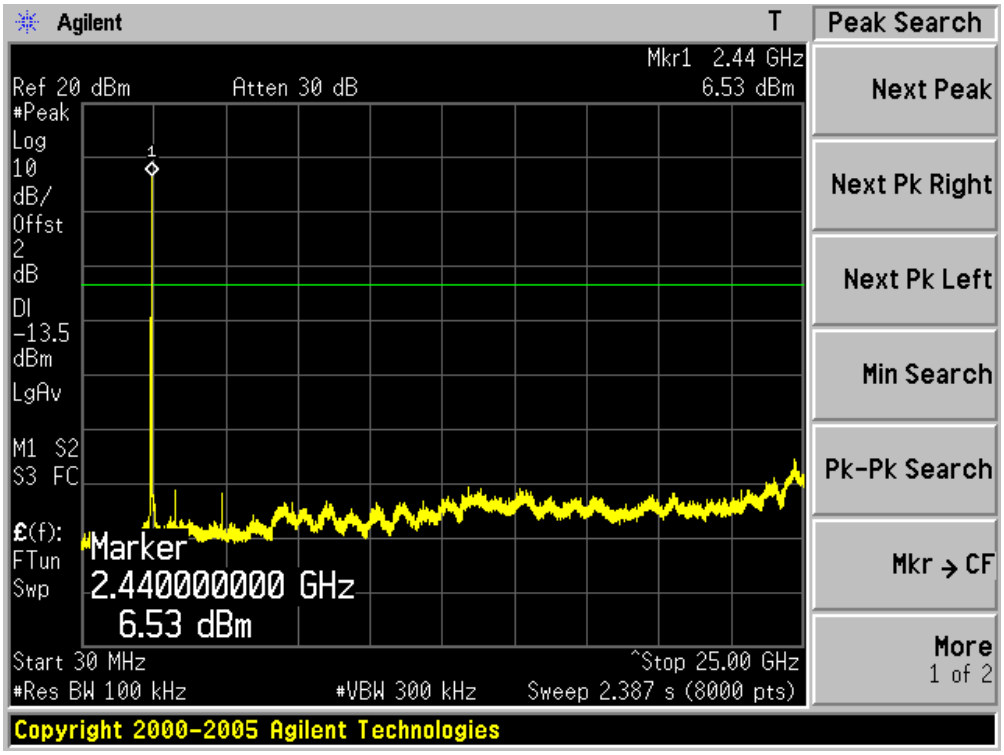
5.6. Test Result

Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

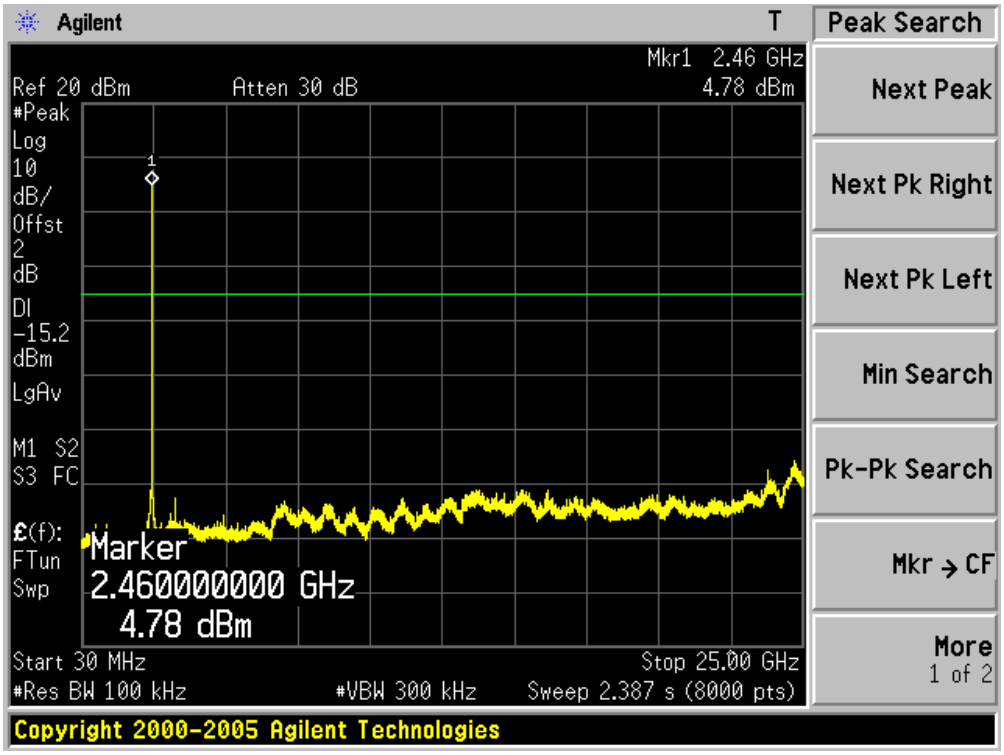
Channel 01 (2412MHz)



Channel 06 (2437MHz)

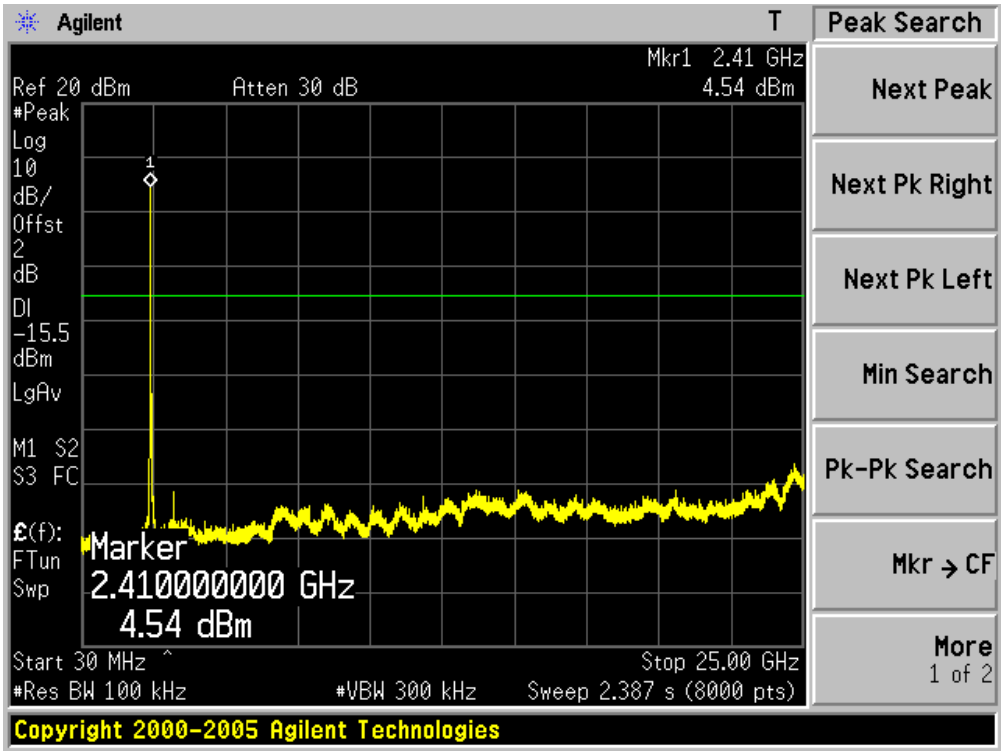


Channel 11 (2462MHz)

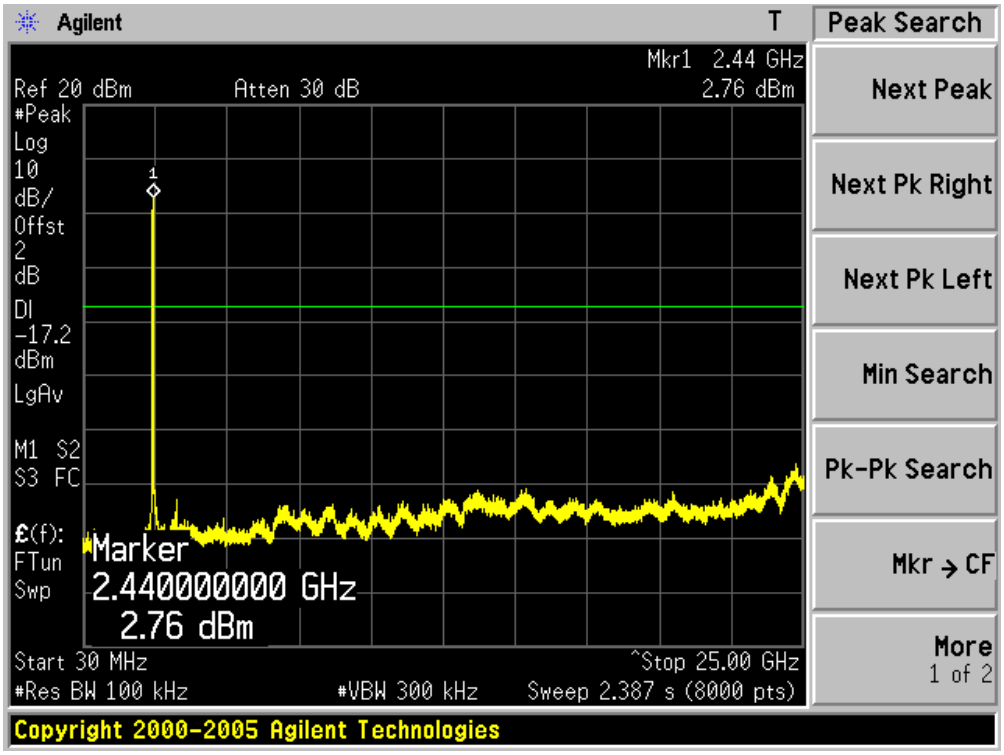


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

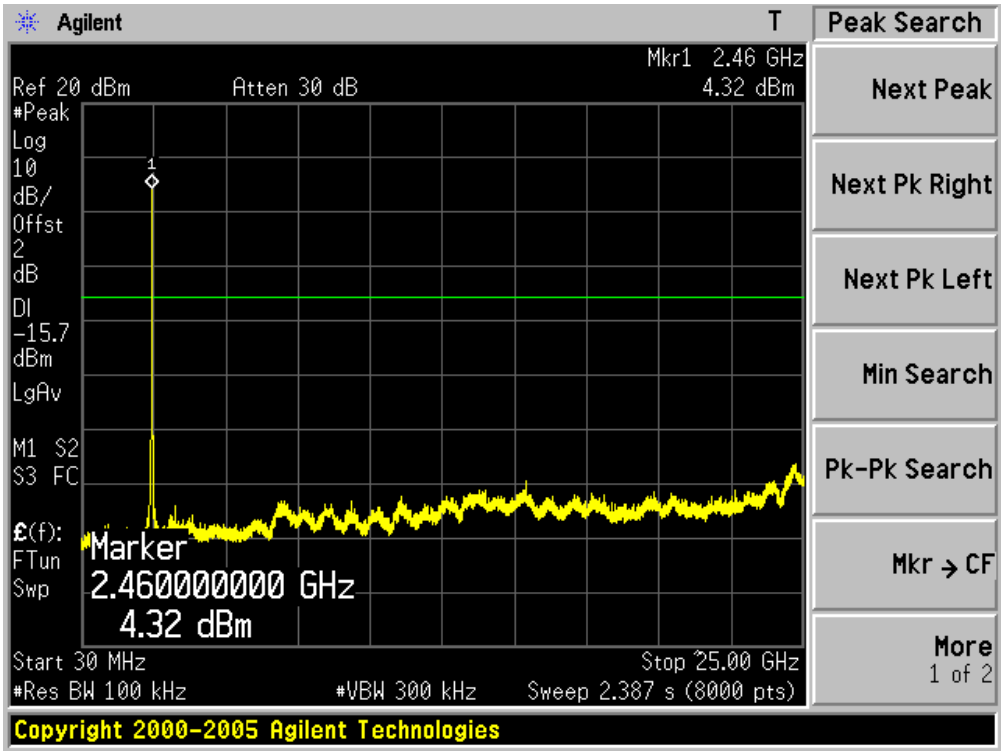
Channel 01 (2412MHz)



Channel 06 (2437MHz)

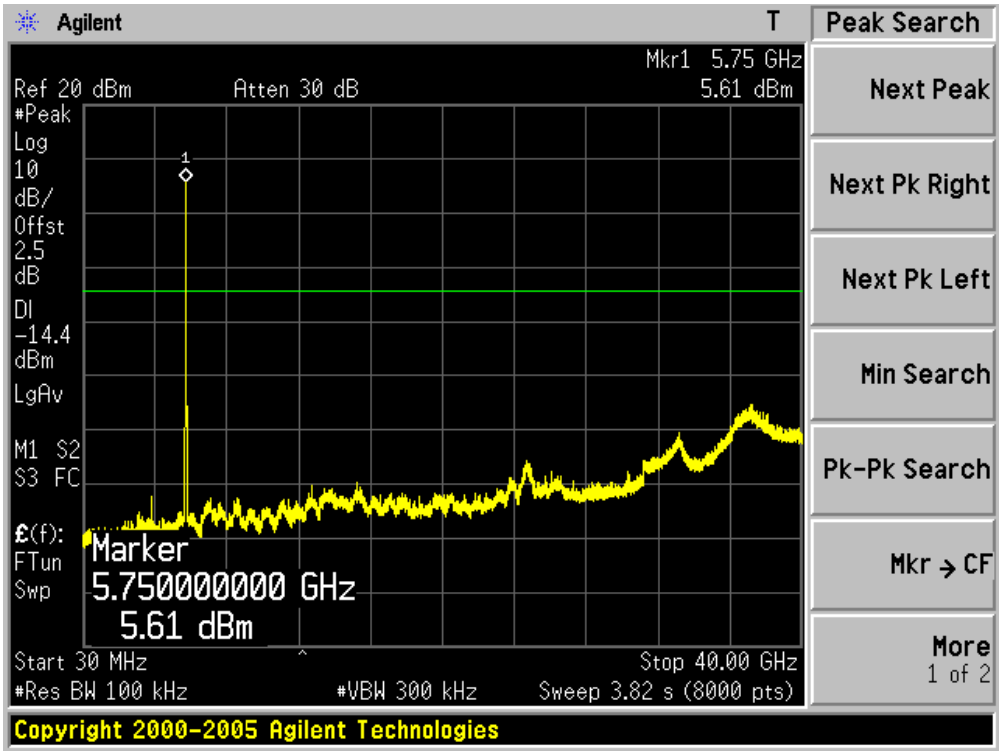


Channel 11 (2462MHz)

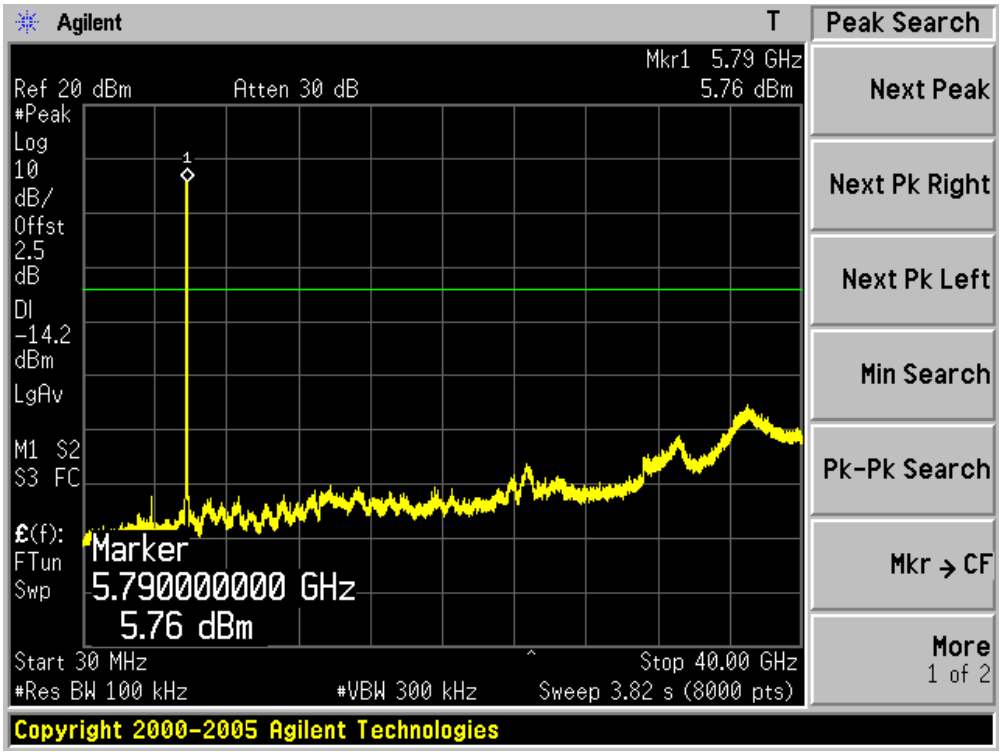


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

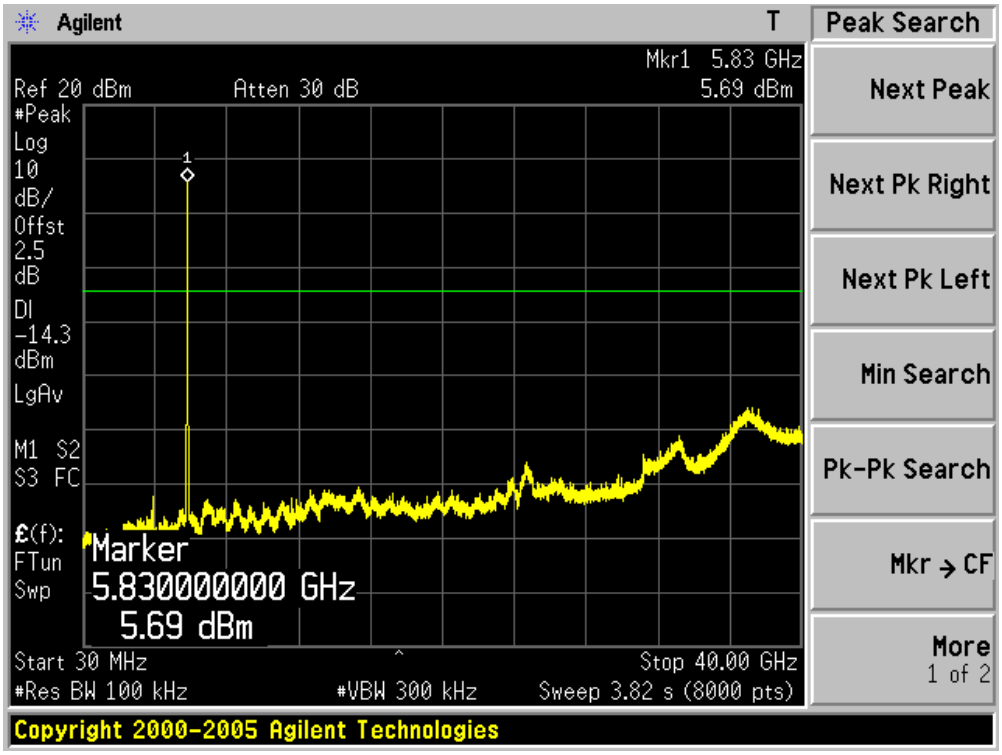
Channel 149 (5745MHz)



Channel 157 (5785MHz)

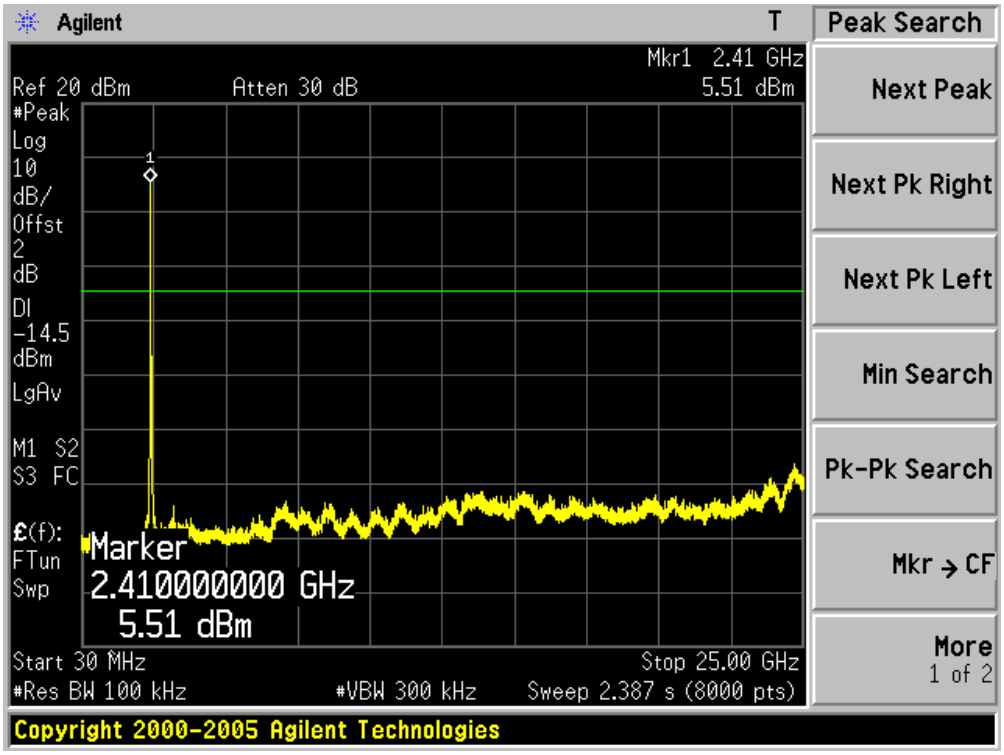


Channel 165 (5825MHz)

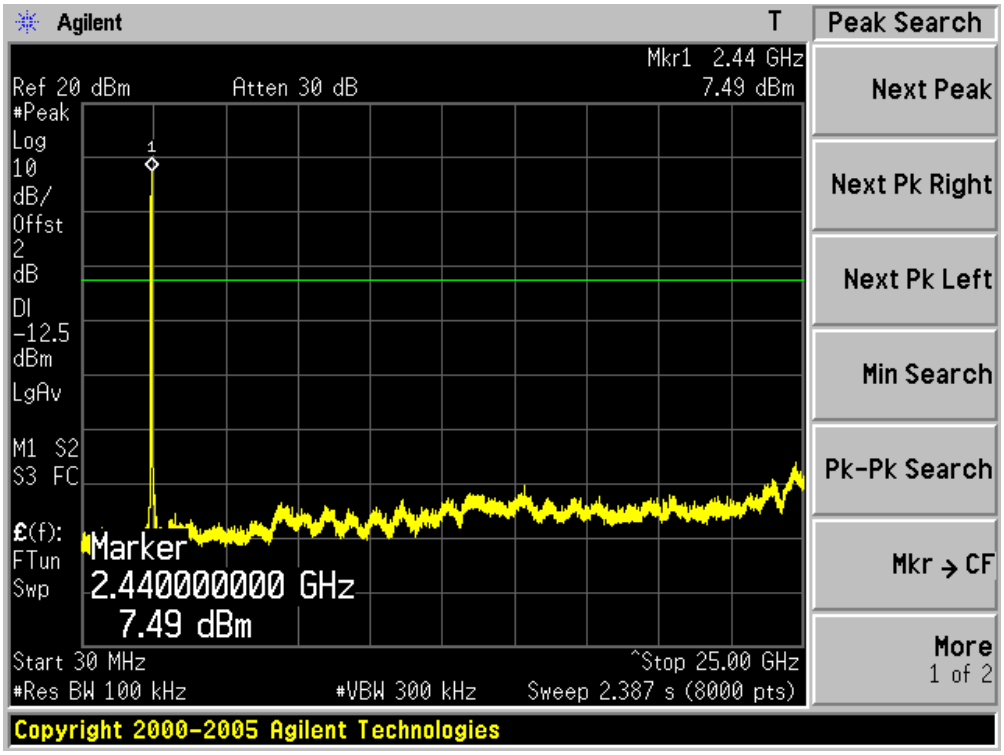


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz)(Chain 1)

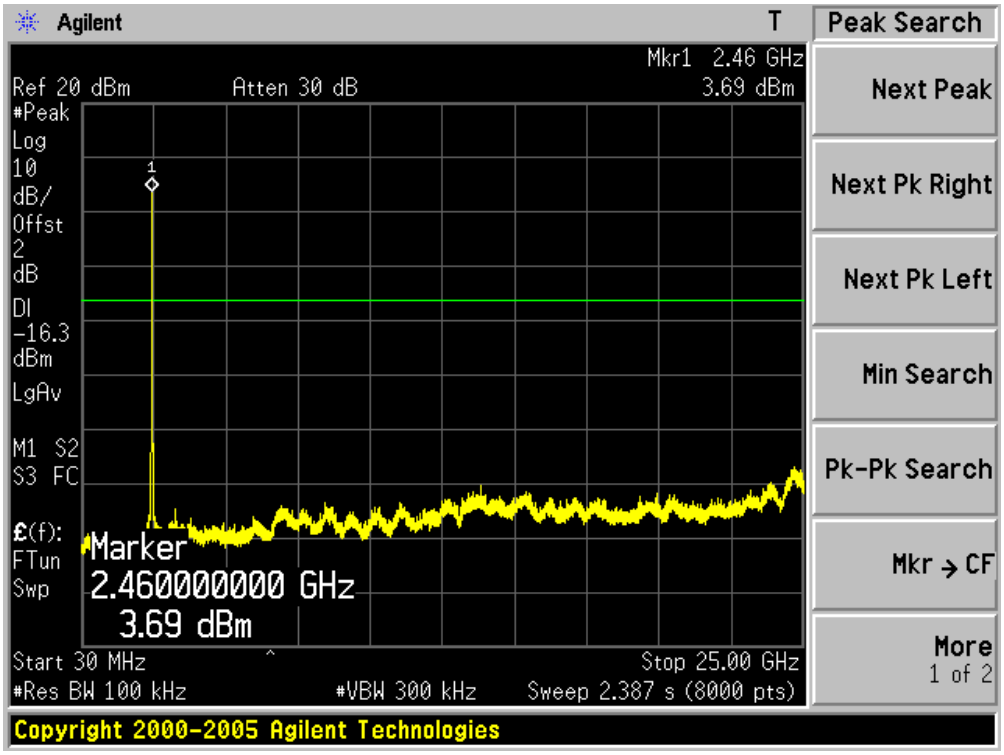
Channel 01 (2412MHz)



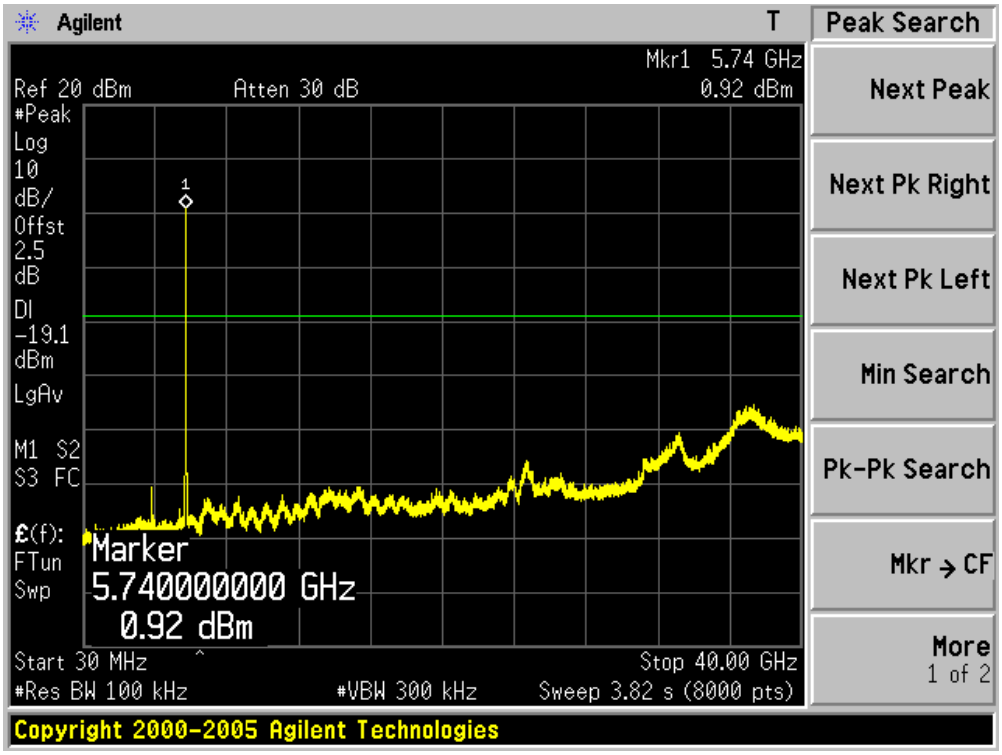
Channel 06 (2437MHz)



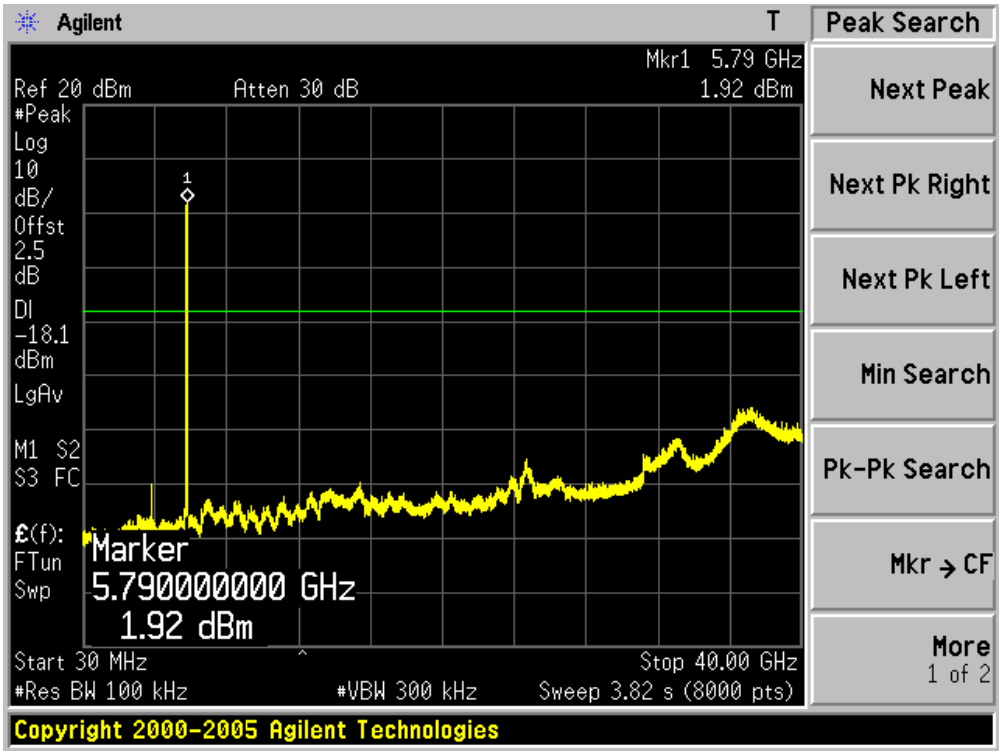
Channel 11 (2462MHz)



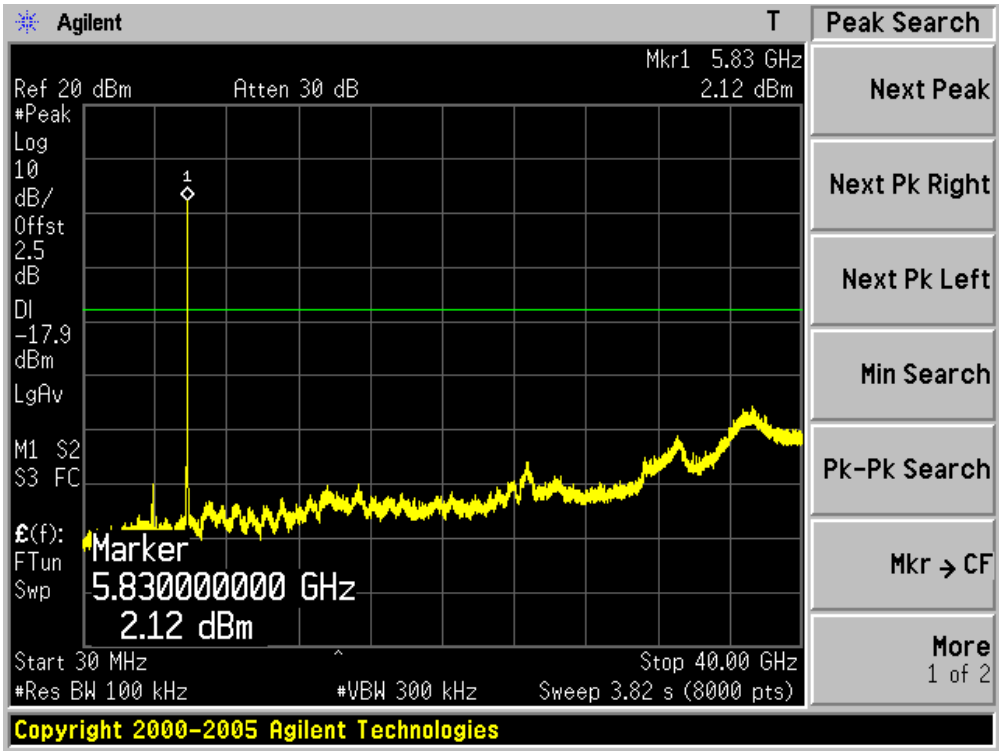
Channel 149 (5745MHz)



Channel 157 (5785MHz)

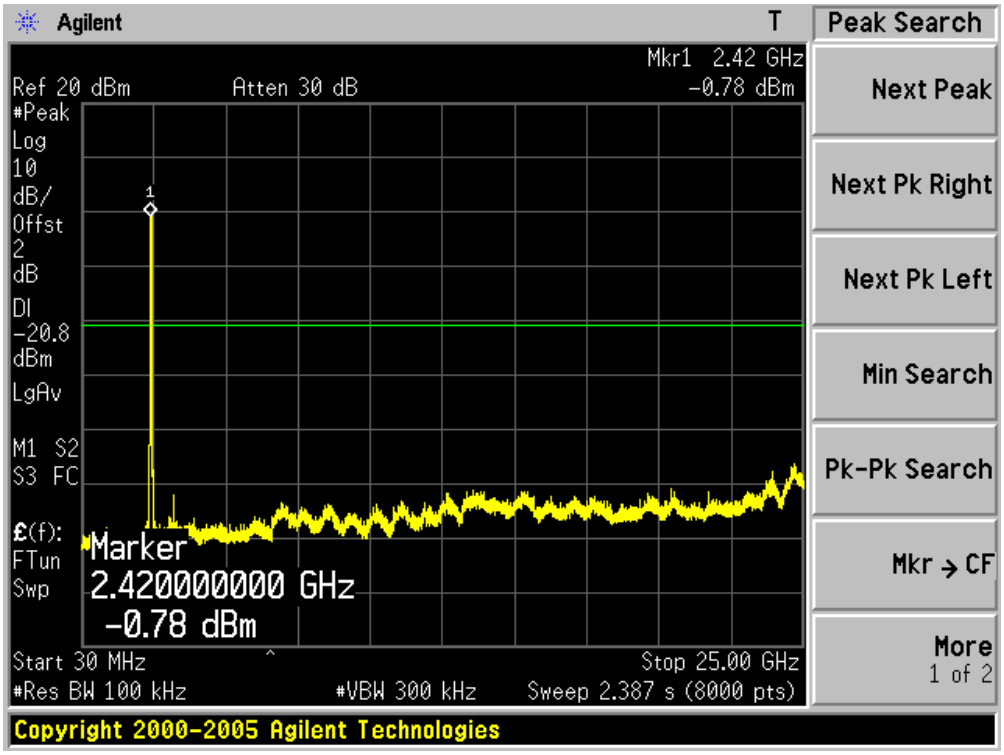


Channel 165 (5825MHz)

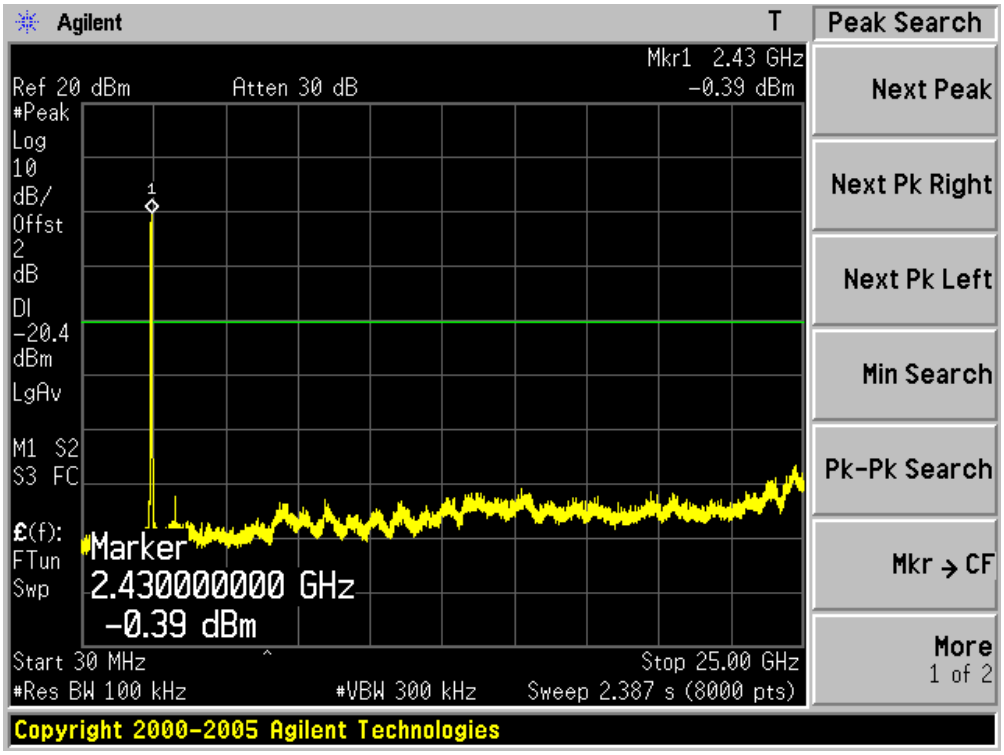


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 1)

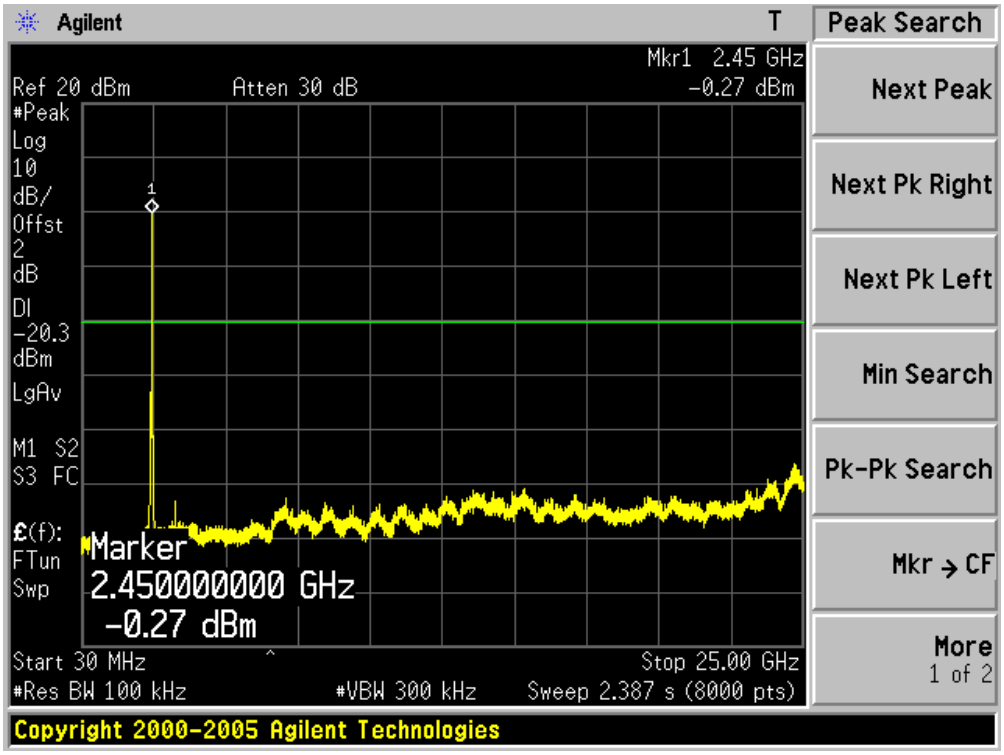
Channel 03 (2422MHz)



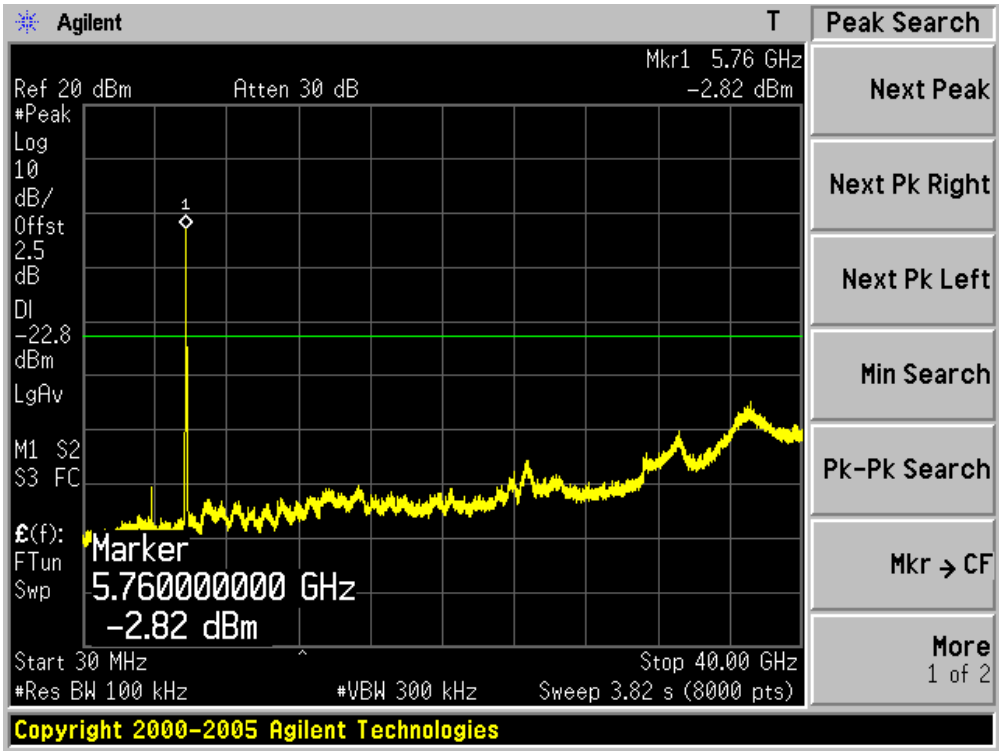
Channel 06 (2437MHz)



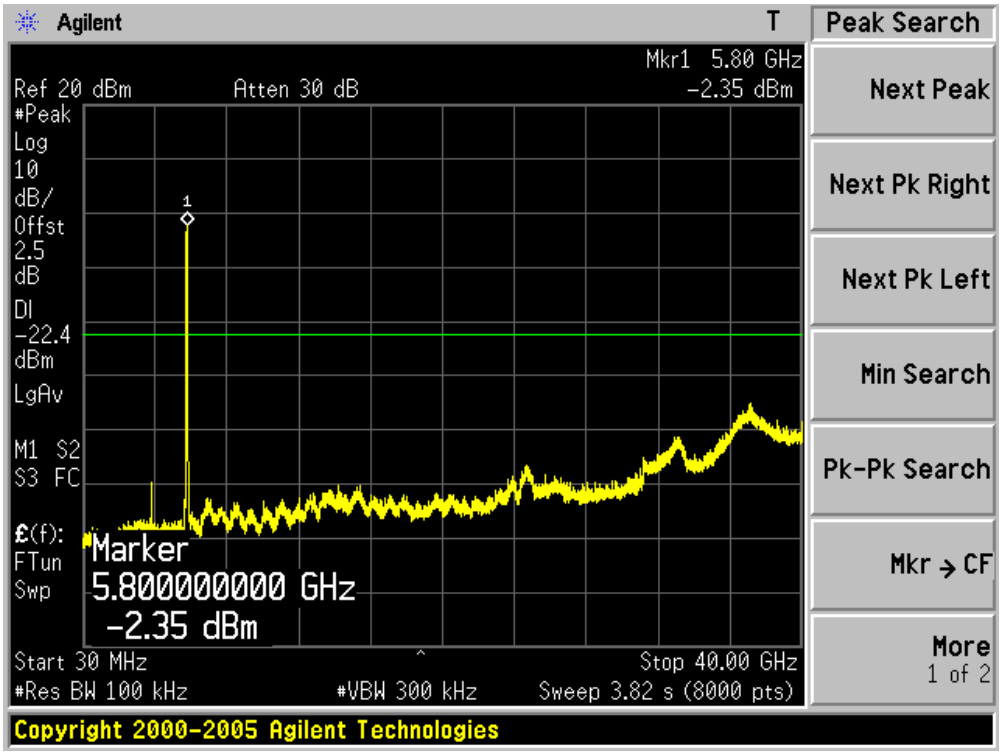
Channel 09 (2452MHz)



Channel 151 (5755MHz)

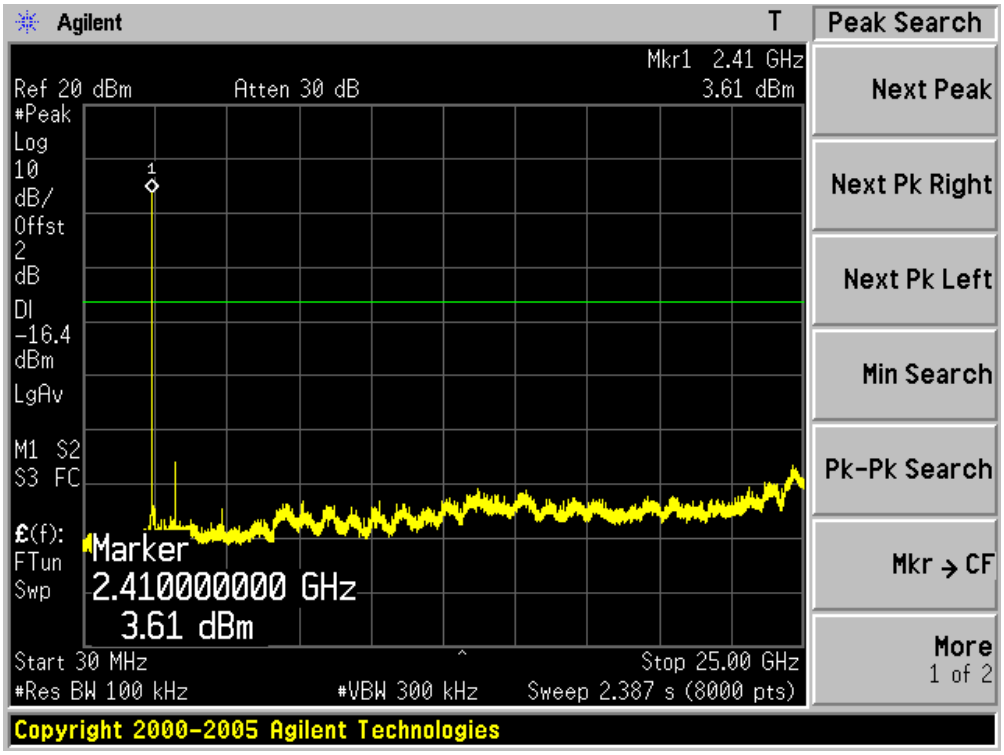


Channel 159 (5795MHz)

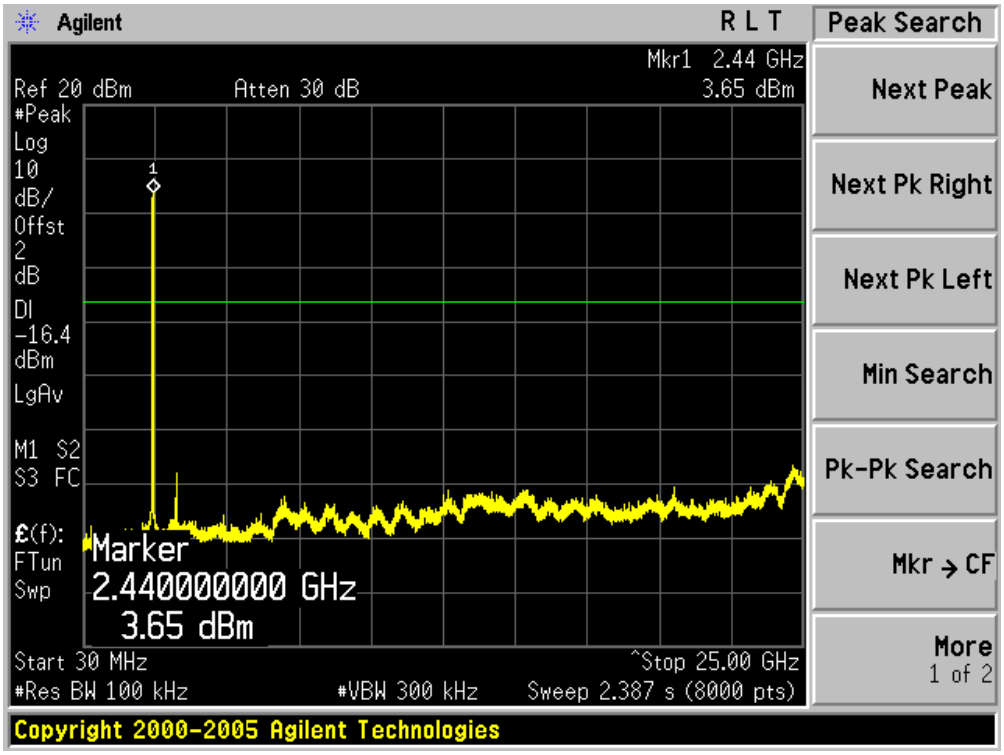


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 2)

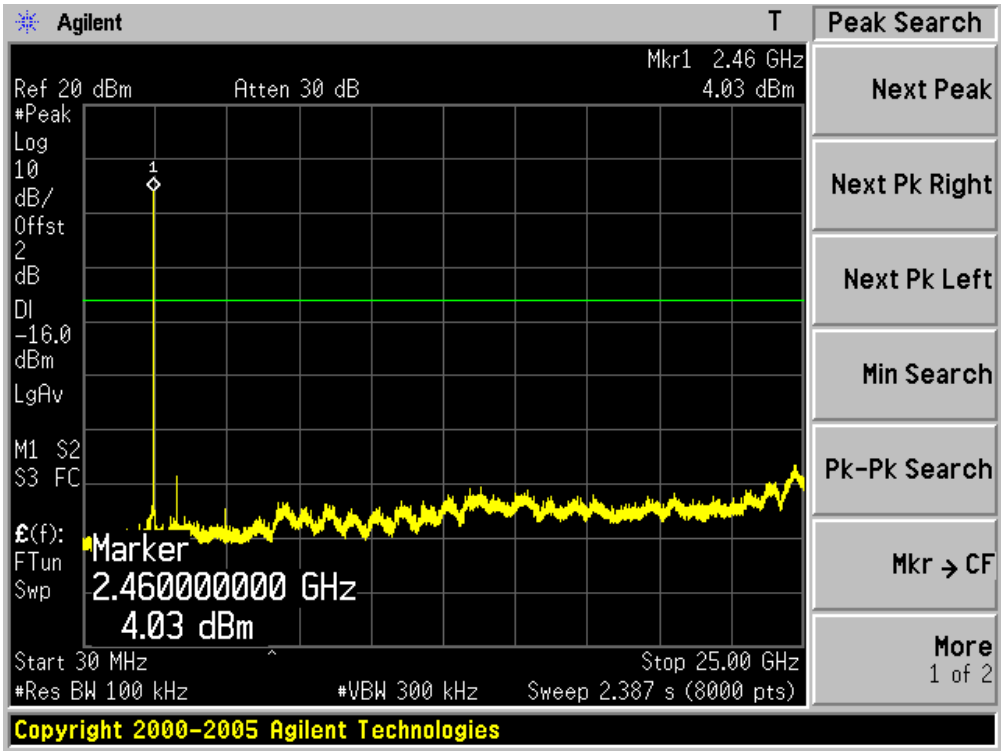
Channel 01 (2412MHz)



Channel 06 (2437MHz)

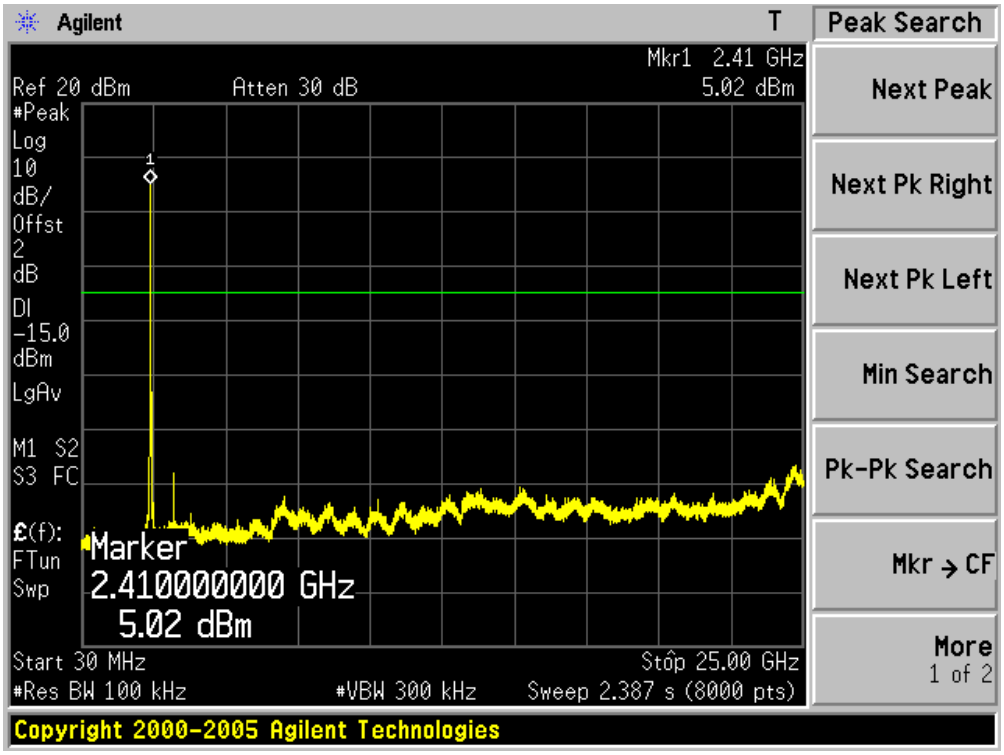


Channel 11 (2462MHz)

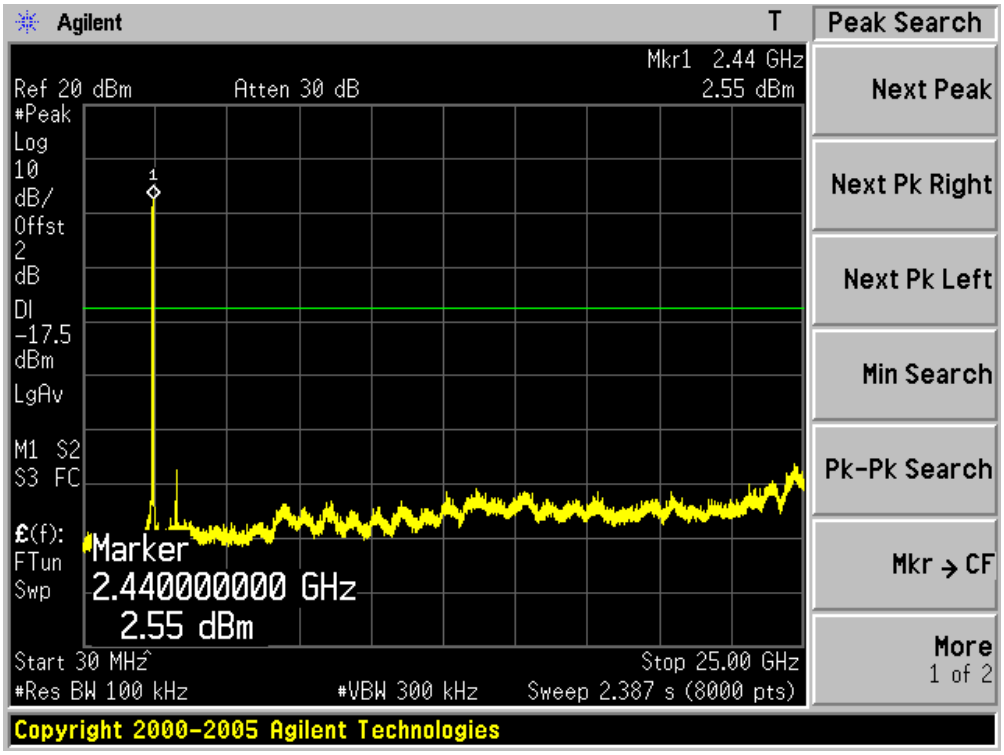


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 2)

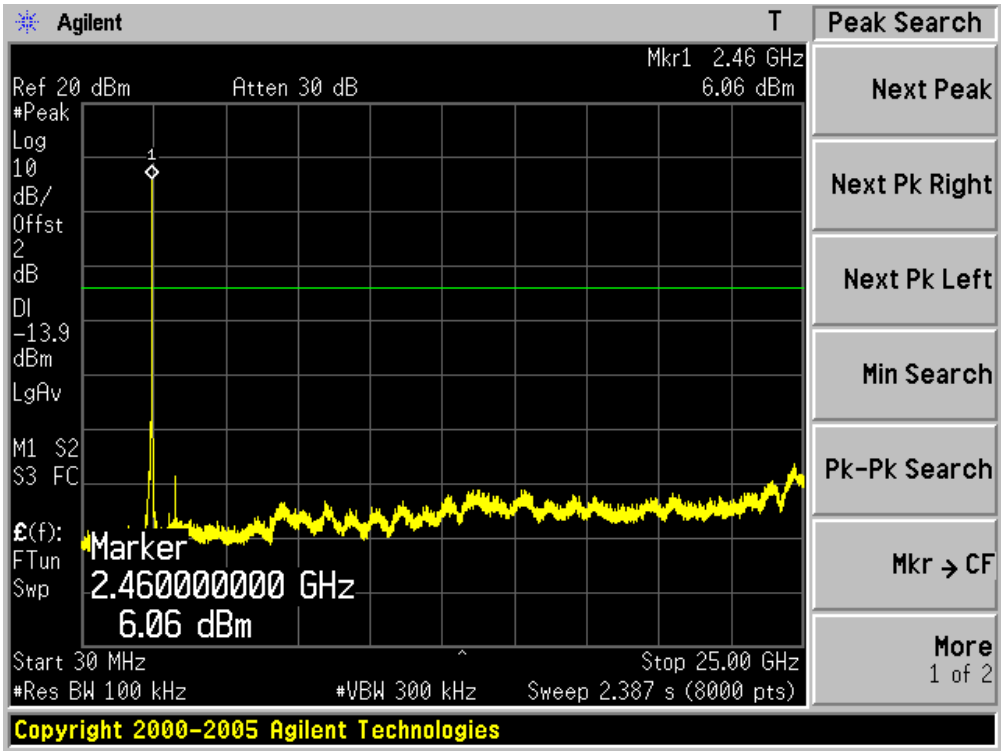
Channel 01 (2412MHz)



Channel 06 (2437MHz)

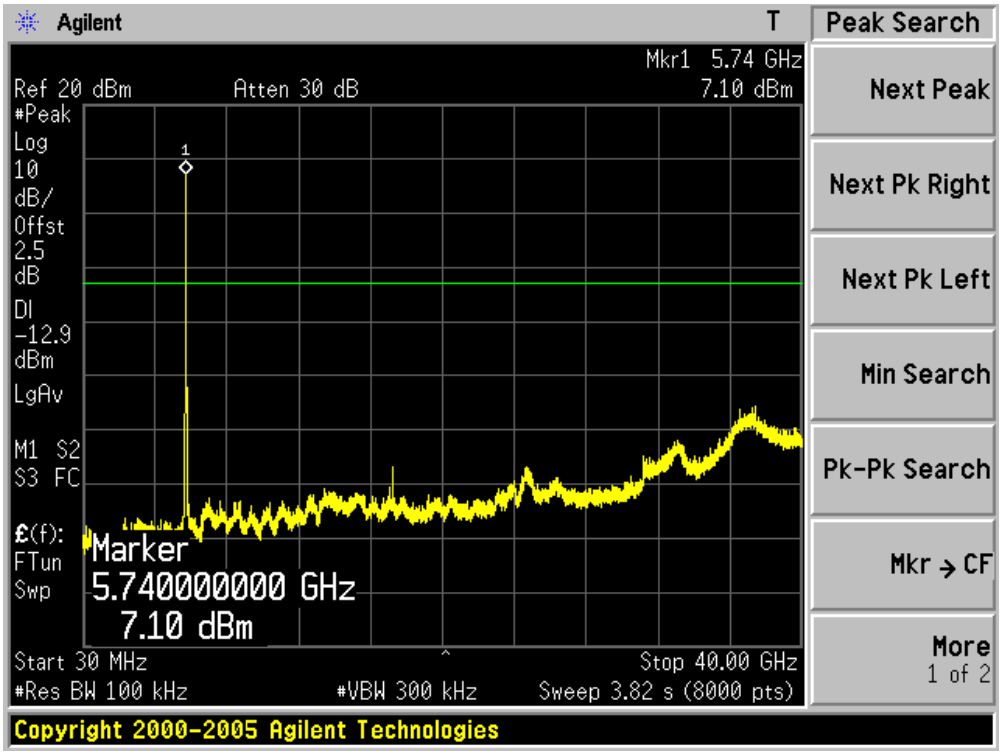


Channel 11 (2462MHz)

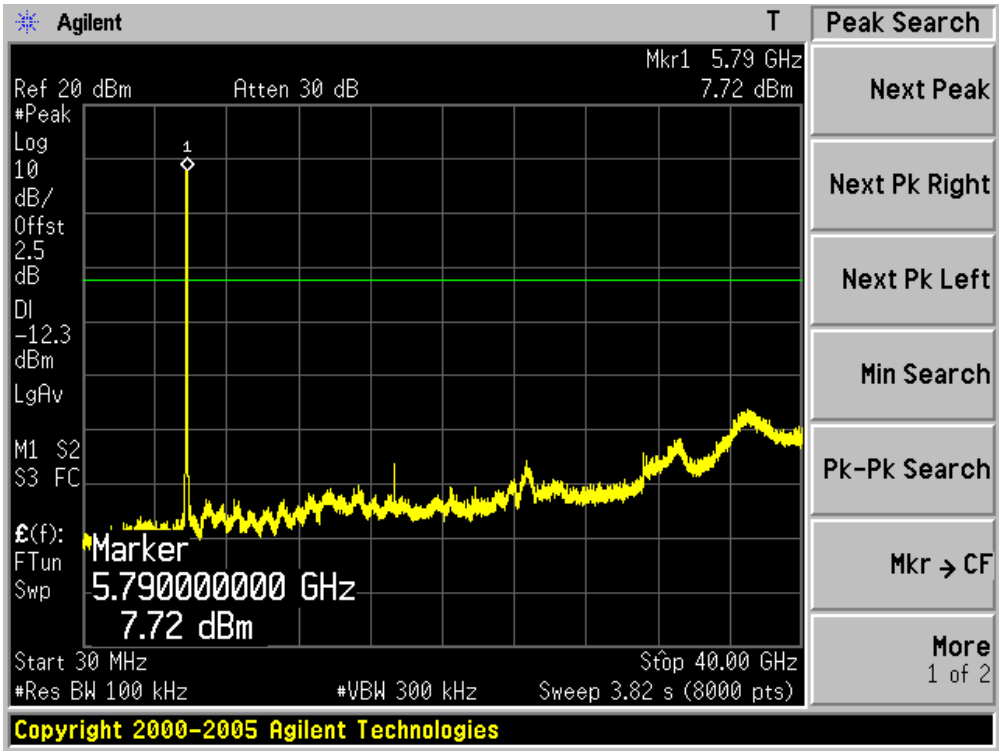


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 2)

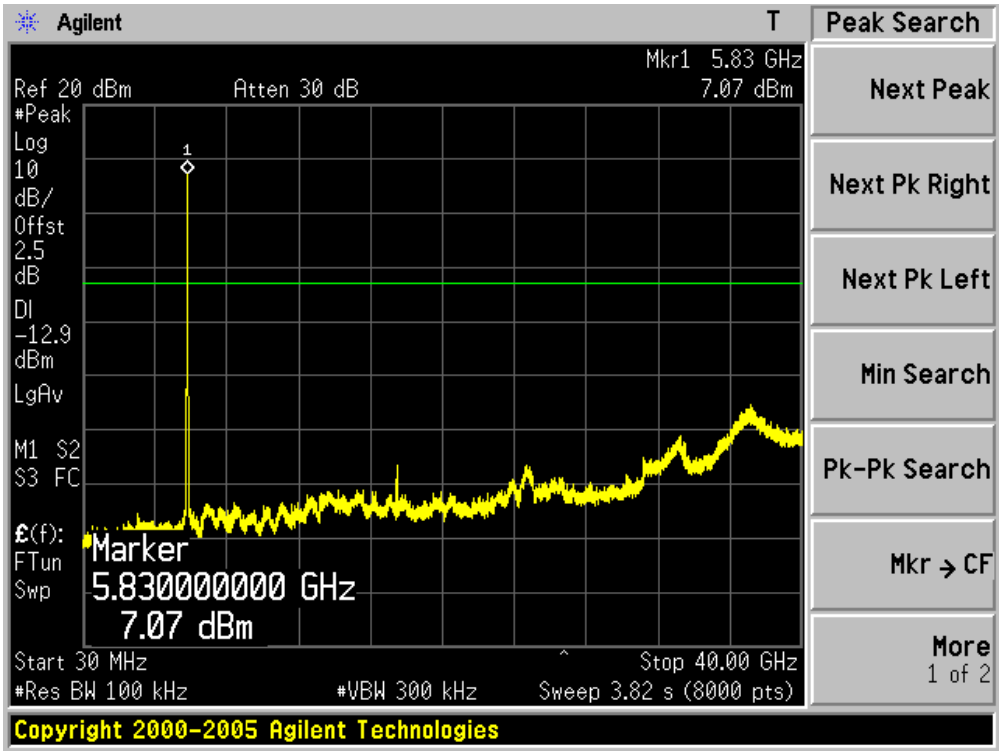
Channel 149 (5745MHz)



Channel 157 (5785MHz)

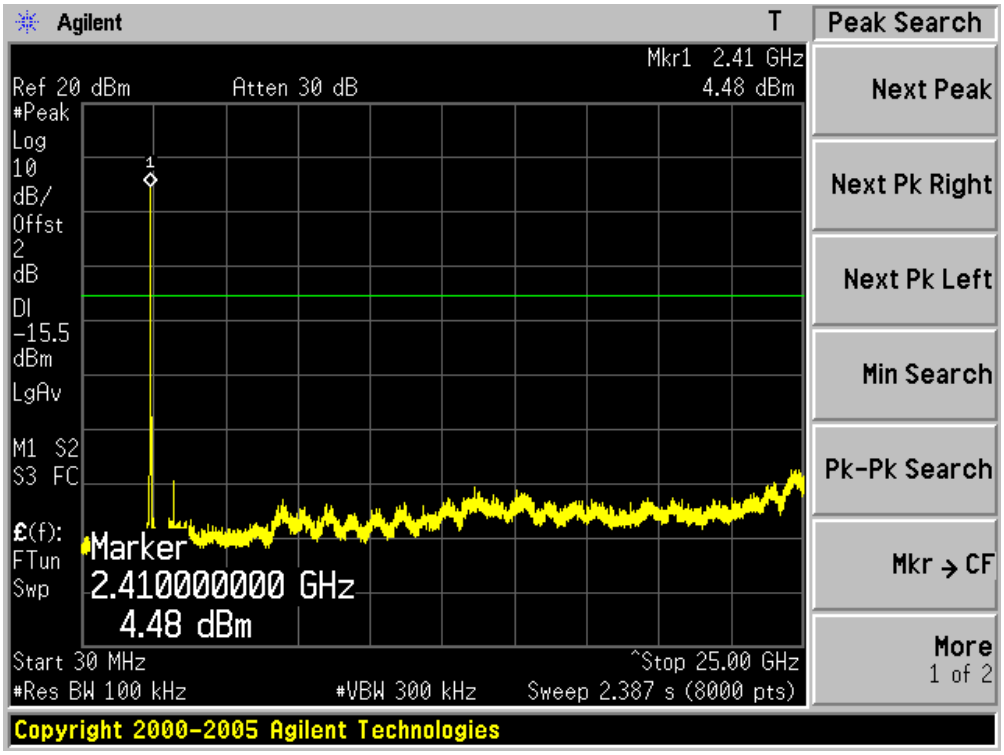


Channel 165 (5825MHz)

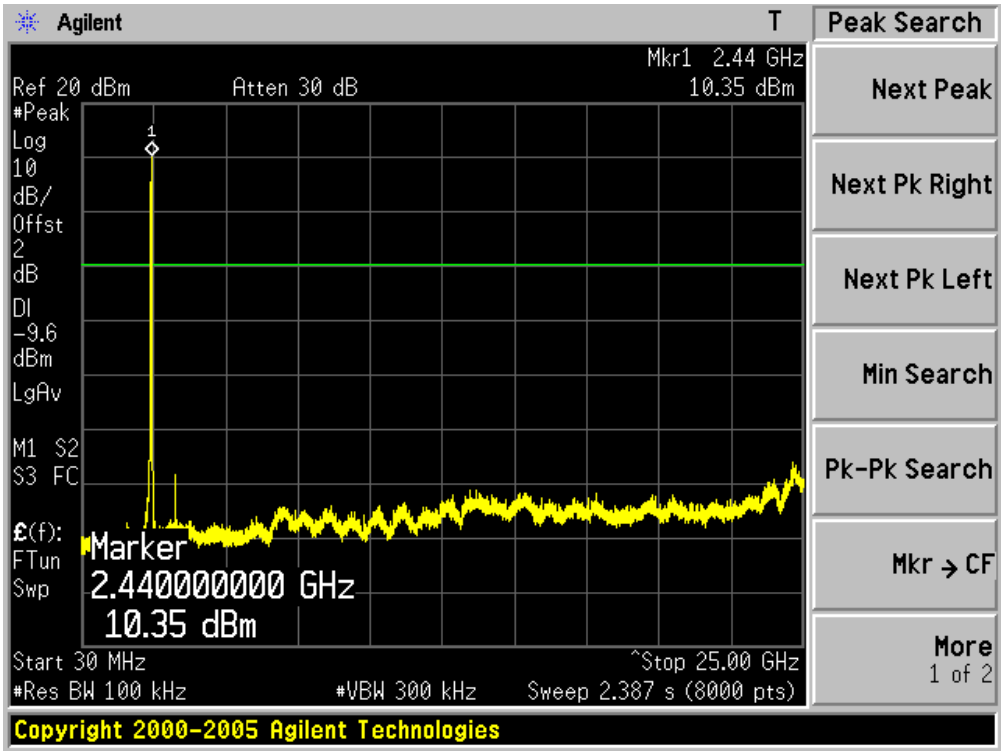


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 2)

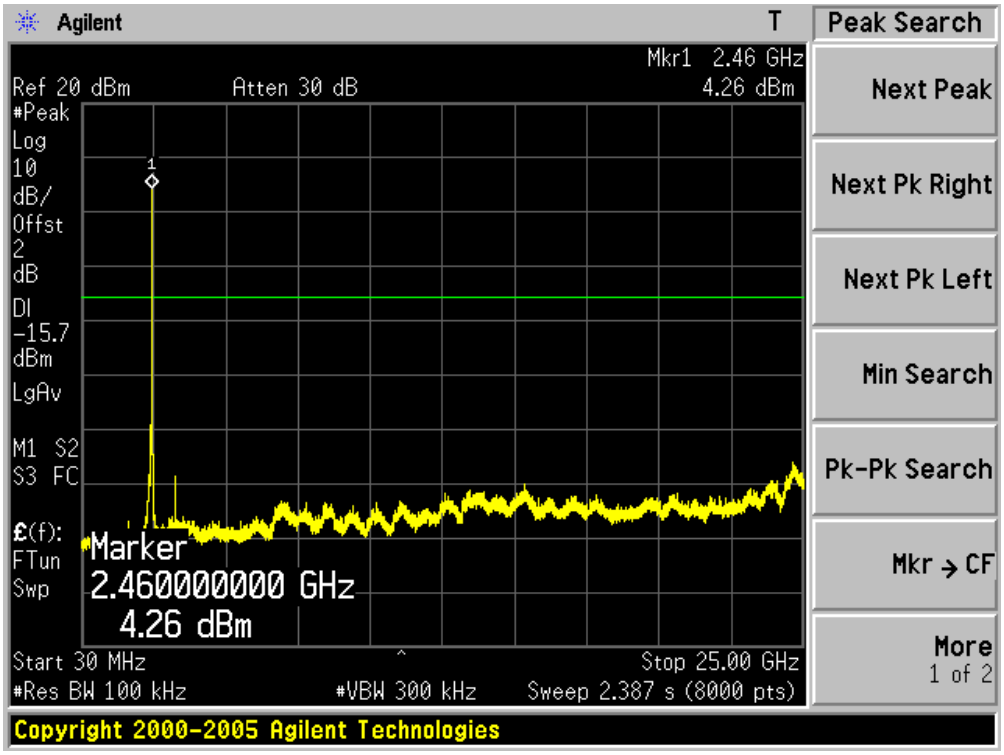
Channel 01 (2412MHz)



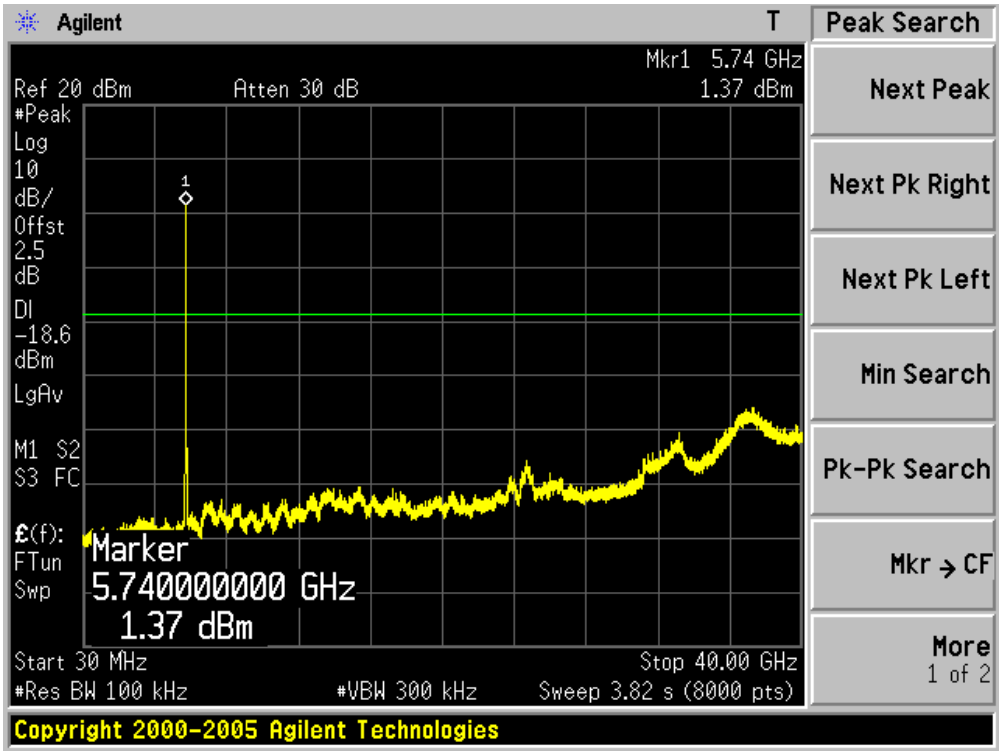
Channel 06 (2437MHz)



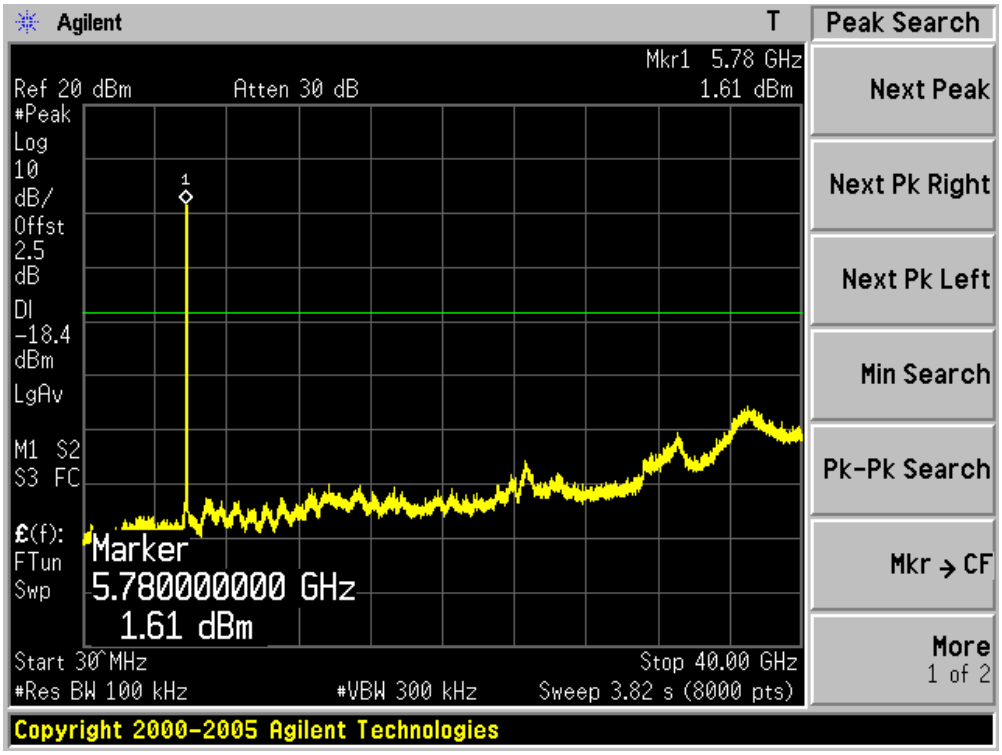
Channel 11 (2462MHz)



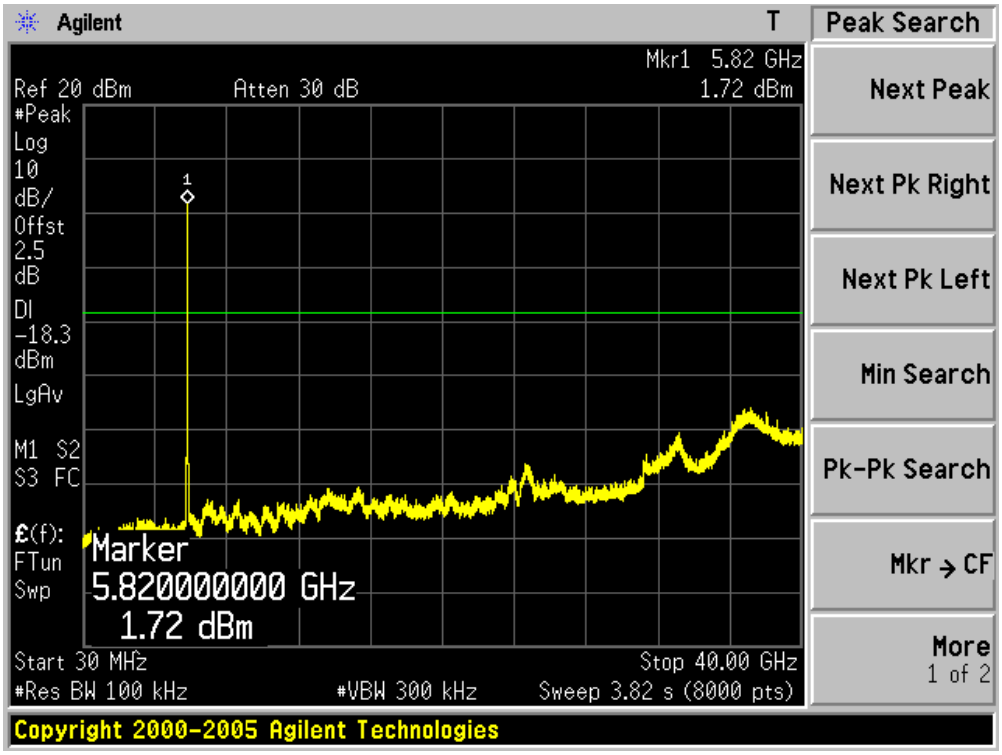
Channel 149 (5745MHz)



Channel 157 (5785MHz)

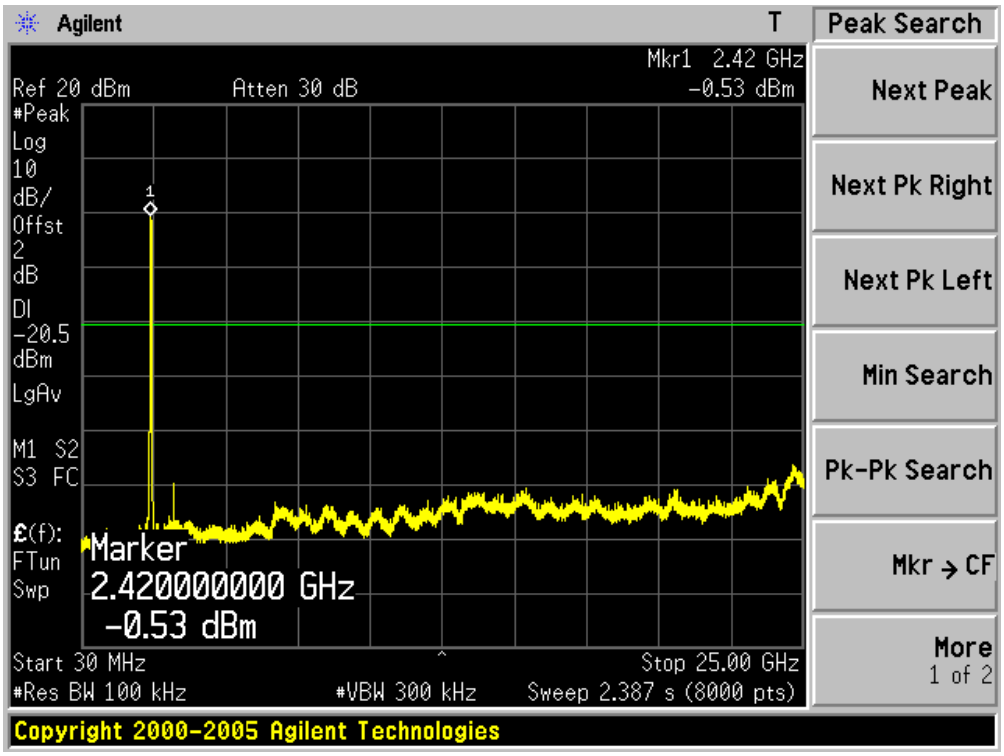


Channel 165 (5825MHz)

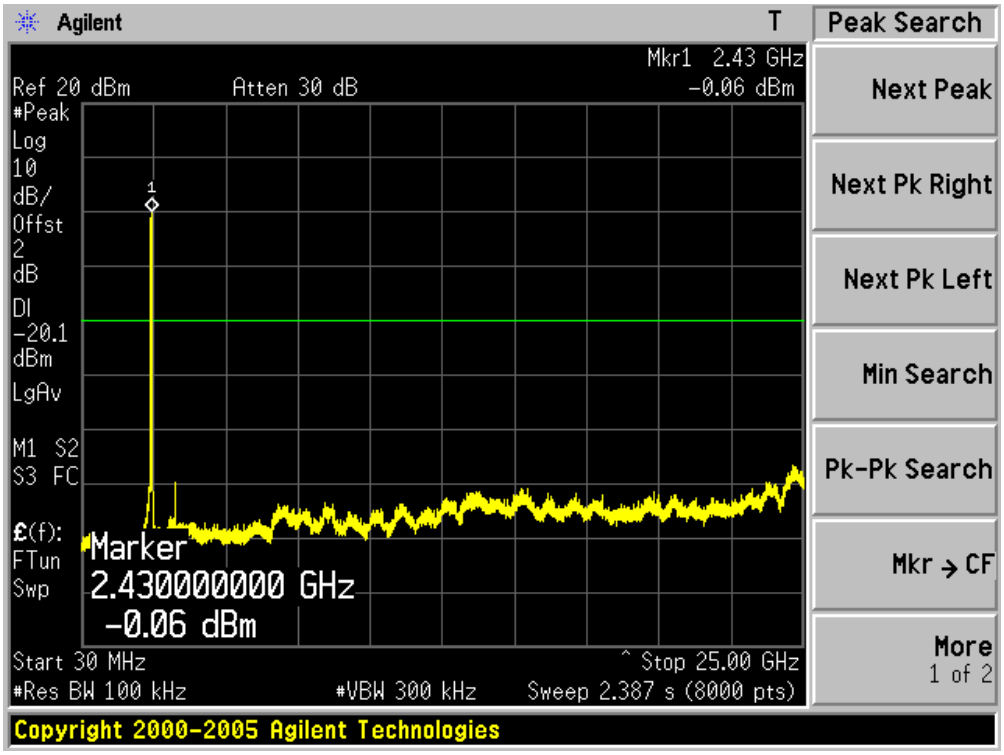


Product	:	IP-STB
Test Item	:	RF Antenna Conducted Spurious
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 2)

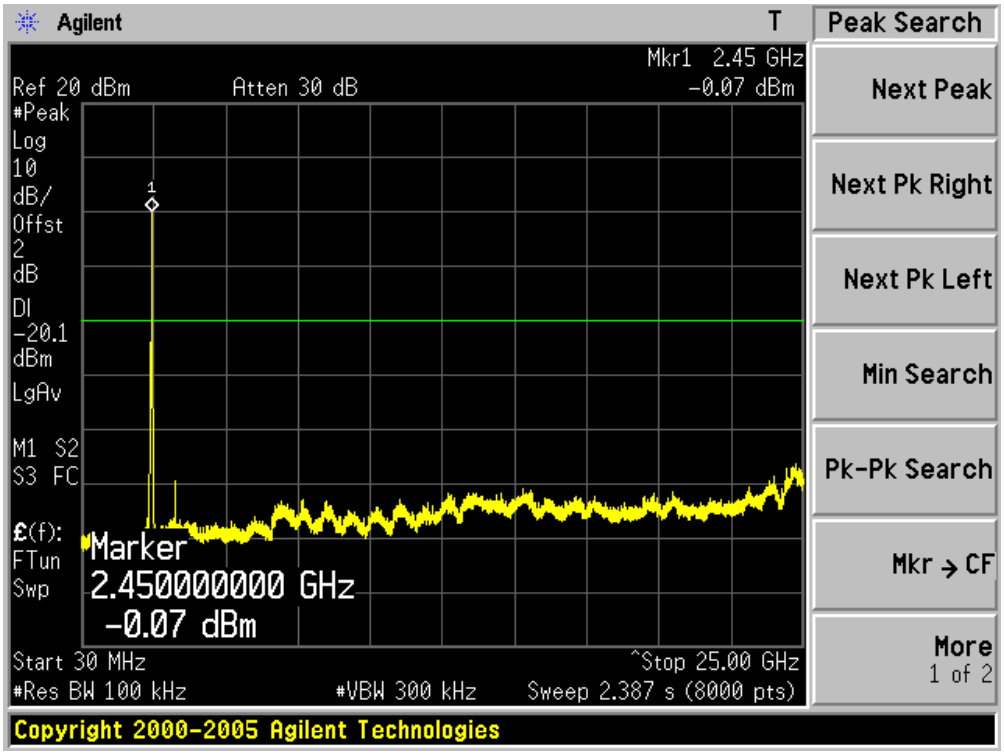
Channel 03 (2422MHz)



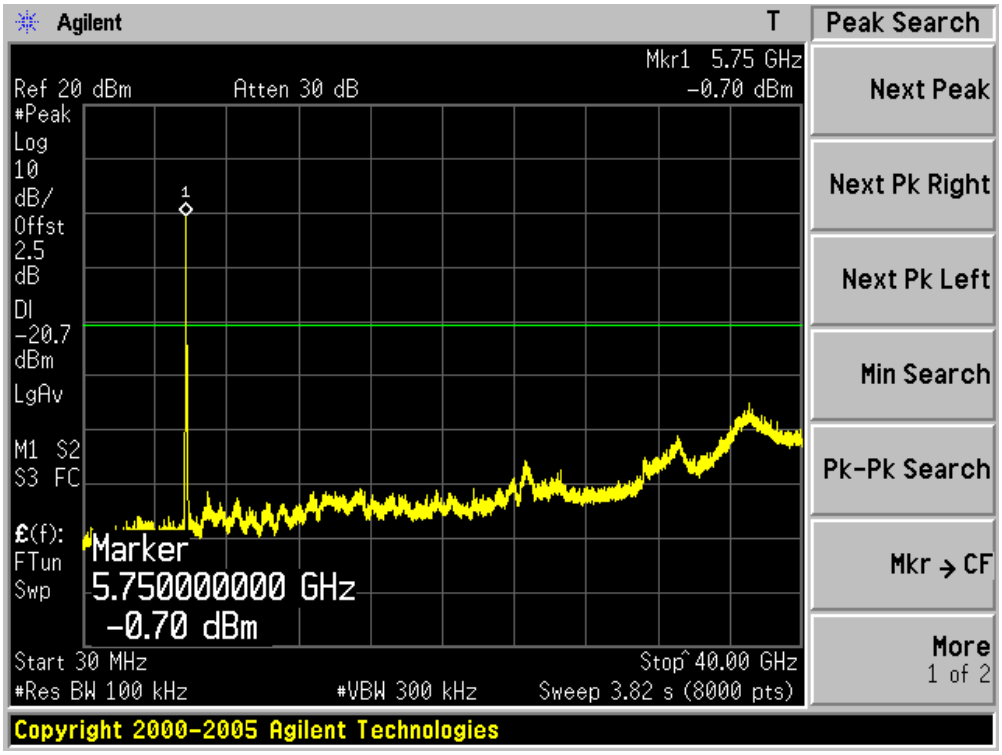
Channel 06 (2437MHz)



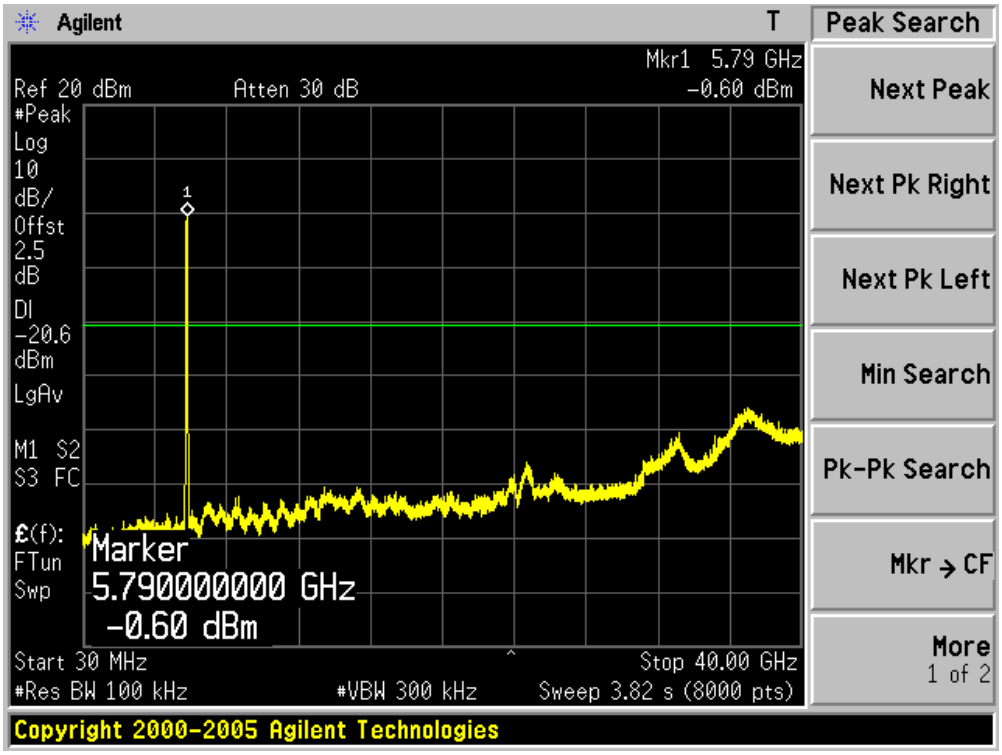
Channel 09 (2452MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



6. Radiated Emission Band Edge

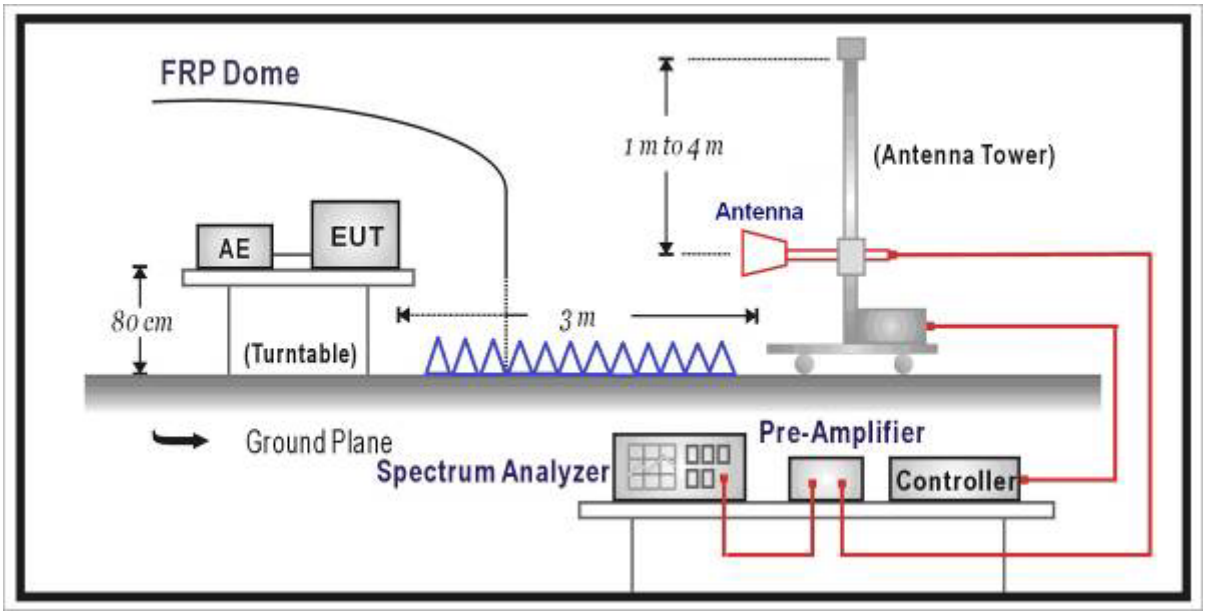
6.1. Test Equipment

☒Radiated Emission Band Edge / AC-5

Instrument	Manufacturer	Type No.	Serial No.	Cali. Due 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	2013.03.02
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.

6.2. Test Setup



6.3. Limit

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) (see Section 15.205(c)).

6.4. Test Procedure

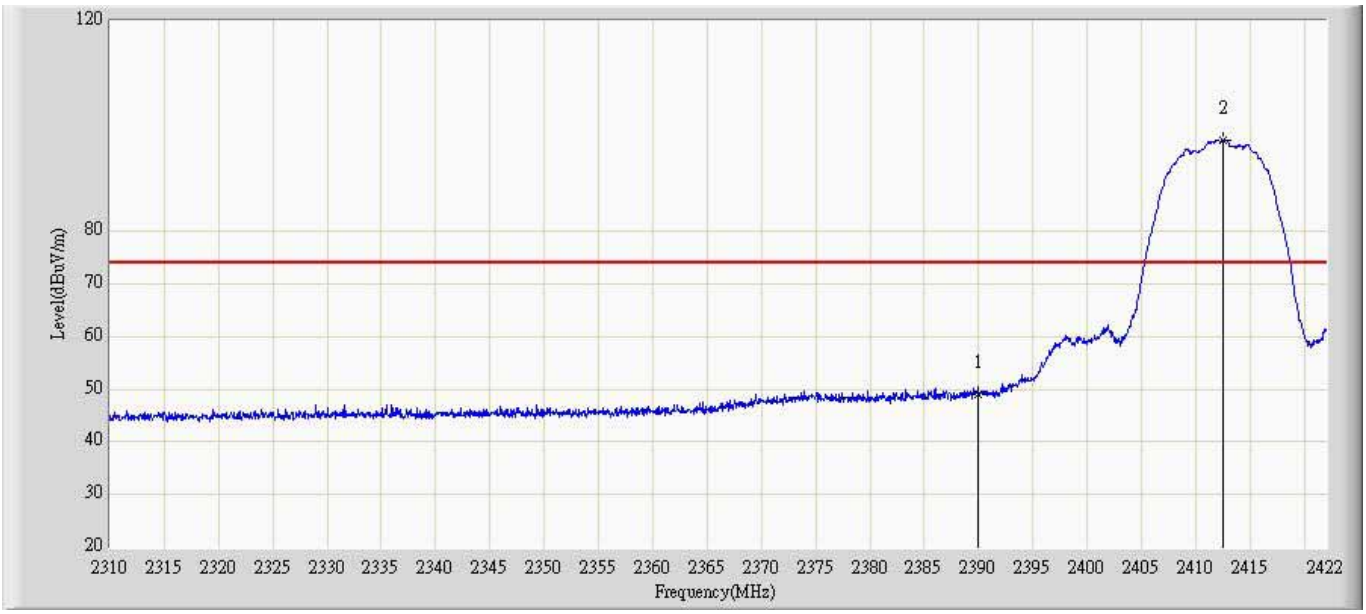
The EUT was setup according to ANSI C63.4: 2009 and tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission 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.

6.5. Uncertainty

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

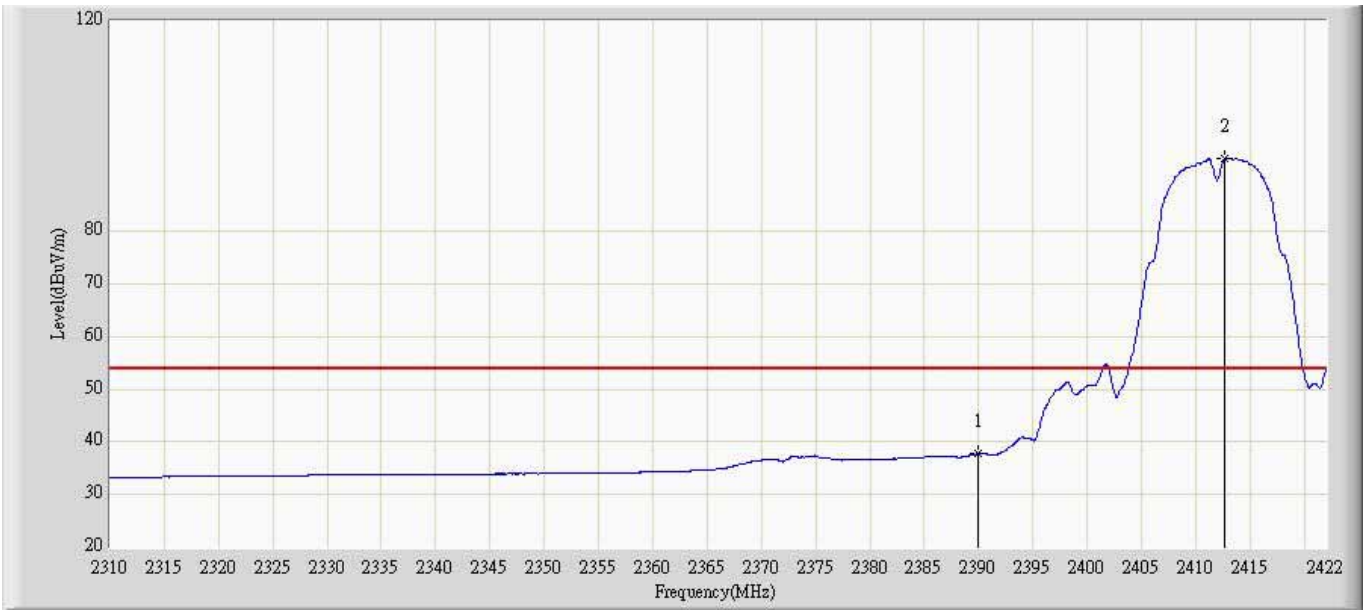
6.6. Test Result

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 17:43
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 1	



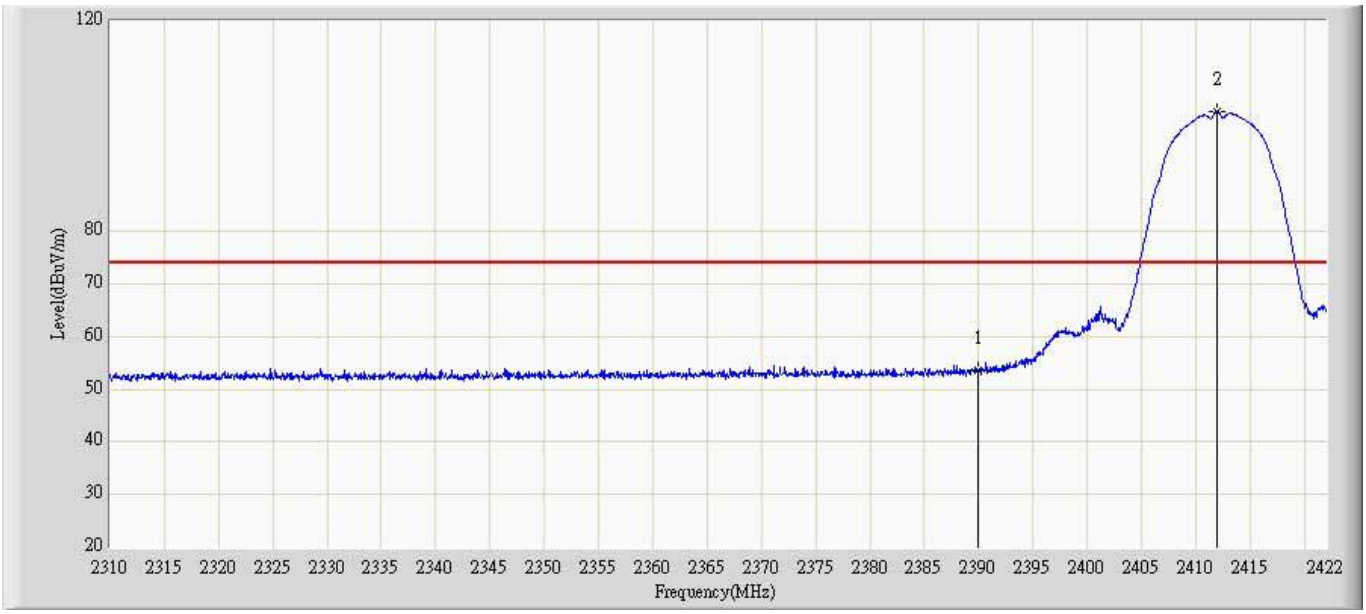
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	49.158	18.418	-24.842	74.000	30.740	PK
2		*	2412.536	97.198	66.403	N/A	N/A	30.795	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 1	



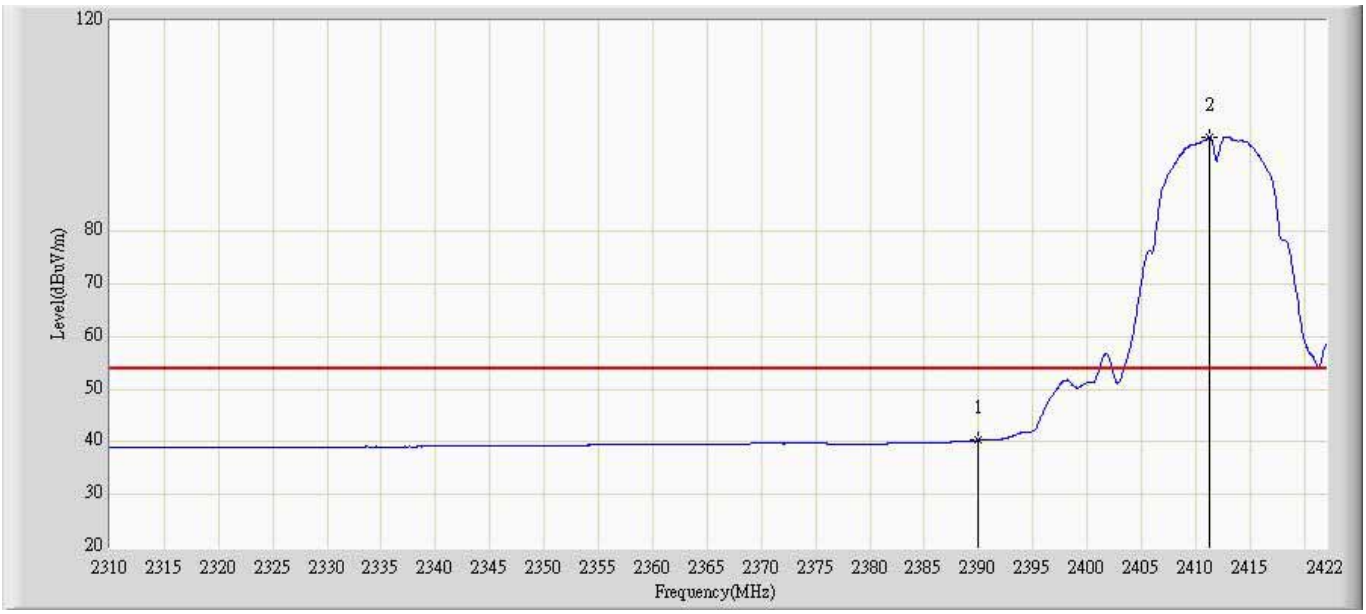
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	37.804	7.064	-16.196	54.000	30.740	AV
2		*	2412.704	93.986	63.191	N/A	N/A	30.795	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:21
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 1	



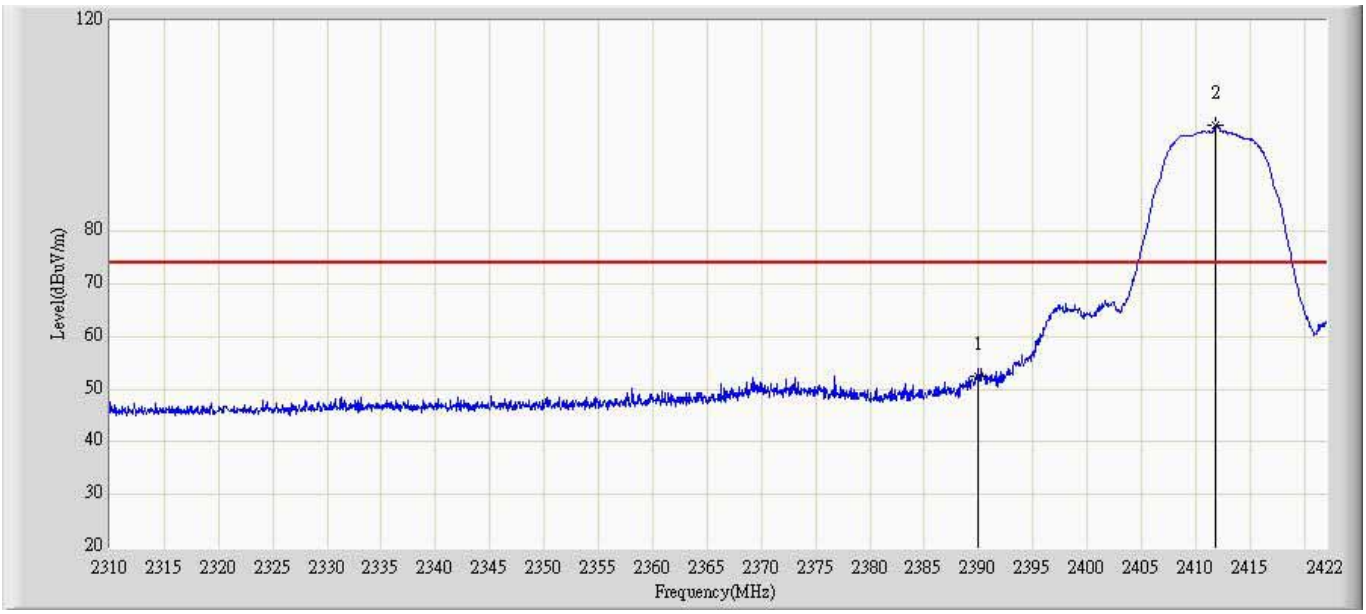
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	53.484	22.744	-20.516	74.000	30.740	PK
2		*	2412.032	102.719	71.926	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 1	



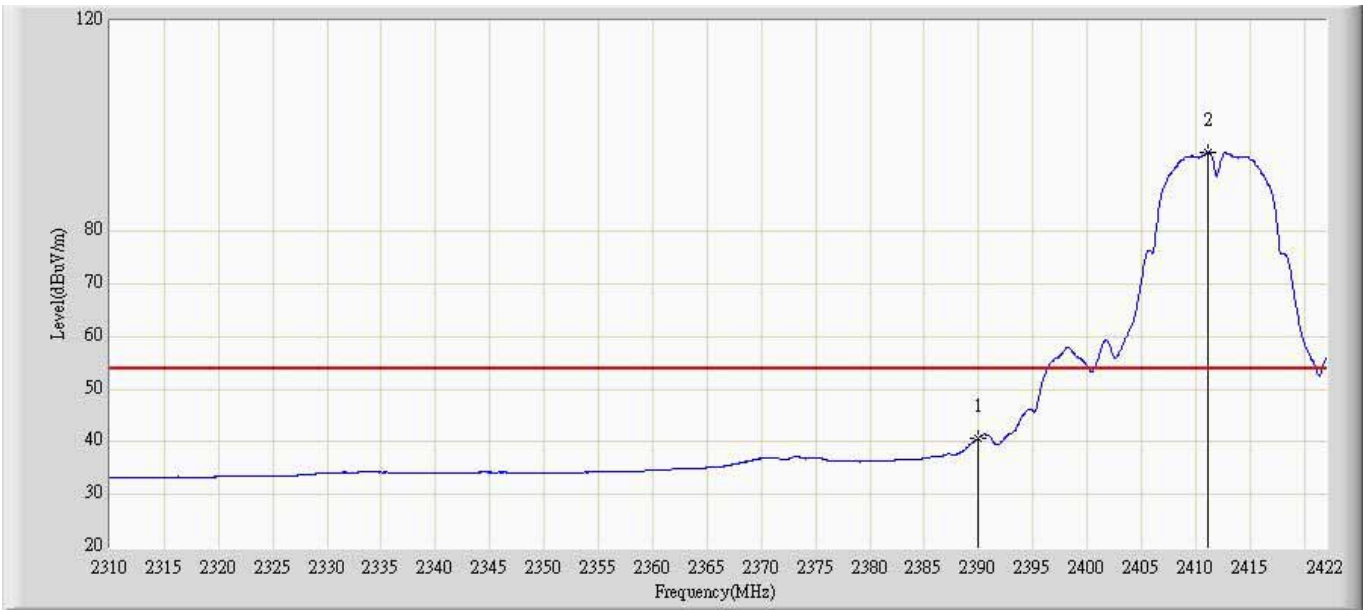
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	40.283	9.543	-13.717	54.000	30.740	AV
2		*	2411.304	97.878	67.087	N/A	N/A	30.791	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 2	



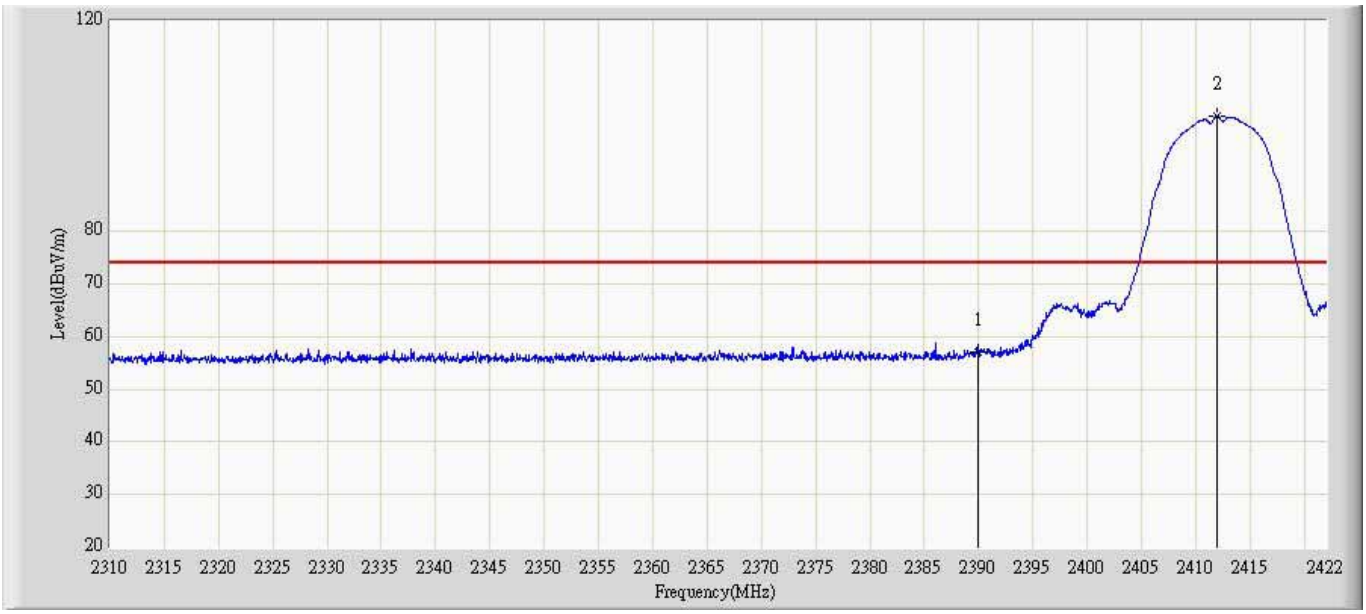
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	52.513	21.773	-21.487	74.000	30.740	PK
2		*	2411.864	100.082	69.289	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 2	



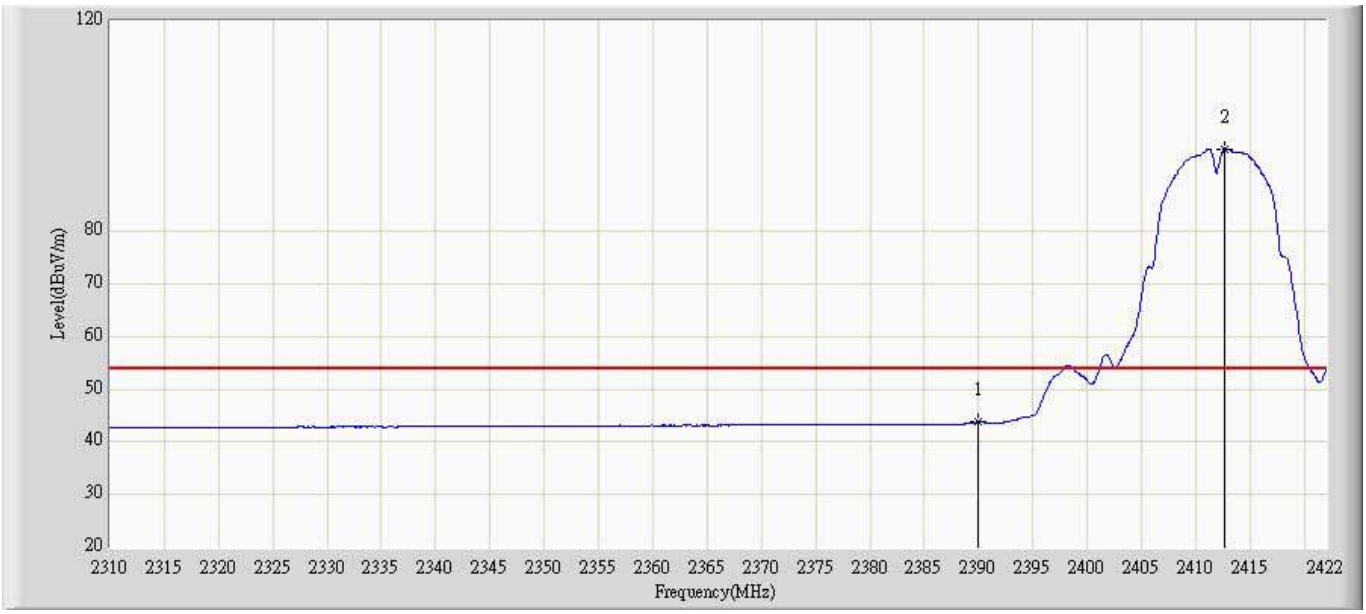
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	40.770	10.030	-13.230	54.000	30.740	AV
2		*	2411.136	95.036	64.246	N/A	N/A	30.790	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 2	



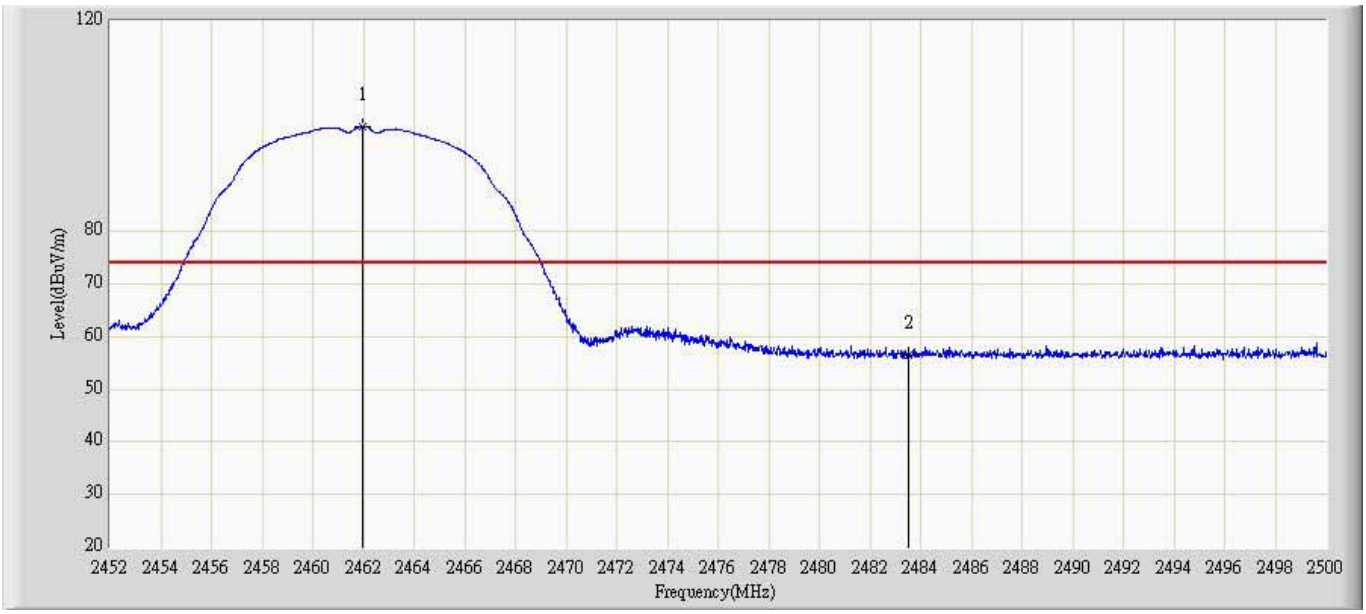
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	57.194	26.454	-16.806	74.000	30.740	PK
2		*	2412.032	101.889	71.096	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2412MHz by 802.11b chain 2	



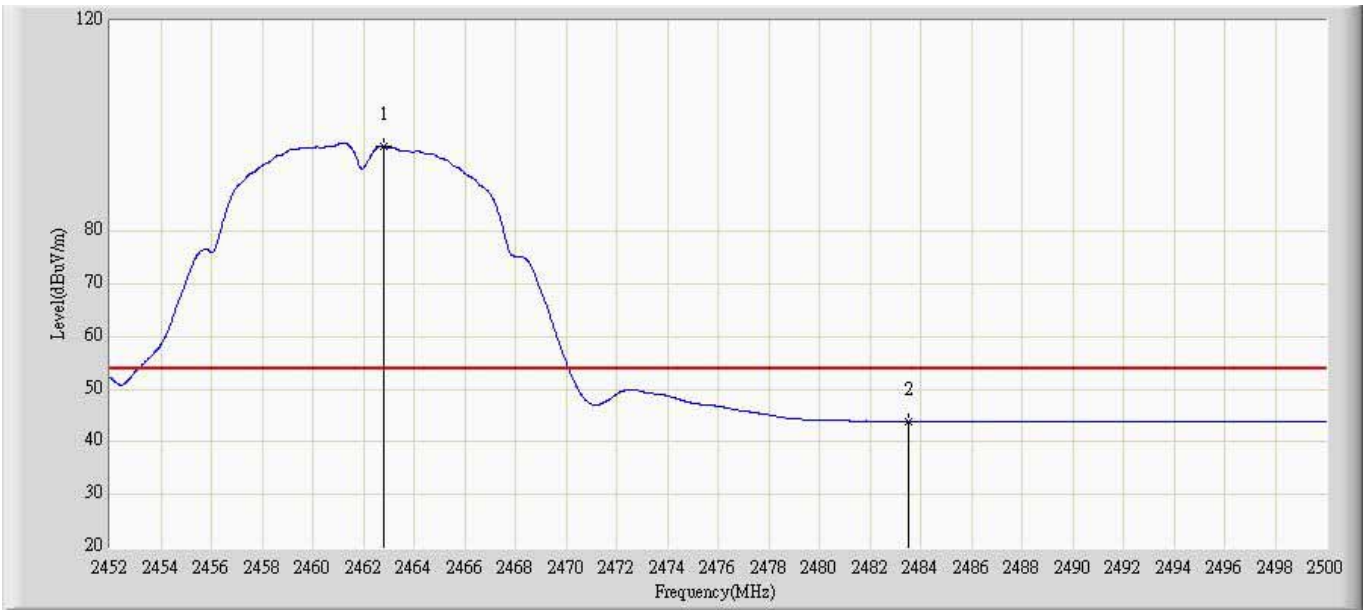
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	43.752	13.012	-10.248	54.000	30.740	AV
2		*	2412.648	95.672	64.877	N/A	N/A	30.795	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:45
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 1	



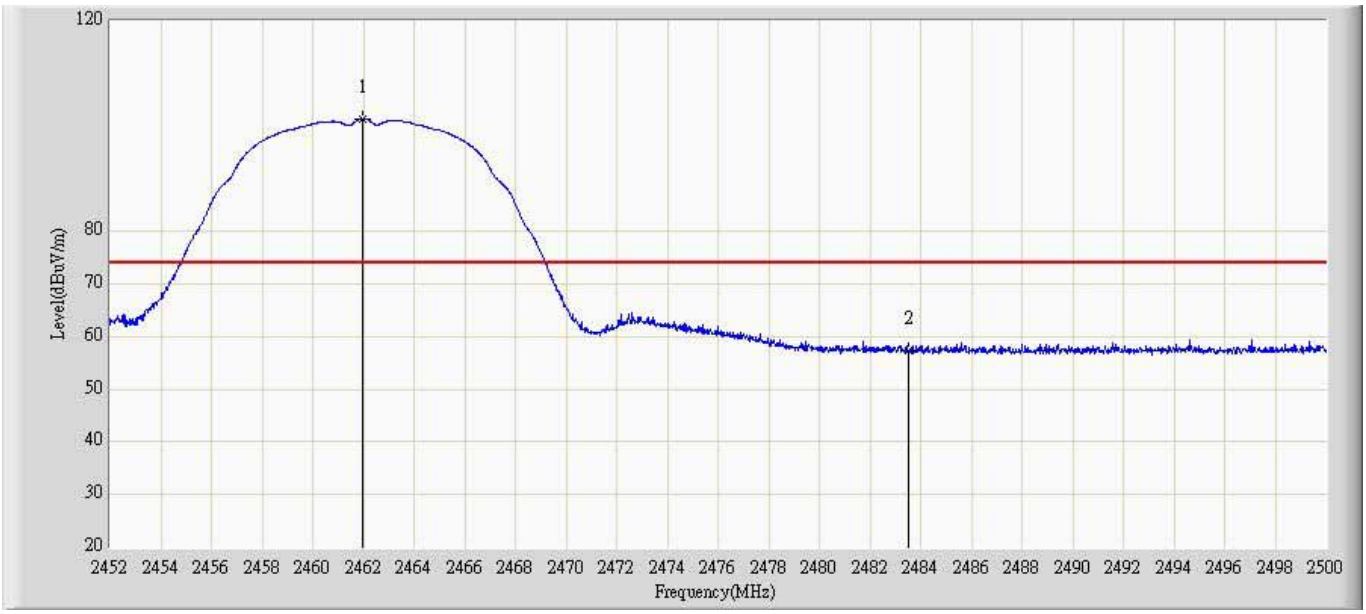
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.984	100.009	69.077	N/A	N/A	30.932	PK
2			2483.500	56.406	25.420	-17.594	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 19:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 1	



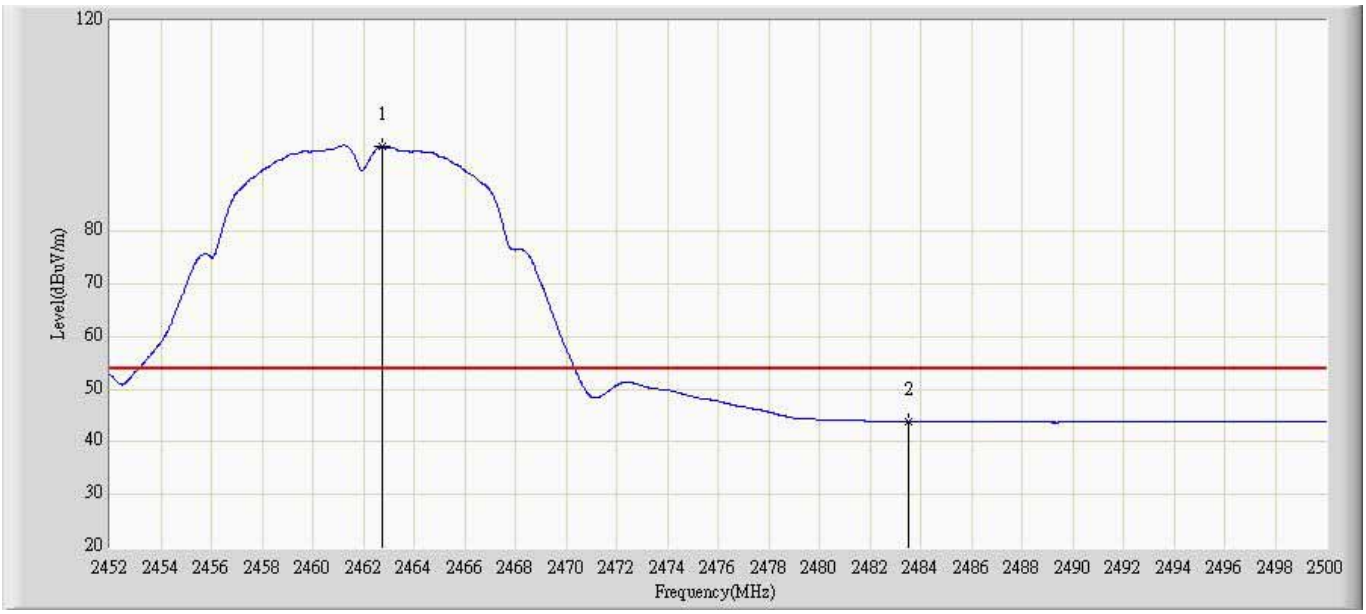
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.800	96.268	65.334	N/A	N/A	30.933	AV
2			2483.500	43.915	12.930	-10.085	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.984	101.417	70.485	N/A	N/A	30.932	PK
2			2483.500	57.397	26.411	-16.603	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.728	96.074	65.140	N/A	N/A	30.933	AV
2			2483.500	43.887	12.902	-10.113	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:15
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 2	

No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.056	104.009	73.077	N/A	N/A	30.932	PK
2			2483.500	58.809	27.824	-15.191	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:18
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 2	

No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.312	100.175	69.245	N/A	N/A	30.930	AV
2			2483.500	48.111	17.126	-5.889	54.000	30.985	AV

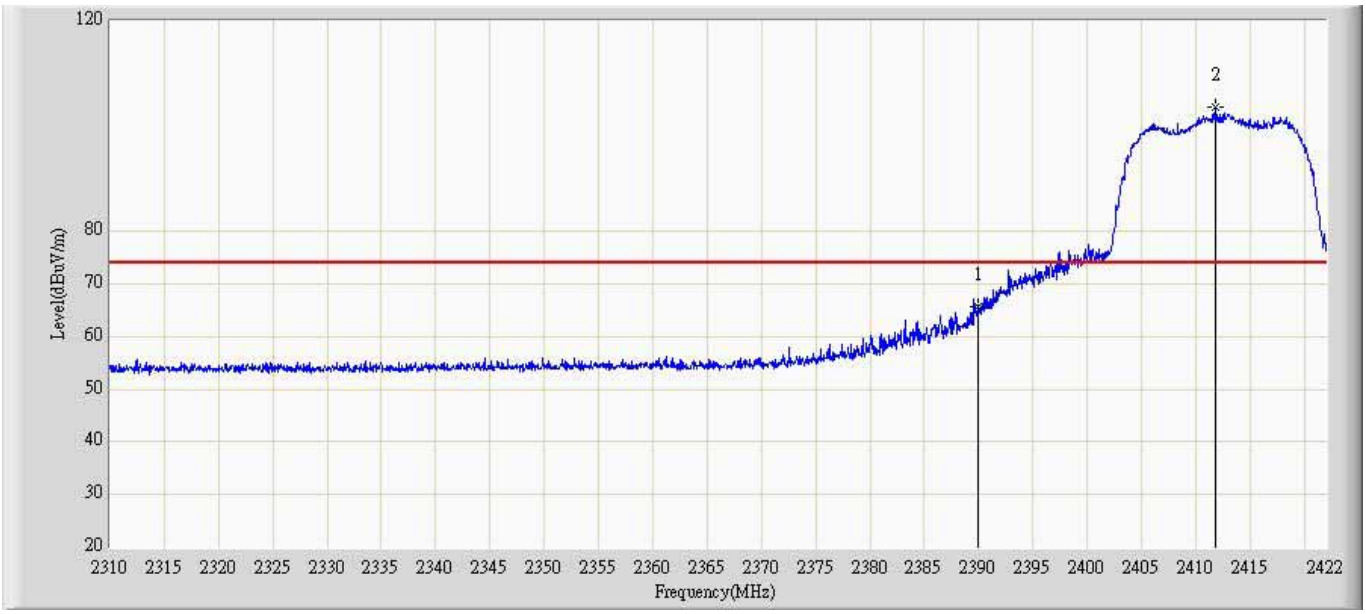
Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 2	

No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.984	105.704	74.772	N/A	N/A	30.932	PK
2			2483.500	59.632	28.646	-14.368	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode1:Transmit at channel 2462MHz by 802.11b chain 2	

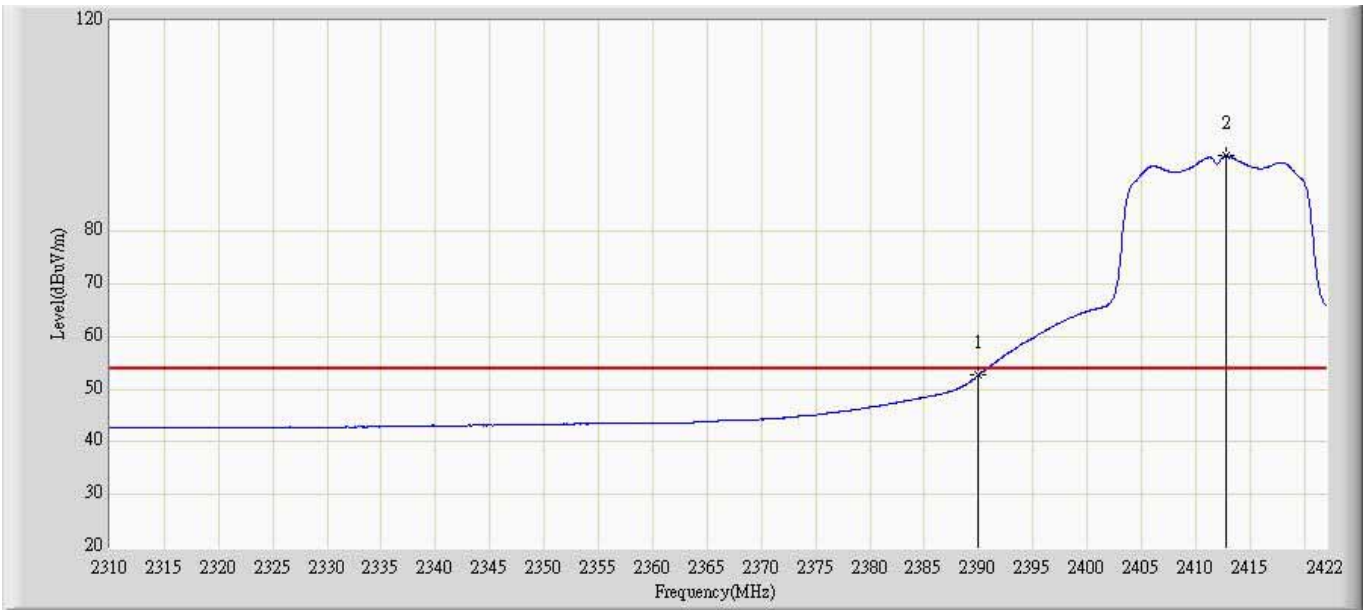
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.312	102.052	71.122	N/A	N/A	30.930	AV
2			2483.500	49.686	18.701	-4.314	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 1	



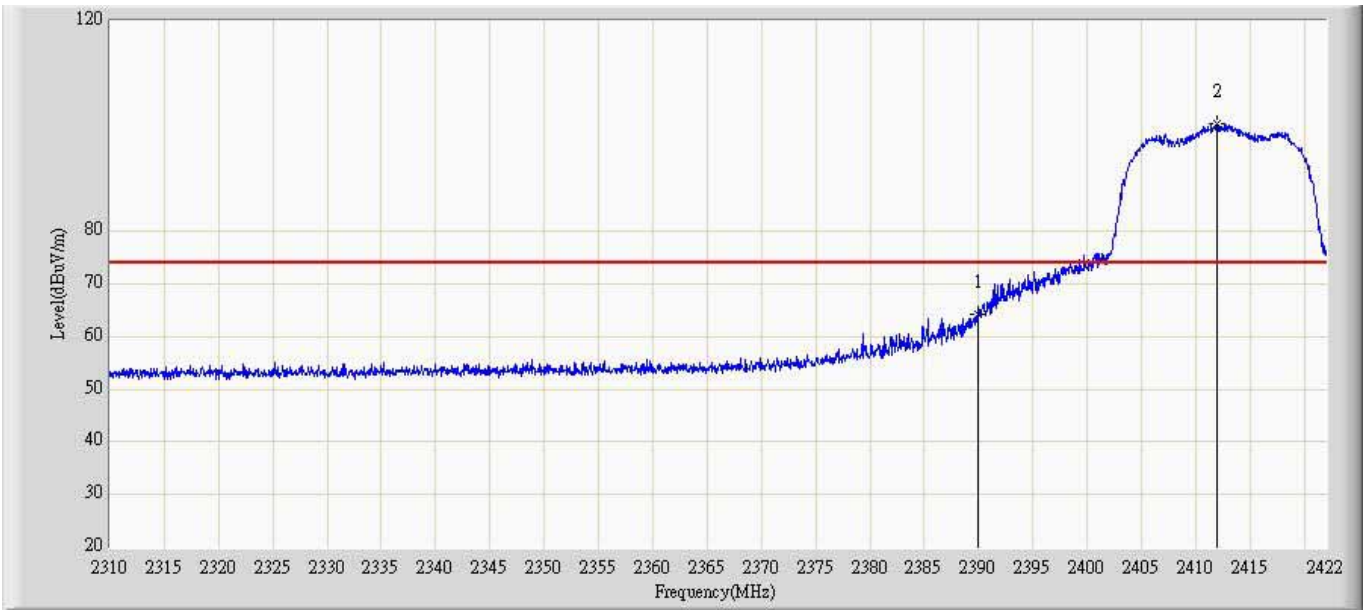
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	65.736	34.996	-8.264	74.000	30.740	PK
2		*	2411.808	103.738	72.946	N/A	N/A	30.792	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 1	



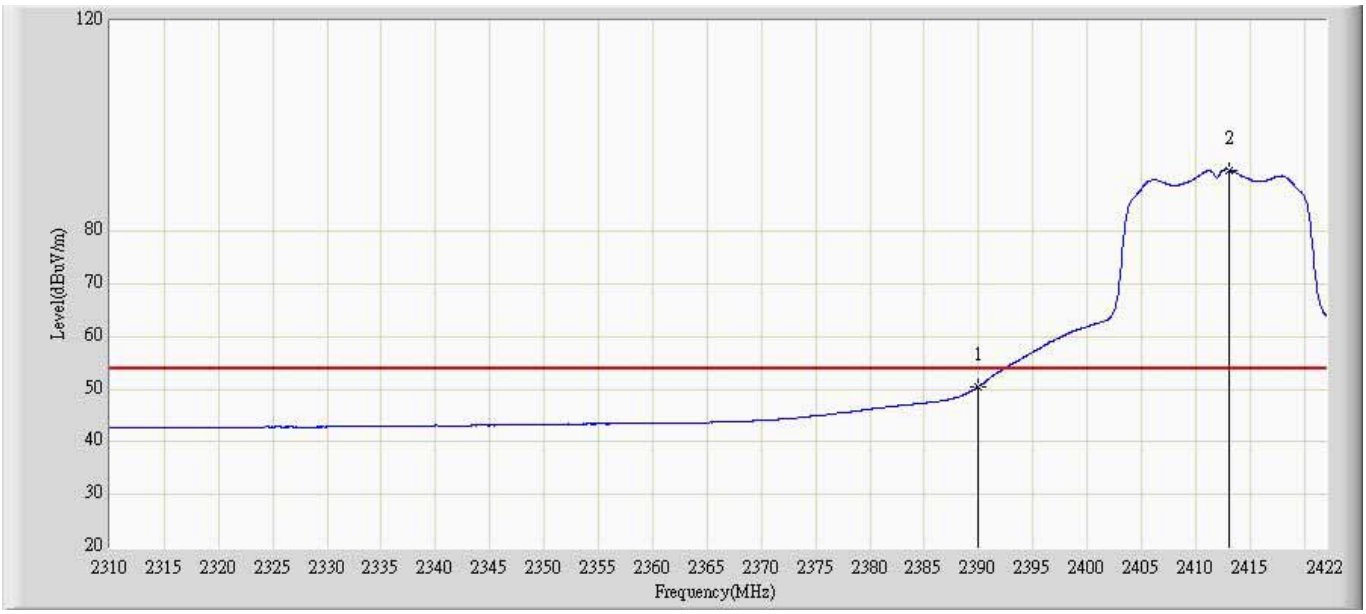
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	52.695	21.955	-1.305	54.000	30.740	AV
2		*	2412.872	94.319	63.523	N/A	N/A	30.795	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 1	



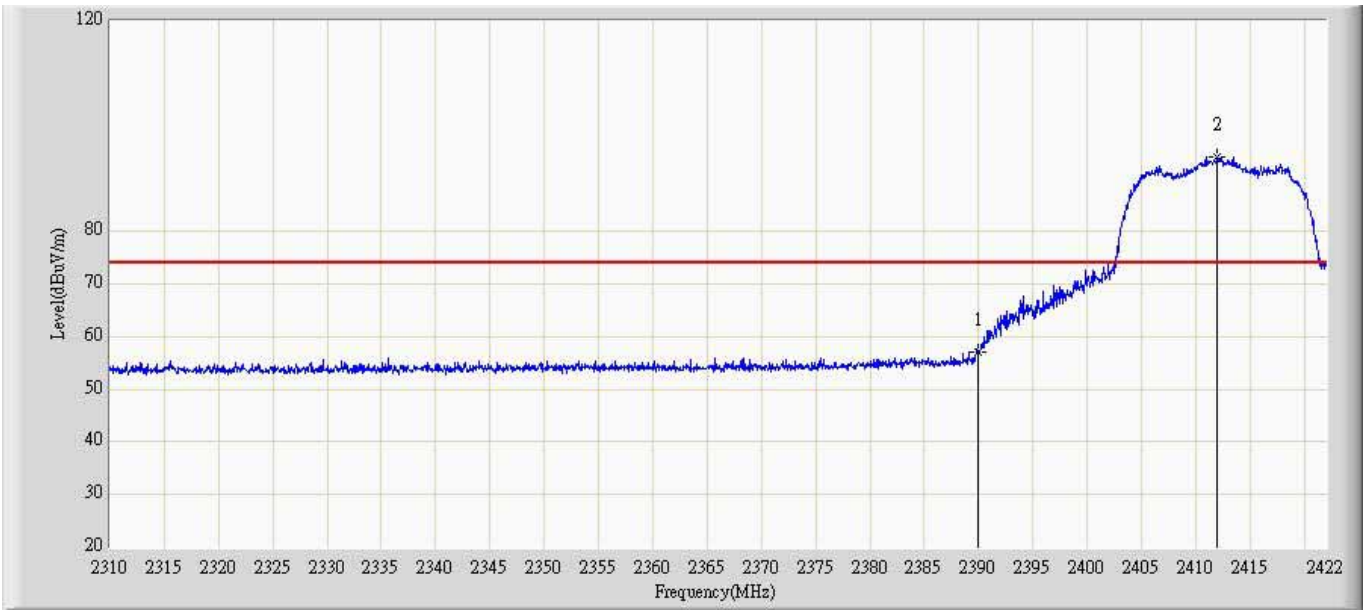
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	64.154	33.414	-9.846	74.000	30.740	PK
2		*	2411.920	100.460	69.667	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 1	



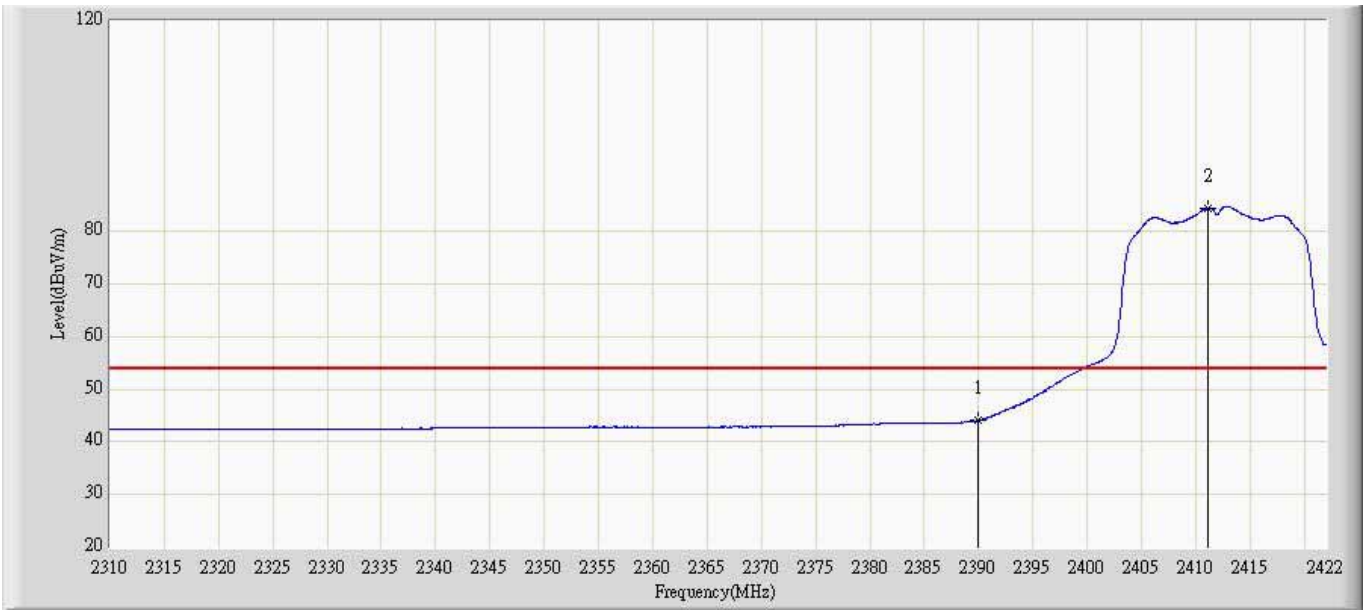
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.512	19.772	-3.488	54.000	30.740	AV
2		*	2413.040	91.683	60.887	N/A	N/A	30.796	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:39
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 2	



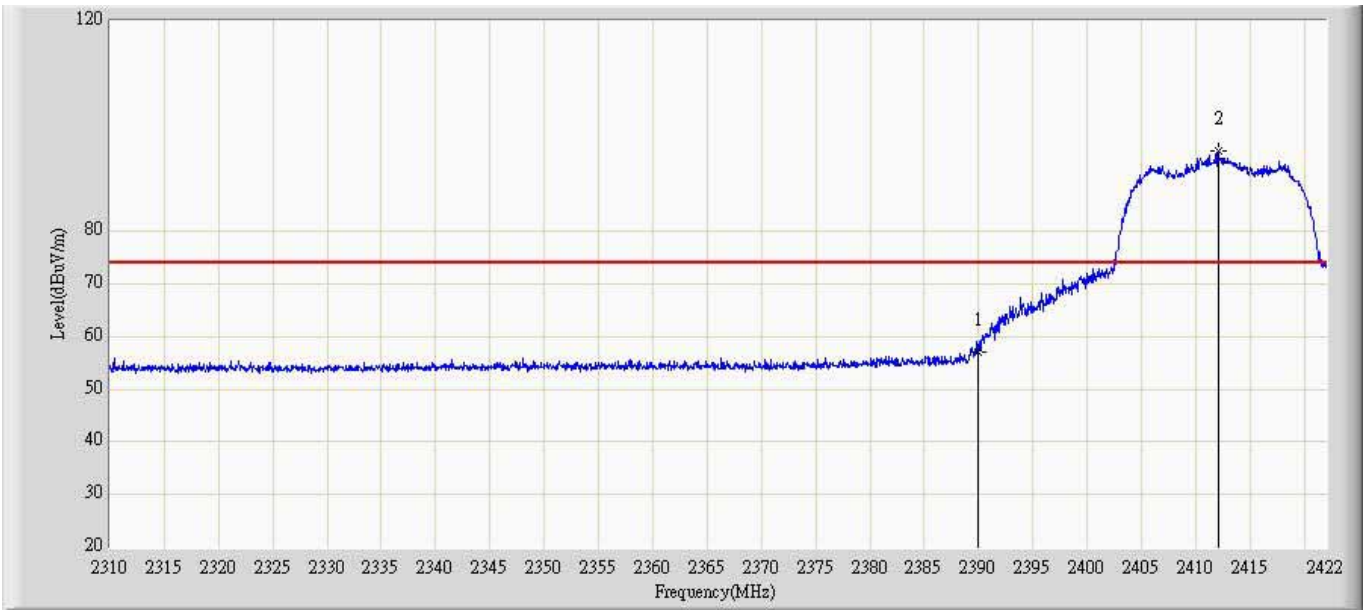
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	56.987	26.247	-17.013	74.000	30.740	PK
2		*	2411.976	94.054	63.261	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:42
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 2	



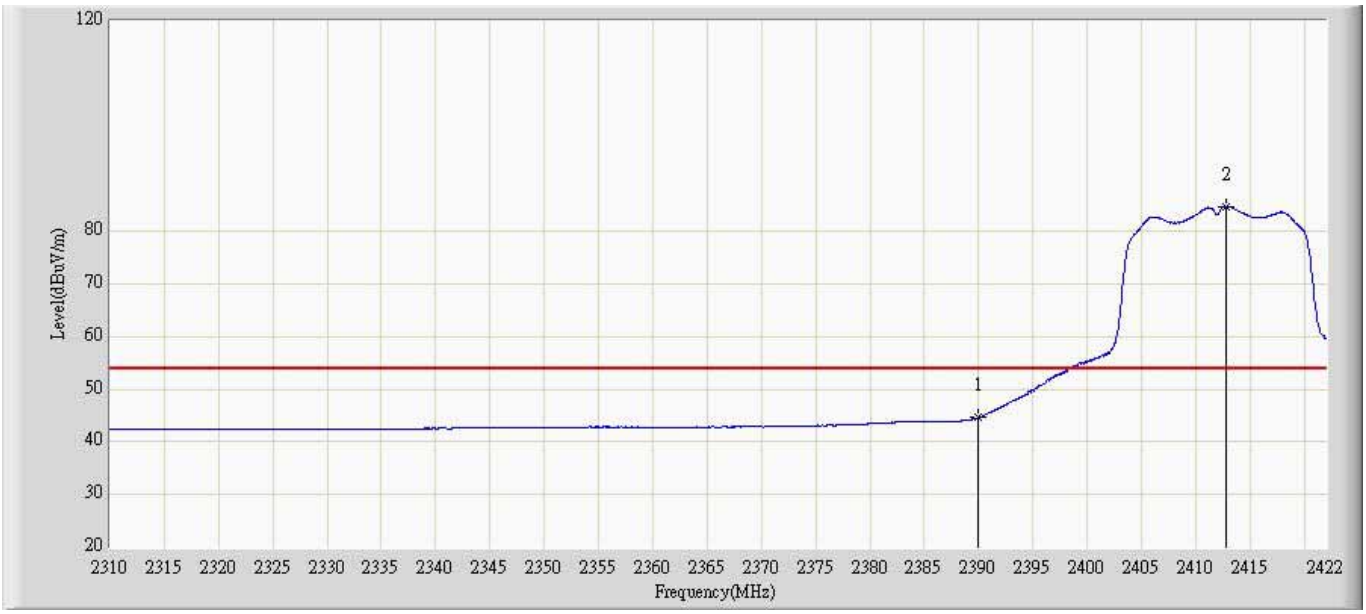
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	44.125	13.385	-9.875	54.000	30.740	AV
2		*	2411.136	84.499	53.709	N/A	N/A	30.790	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 2	



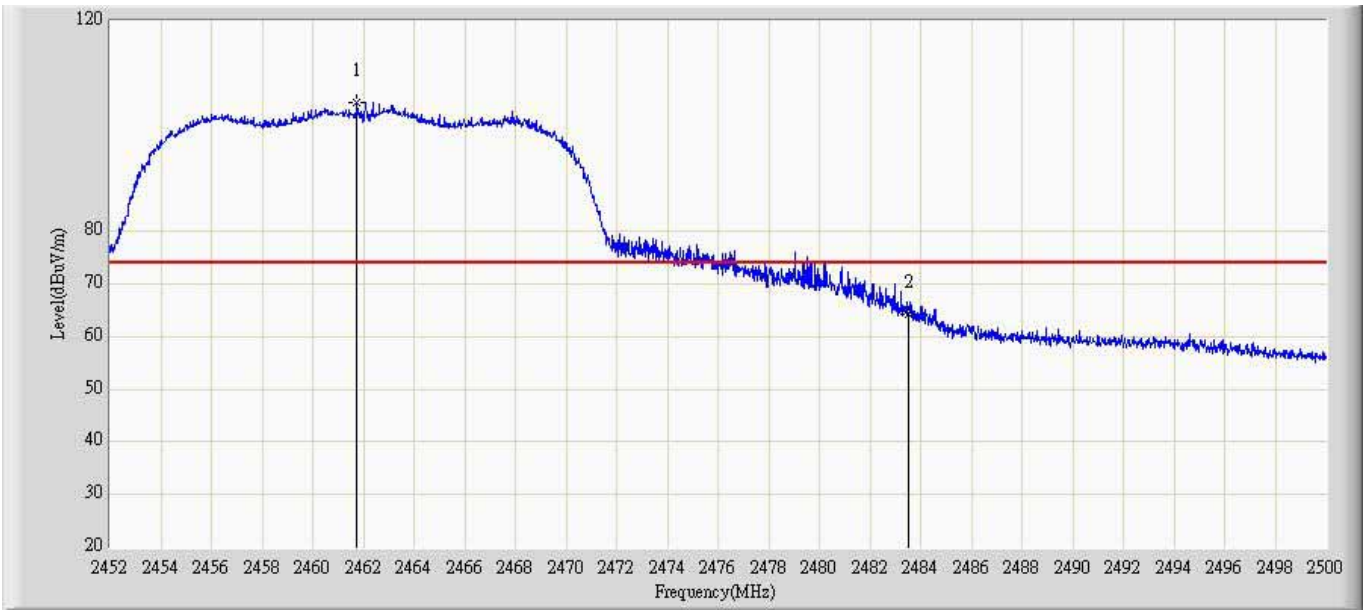
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	57.088	26.348	-16.912	74.000	30.740	PK
2		*	2412.088	95.395	64.602	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2412MHz by 802.11g chain 2	



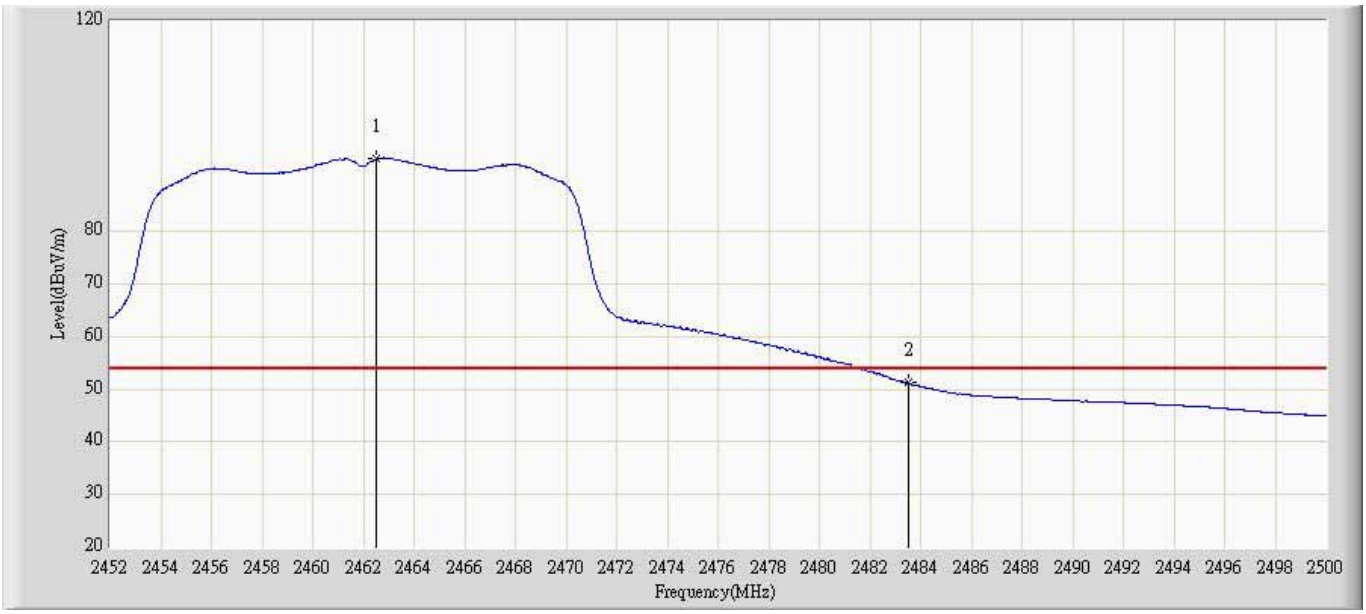
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	44.629	13.889	-9.371	54.000	30.740	AV
2		*	2412.816	84.770	53.975	N/A	N/A	30.795	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain 1	



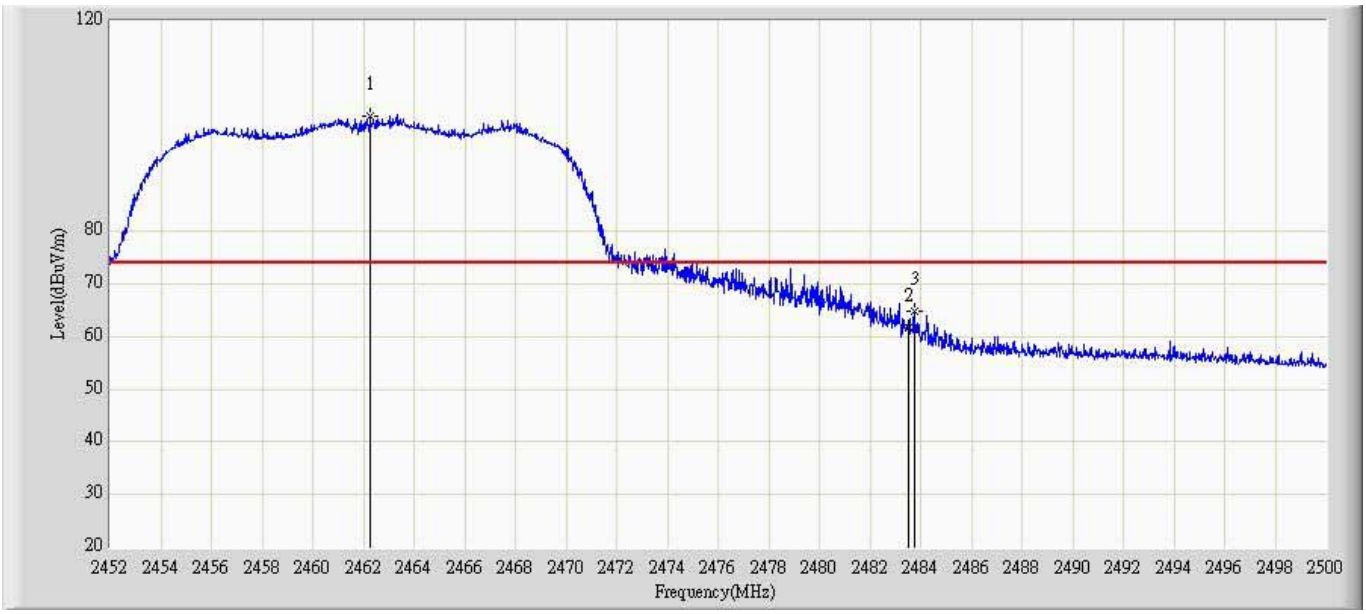
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.744	104.423	73.492	N/A	N/A	30.932	PK
2			2483.500	64.251	33.266	-9.749	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain 1	



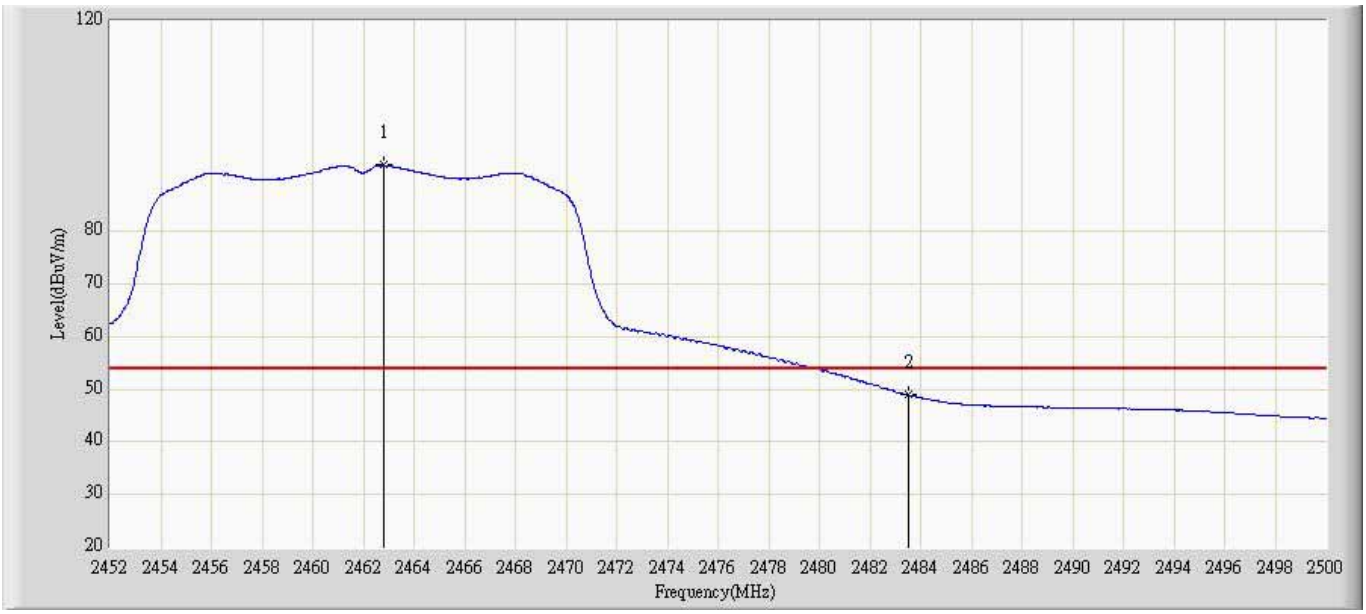
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.512	93.831	62.898	N/A	N/A	30.933	AV
2			2483.500	51.234	20.249	-2.766	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain 1	



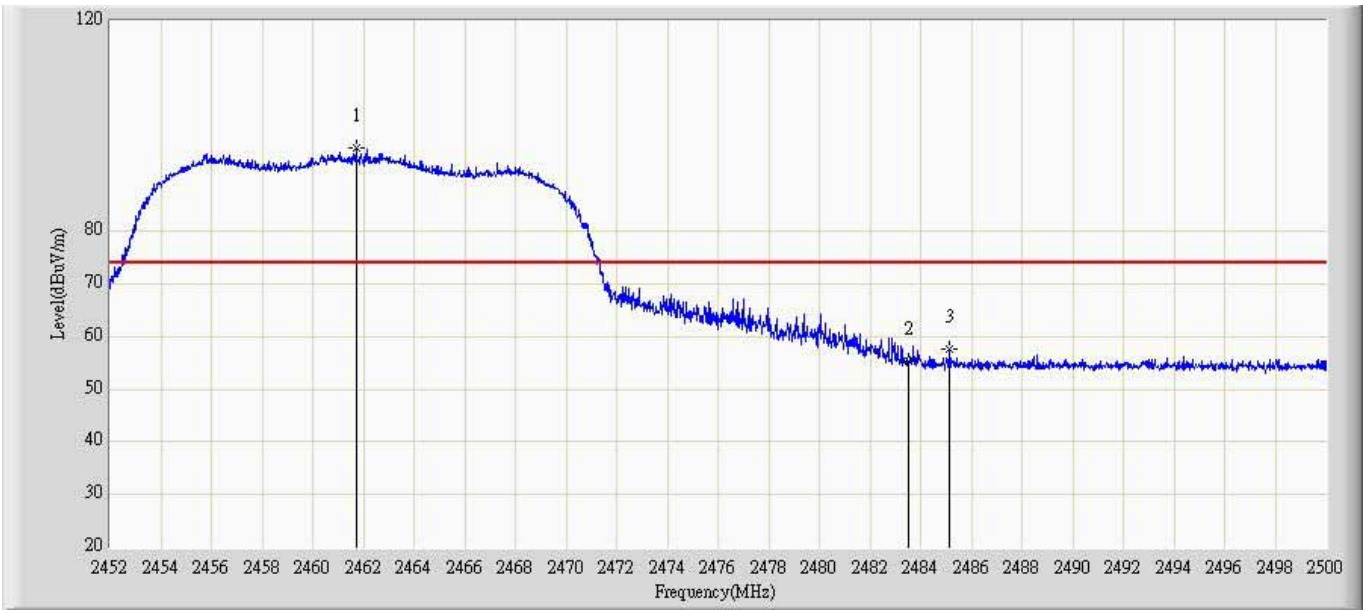
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.272	101.784	70.851	N/A	N/A	30.932	PK
2			2483.500	61.806	30.821	-12.194	74.000	30.985	PK
3			2483.752	64.740	33.754	-9.260	74.000	30.987	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain 1	



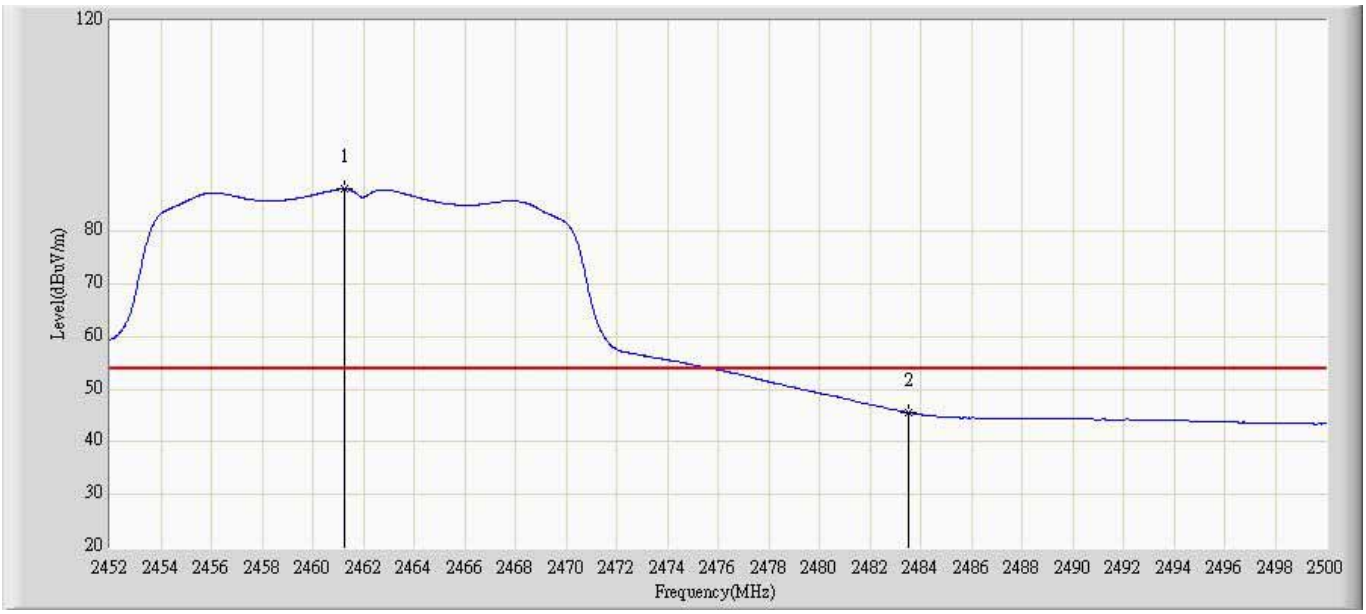
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.800	92.573	61.639	N/A	N/A	30.933	AV
2			2483.500	49.016	18.030	-4.984	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 20:57
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain1	



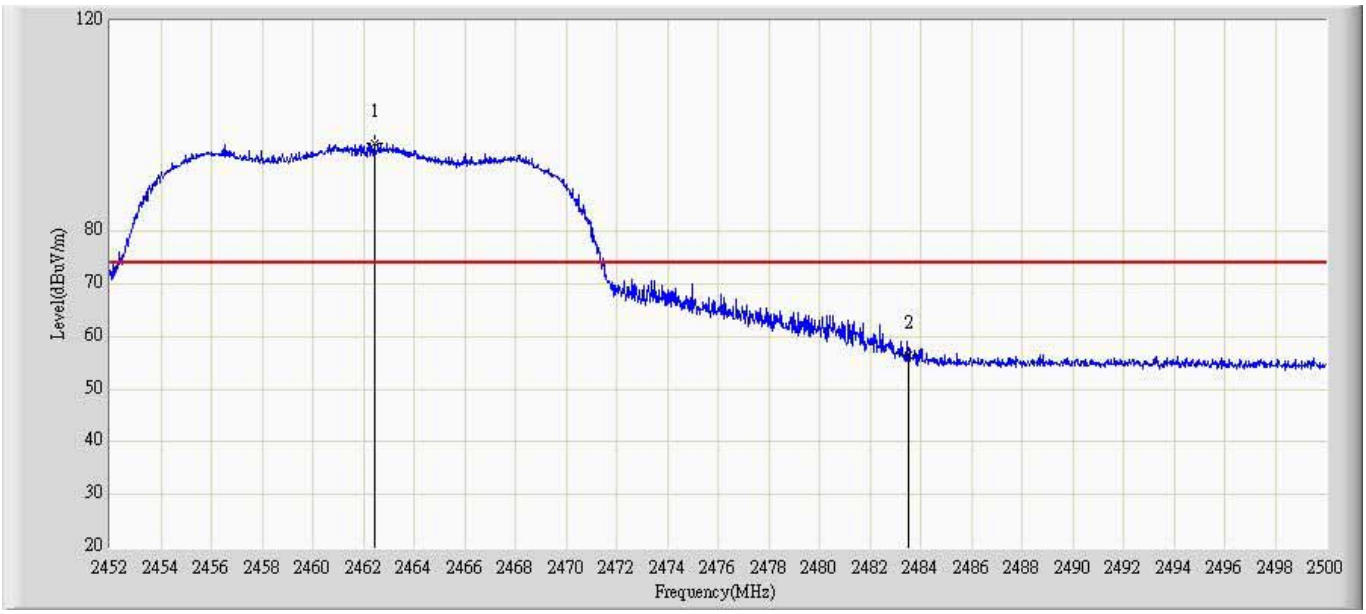
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.720	95.856	64.925	N/A	N/A	30.931	PK
2			2483.500	55.421	24.436	-18.579	74.000	30.985	PK
3			2485.144	57.705	26.715	-16.295	74.000	30.990	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:00
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain1	



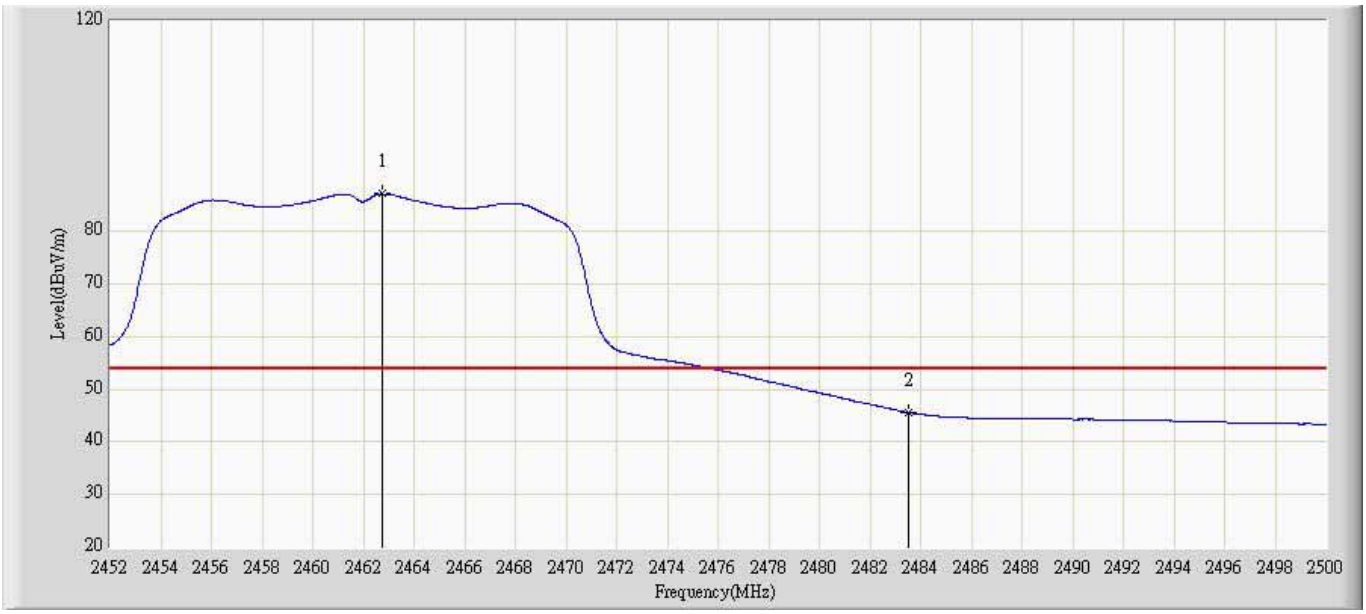
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.240	88.051	57.121	N/A	N/A	30.930	AV
2			2483.500	45.543	14.558	-8.457	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:03
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain1	



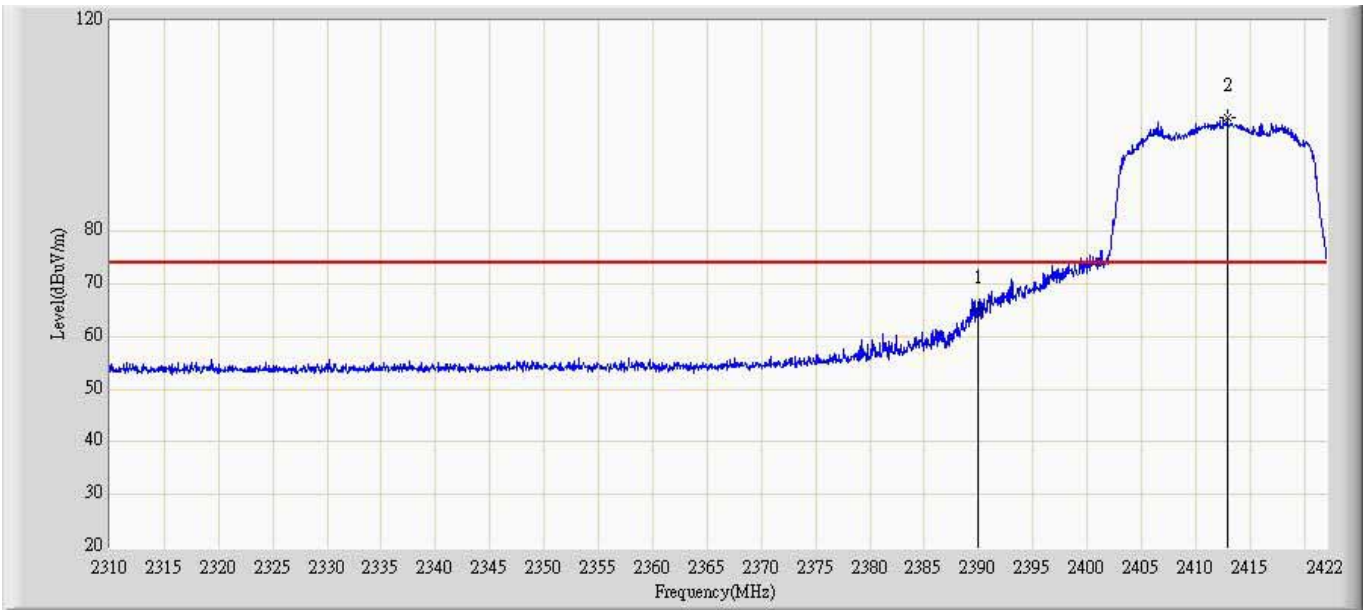
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.440	96.664	65.731	N/A	N/A	30.933	PK
2			2483.500	56.535	25.550	-17.465	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:06
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode2:Transmit at channel 2462MHz by 802.11g chain1	



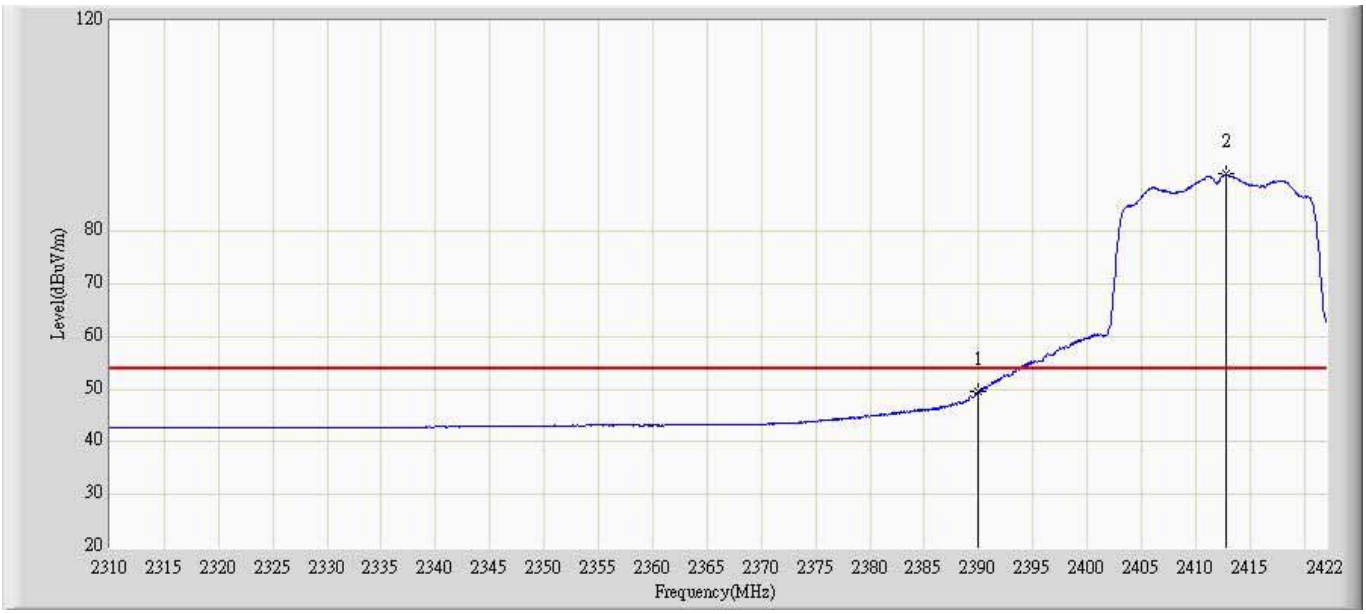
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.728	87.107	56.173	N/A	N/A	30.933	AV
2			2483.500	45.588	14.603	-8.412	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 1	



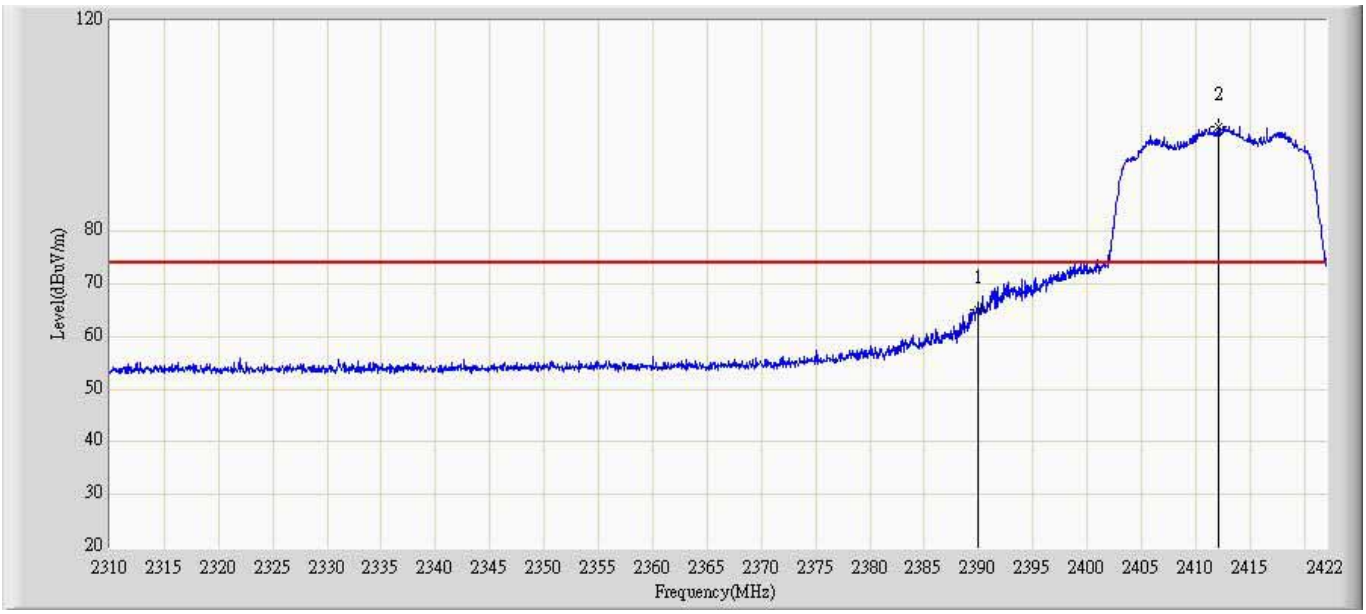
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	65.005	34.265	-8.995	74.000	30.740	PK
2		*	2412.928	101.610	70.814	N/A	N/A	30.795	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 1	



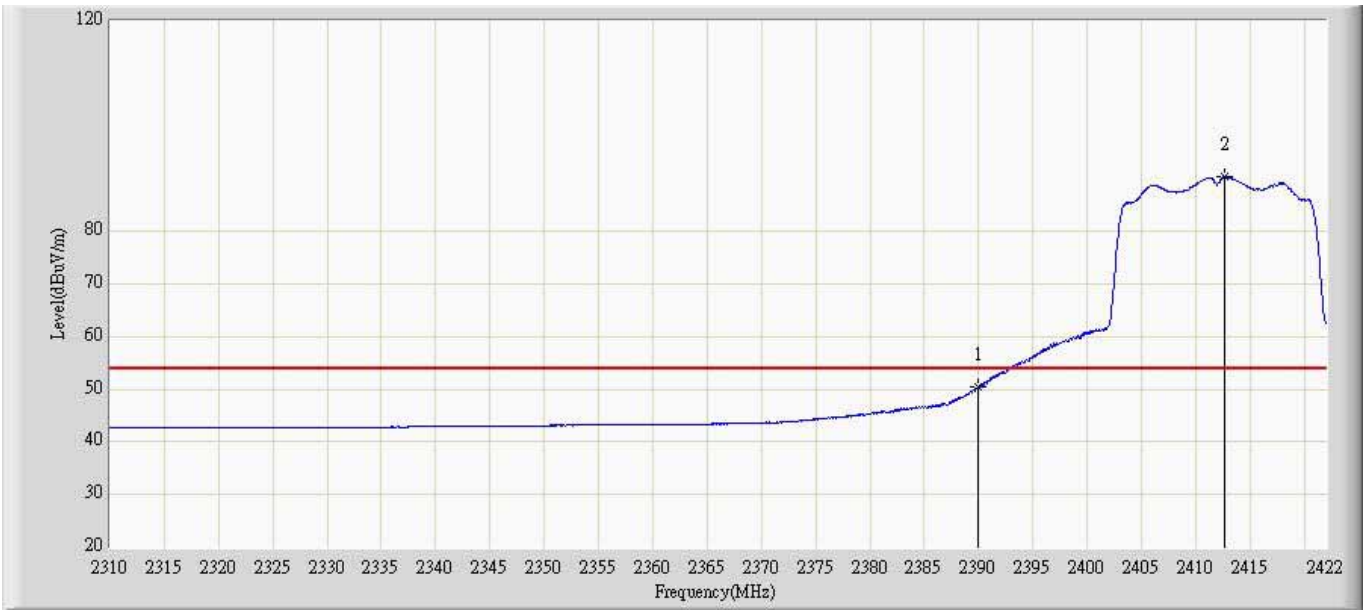
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	49.579	18.839	-4.421	54.000	30.740	AV
2		*	2412.872	90.855	60.059	N/A	N/A	30.795	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 1	



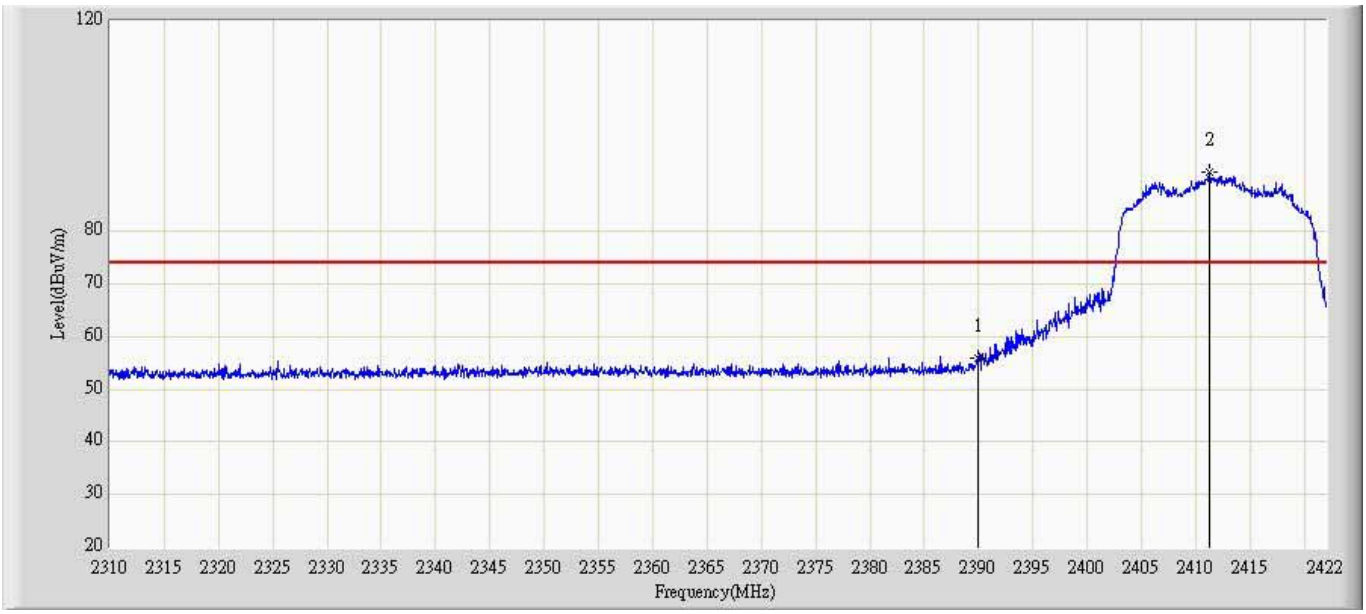
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	64.974	34.234	-9.026	74.000	30.740	PK
2		*	2412.144	99.850	69.057	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:16
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 1	



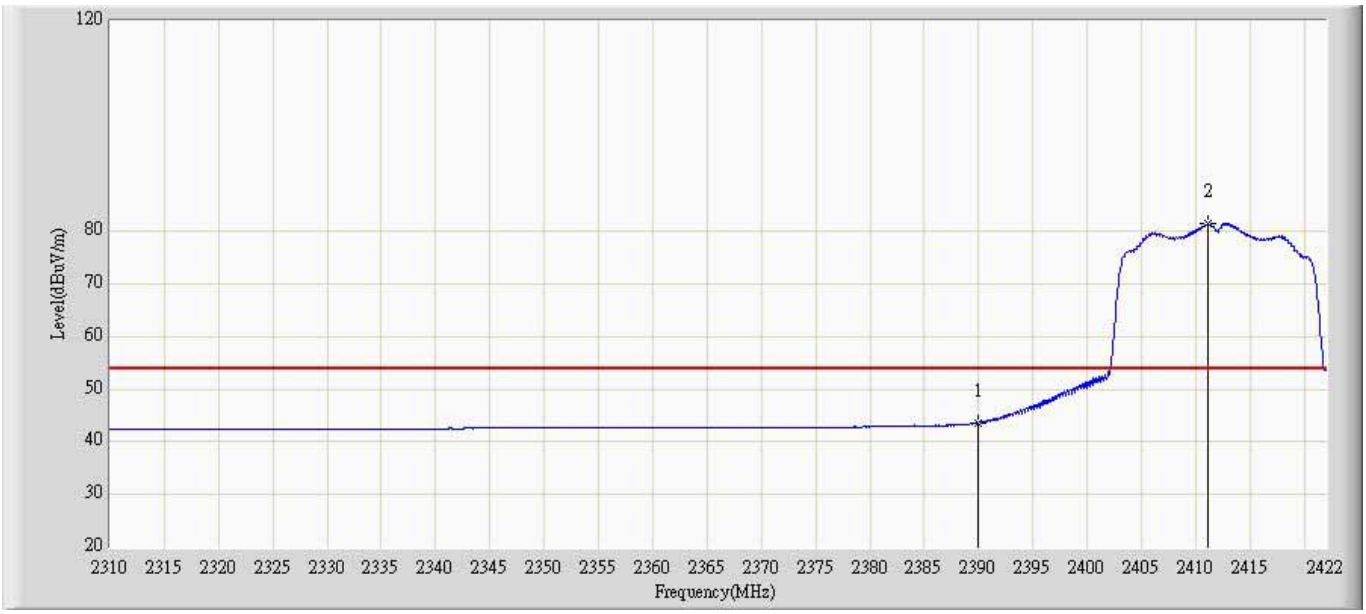
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.392	19.652	-3.608	54.000	30.740	AV
2		*	2412.648	90.387	59.592	N/A	N/A	30.795	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 2	



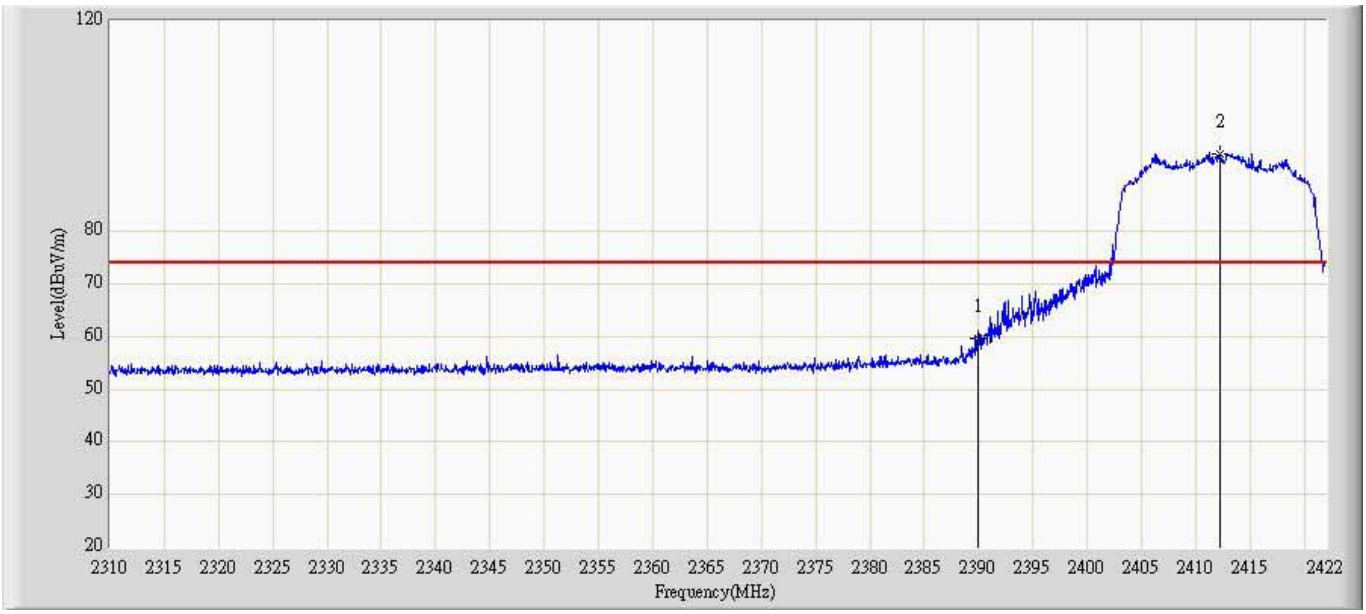
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	55.848	25.108	-18.152	74.000	30.740	PK
2		*	2411.304	91.137	60.346	N/A	N/A	30.791	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:20
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 2	



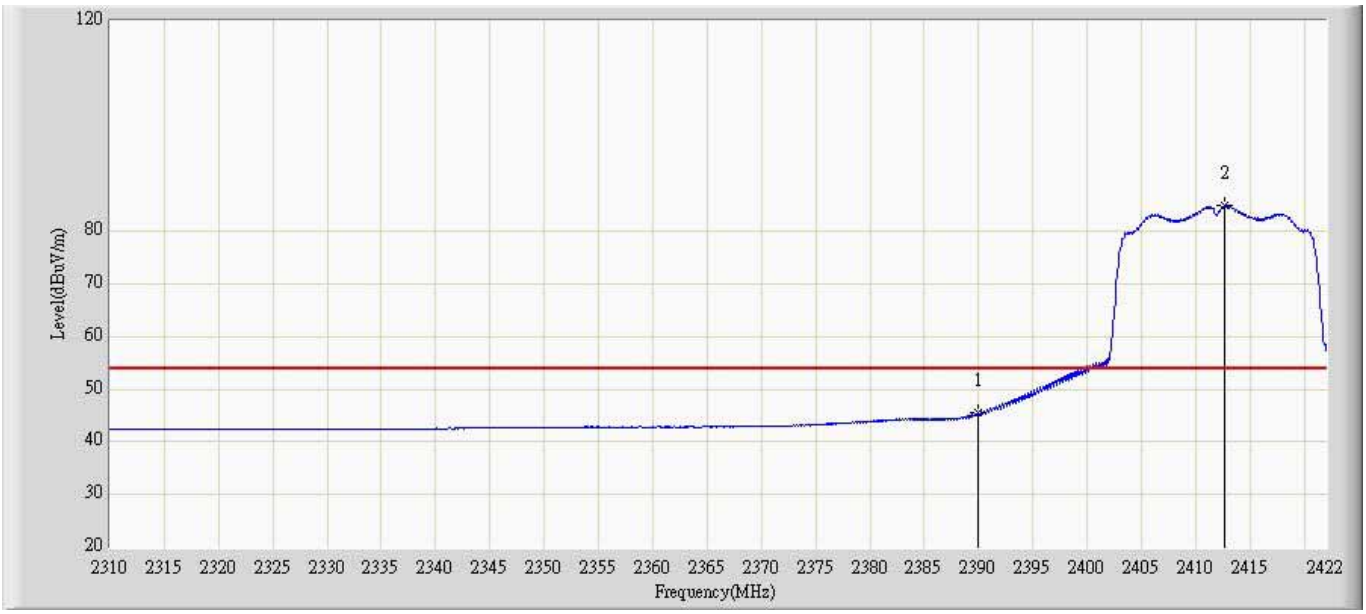
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	43.605	12.865	-10.395	54.000	30.740	AV
2		*	2411.136	81.507	50.717	N/A	N/A	30.790	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:26
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 2	



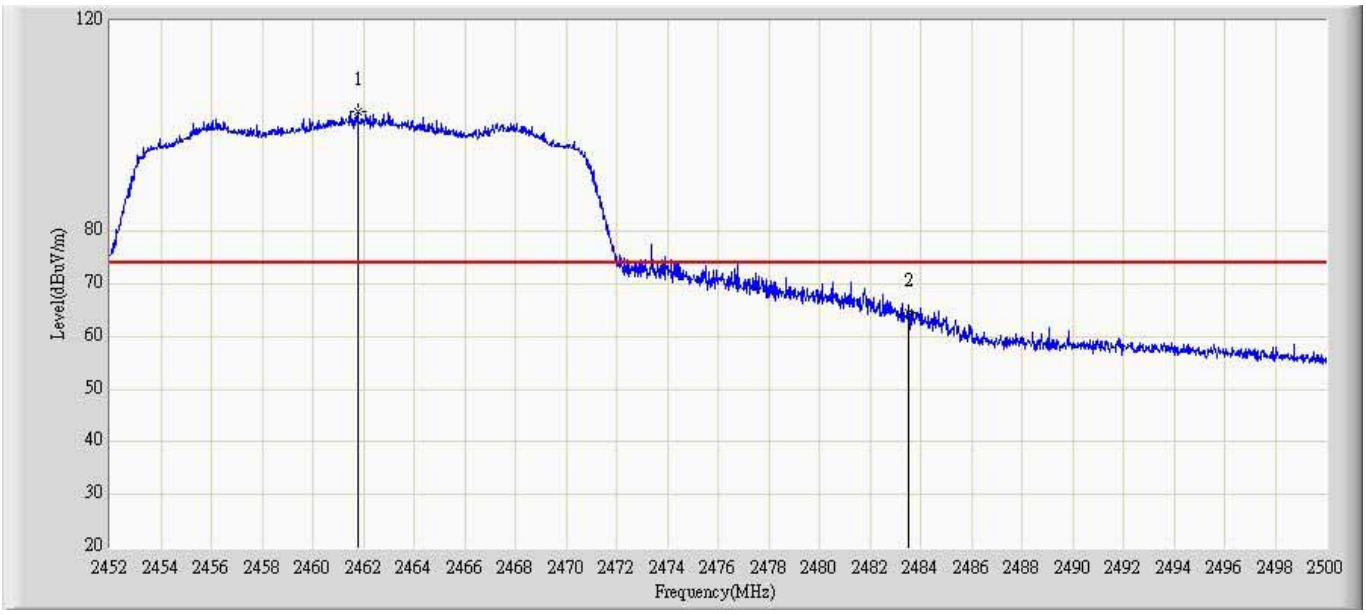
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	59.742	29.002	-14.258	74.000	30.740	PK
2		*	2412.200	94.705	63.911	N/A	N/A	30.793	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz chain 2	



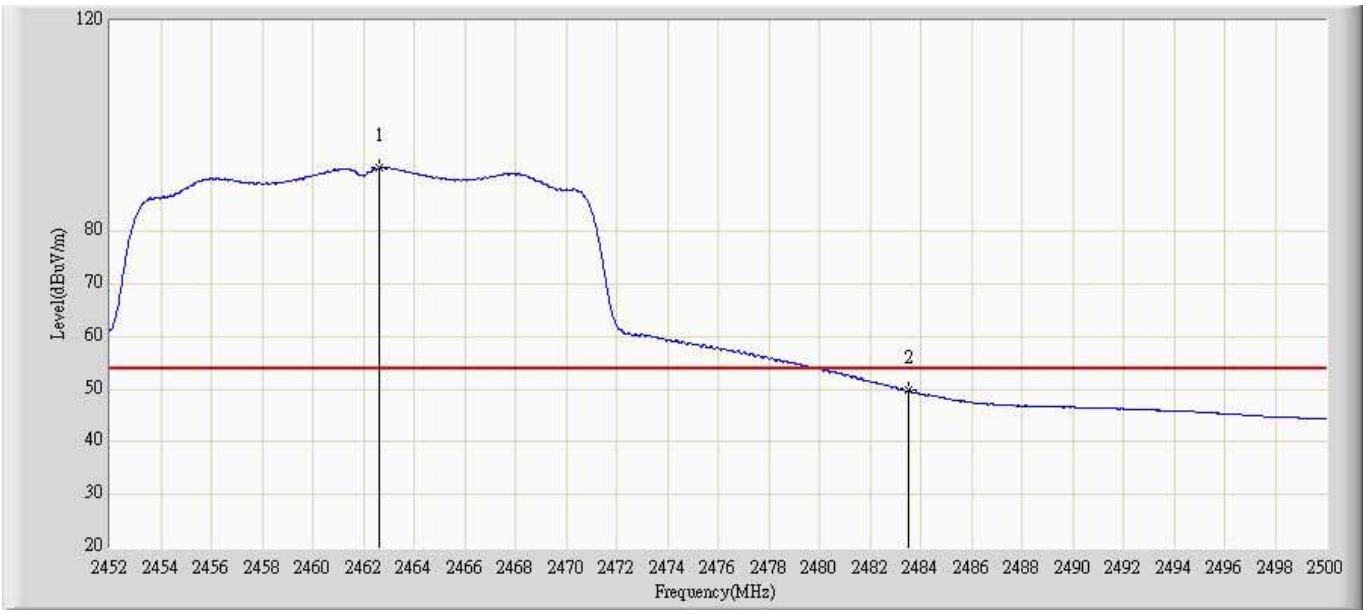
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	45.481	14.741	-8.519	54.000	30.740	AV
2		*	2412.704	84.858	54.063	N/A	N/A	30.795	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 1	



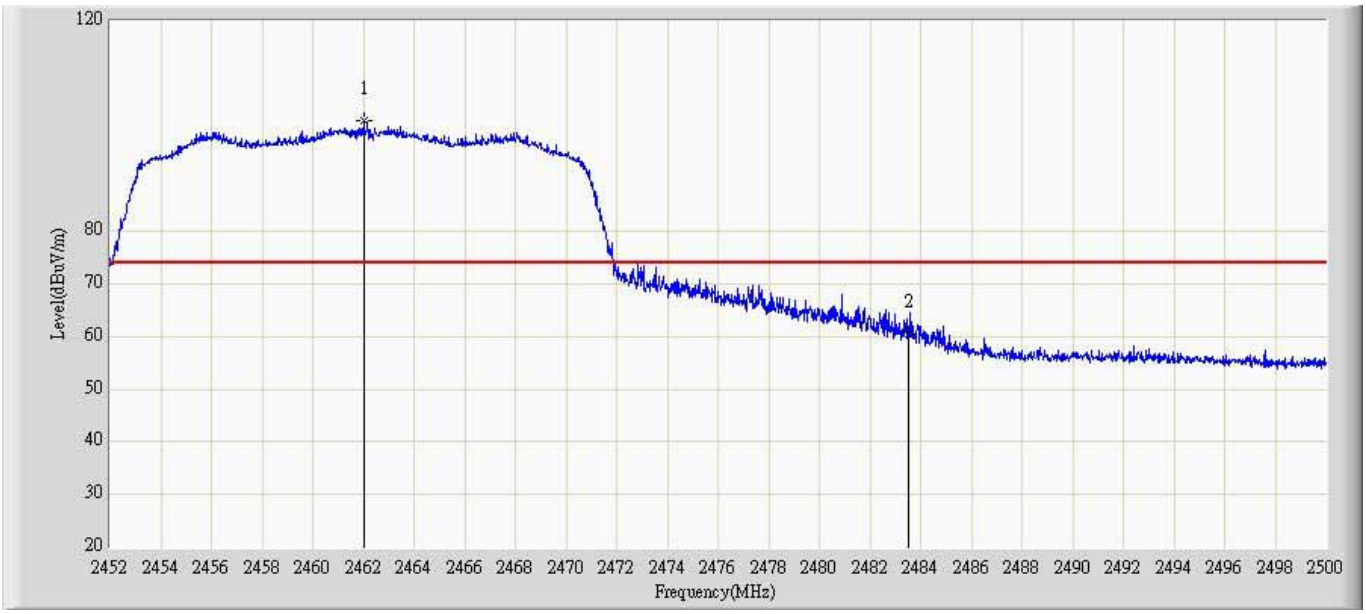
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.768	102.700	71.769	N/A	N/A	30.932	PK
2			2483.500	64.513	33.528	-9.487	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 1	



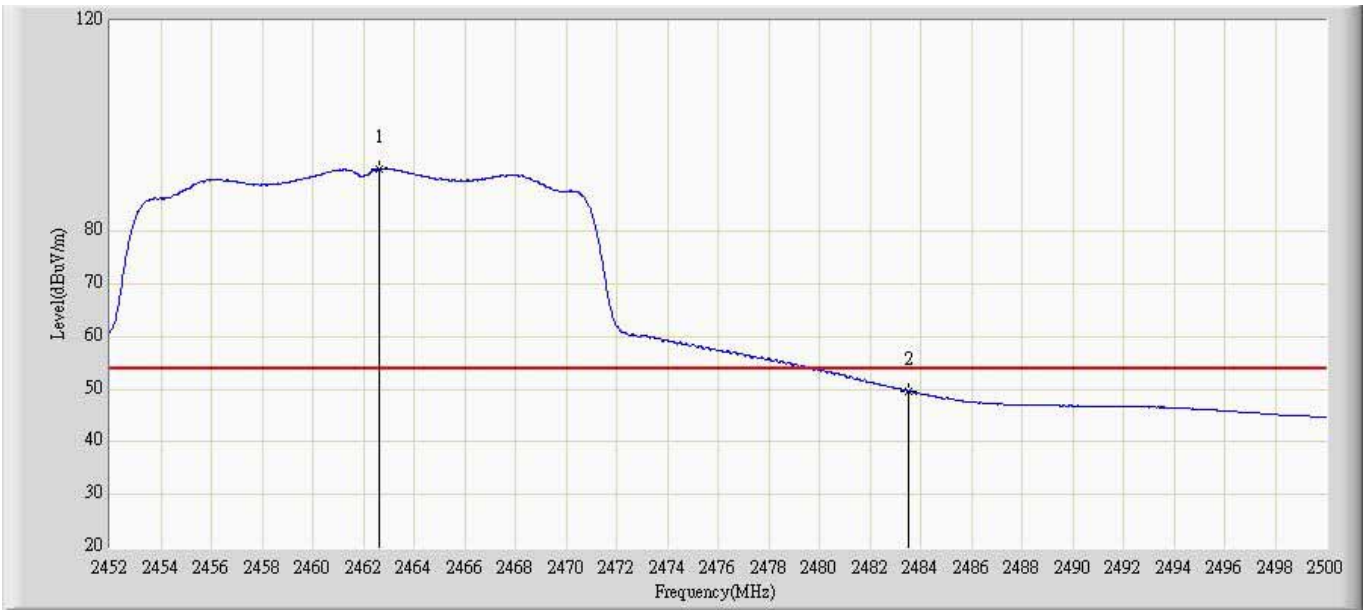
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.656	92.026	61.092	N/A	N/A	30.933	AV
2			2483.500	49.746	18.761	-4.254	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:33
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 1	



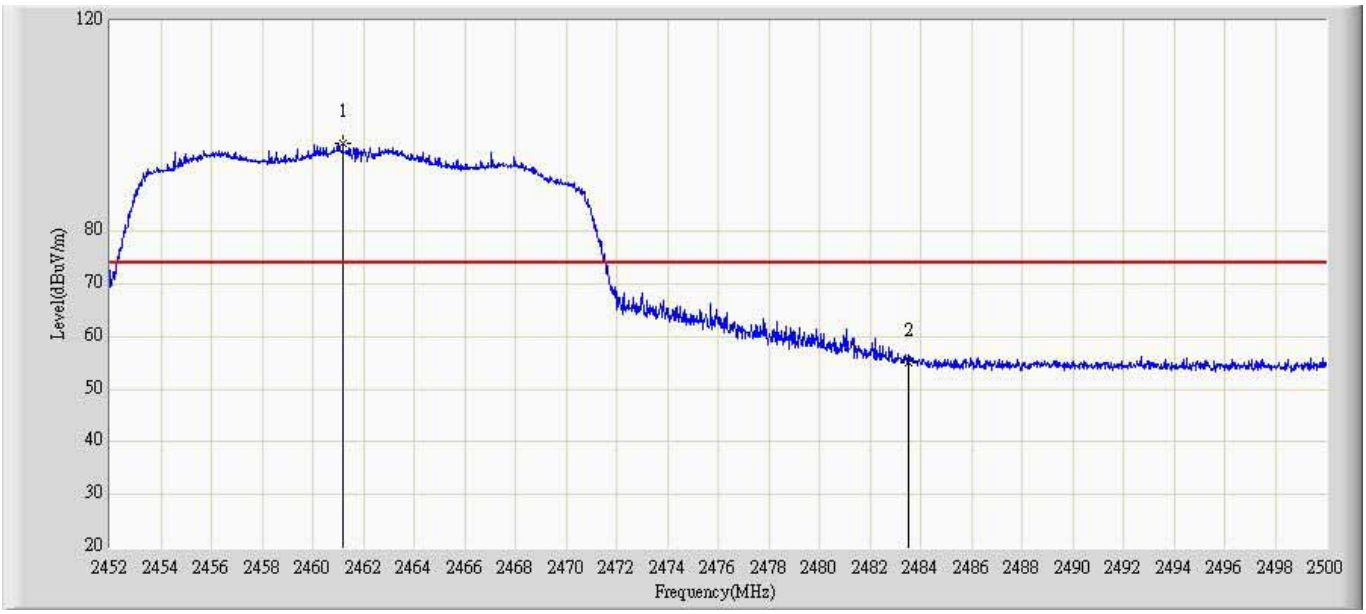
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.008	101.013	70.081	N/A	N/A	30.932	PK
2			2483.500	60.657	29.672	-13.343	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:34
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 1	



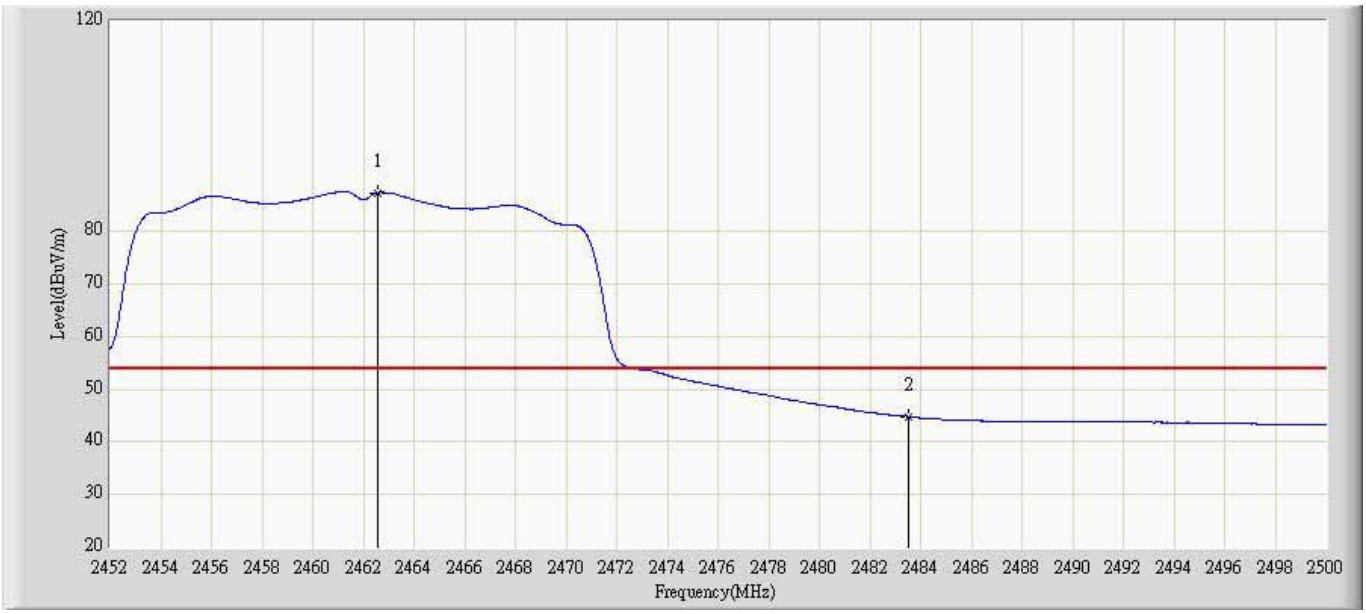
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.656	91.901	60.967	N/A	N/A	30.933	AV
2			2483.500	49.578	18.593	-4.422	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 2	



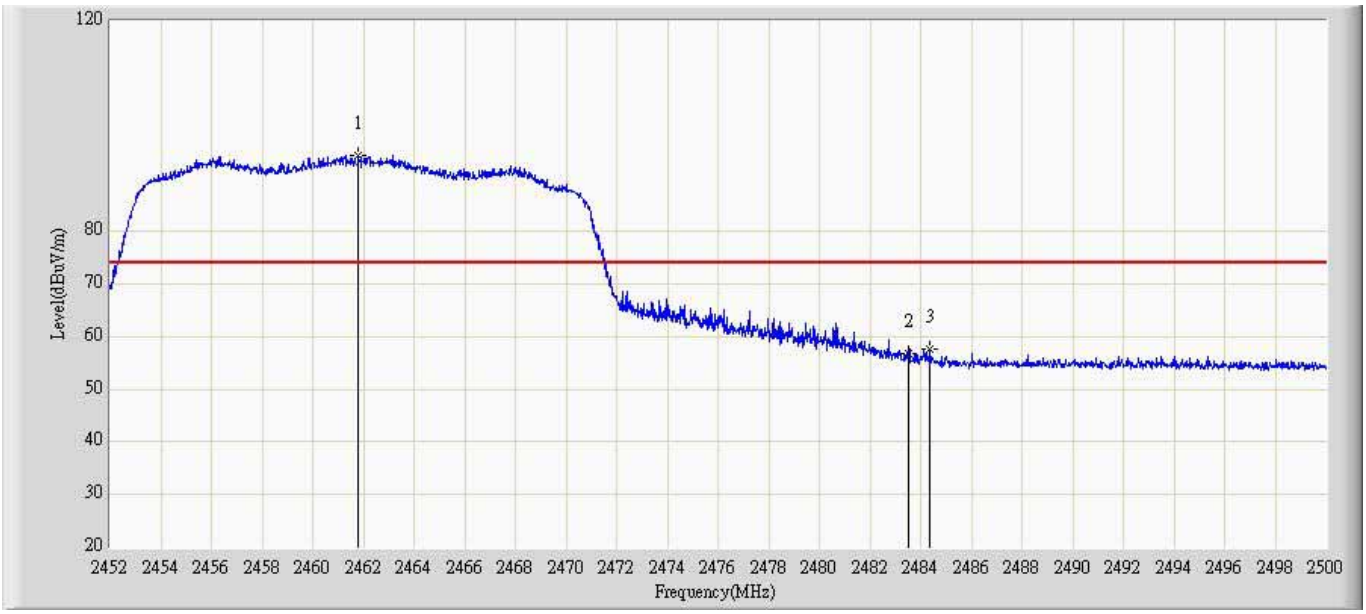
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.192	96.796	65.866	N/A	N/A	30.930	PK
2			2483.500	54.971	23.986	-19.029	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:38
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 2	



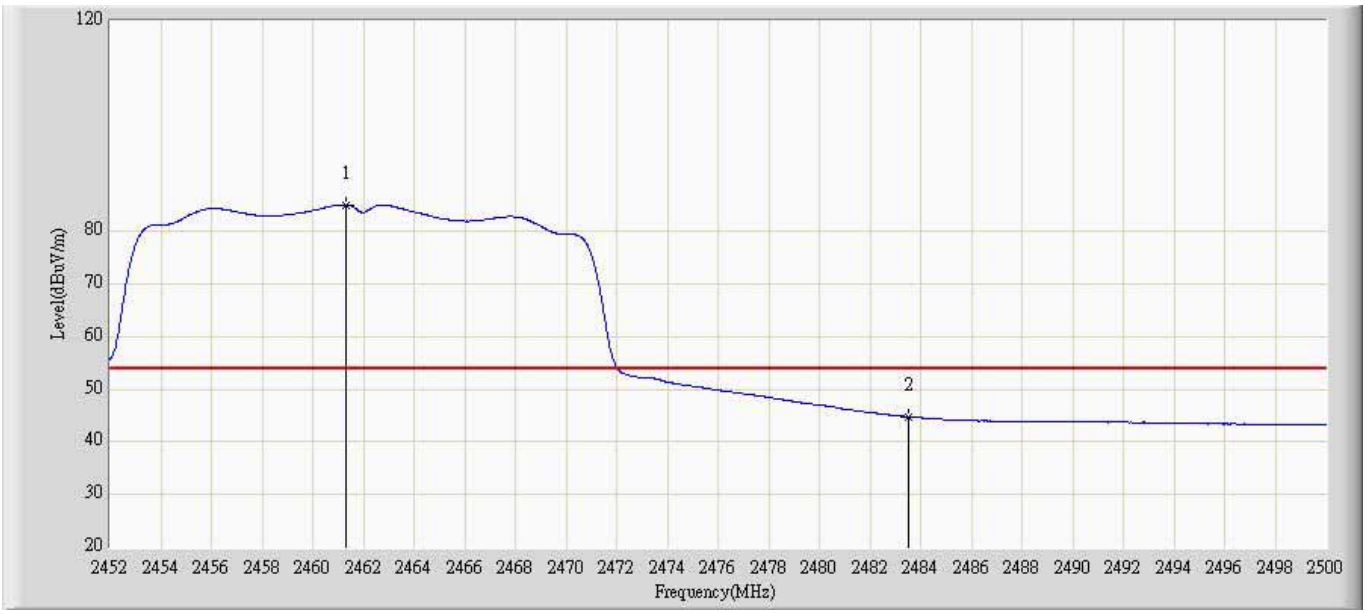
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.584	87.324	56.391	N/A	N/A	30.933	AV
2			2483.500	44.801	13.816	-9.199	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:40
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 2	



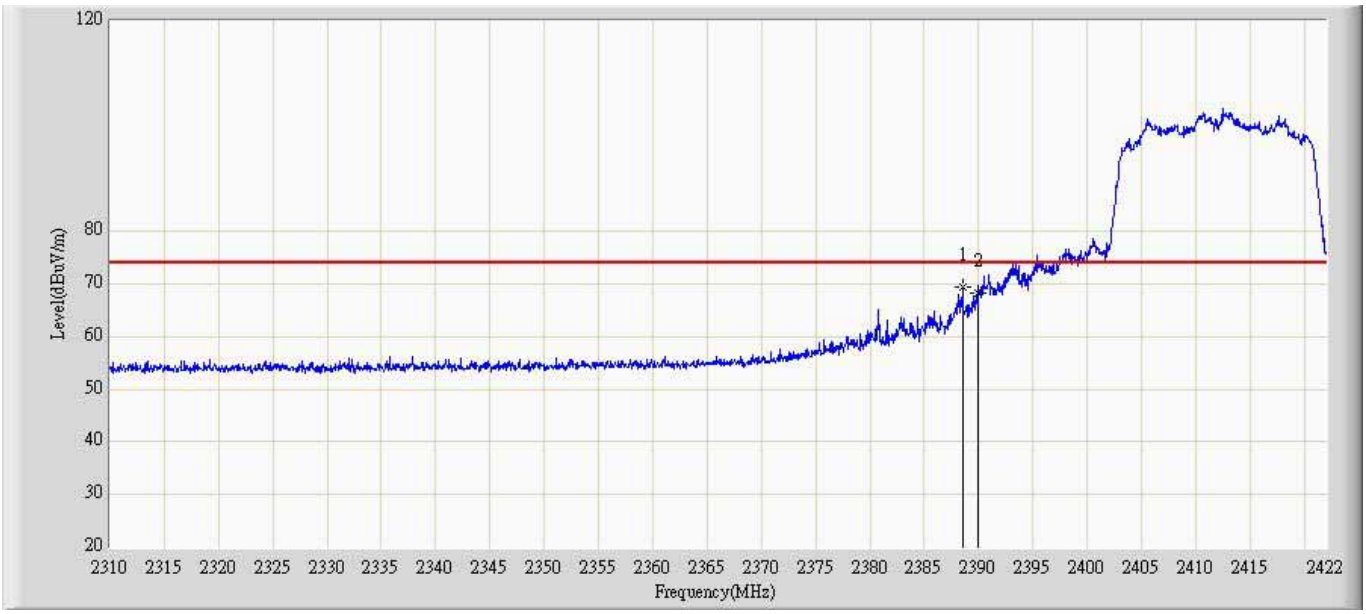
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.792	94.527	63.596	N/A	N/A	30.932	PK
2			2483.500	56.752	25.767	-17.248	74.000	30.985	PK
3			2484.376	57.579	26.591	-16.421	74.000	30.988	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:41
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz chain 2	



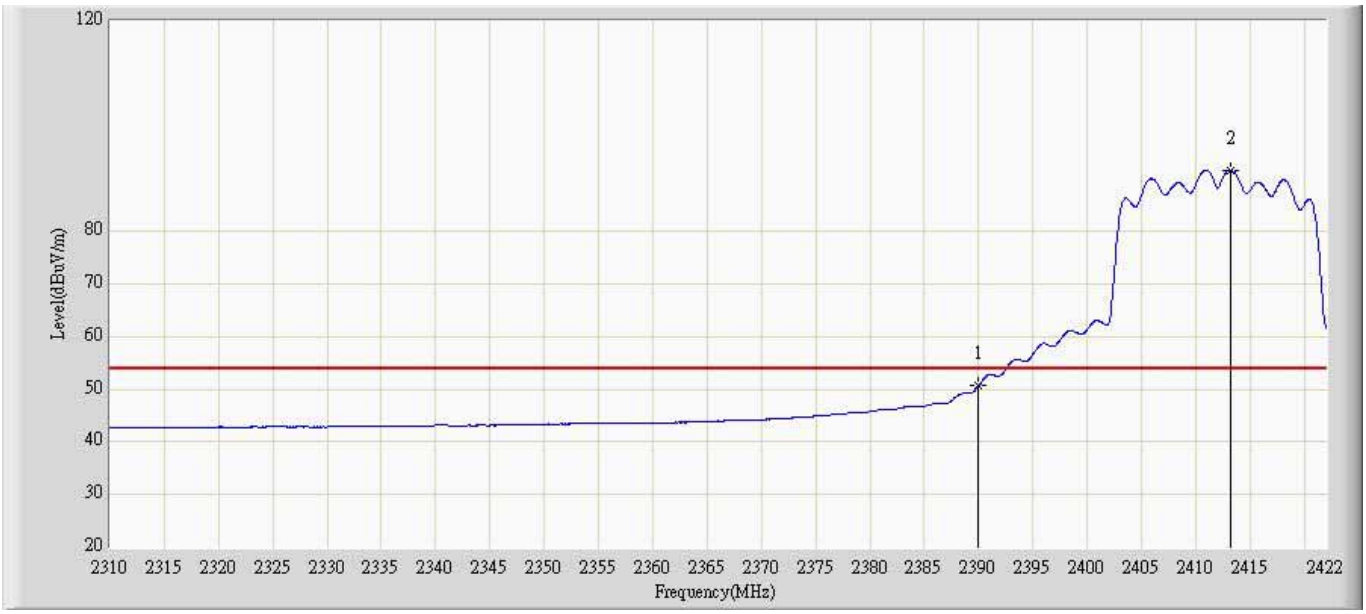
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.312	85.070	54.140	N/A	N/A	30.930	AV
2			2483.500	44.790	13.805	-9.210	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:47
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz Chain 1+2	



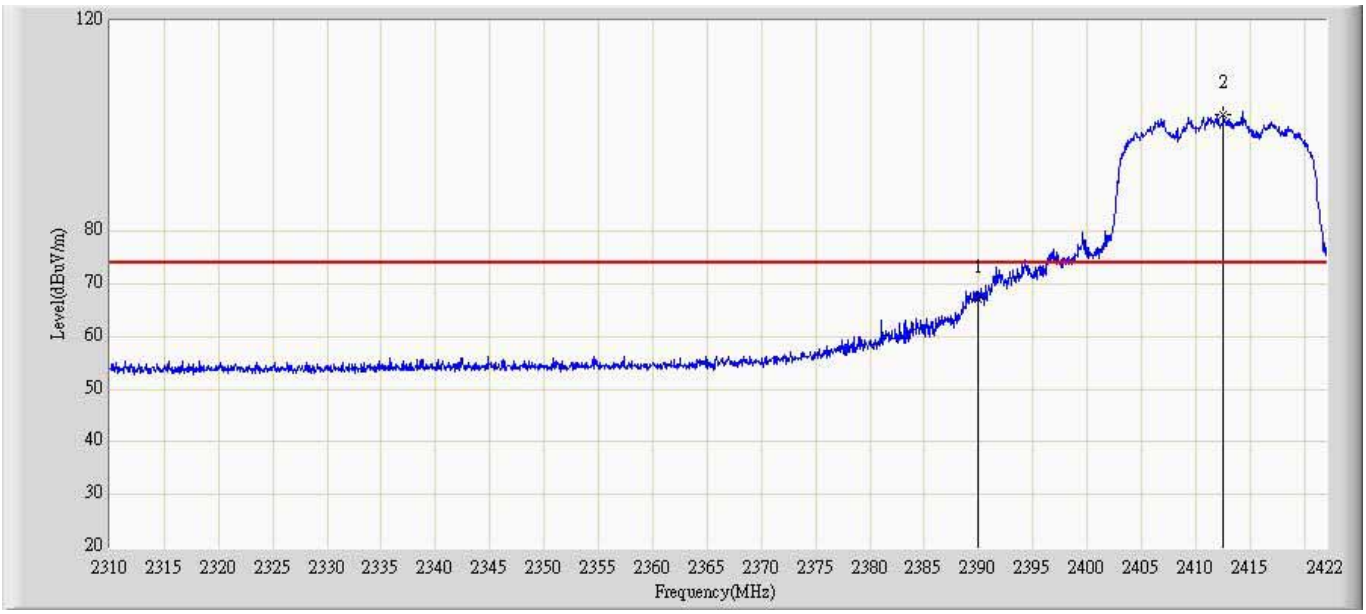
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2388.512	69.448	38.712	-4.552	74.000	30.736	PK
2			2390.000	68.375	37.635	-5.625	74.000	30.740	PK
3		*	2462.656	91.901	60.967	N/A	N/A	30.933	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:48
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz Chain 1+2	



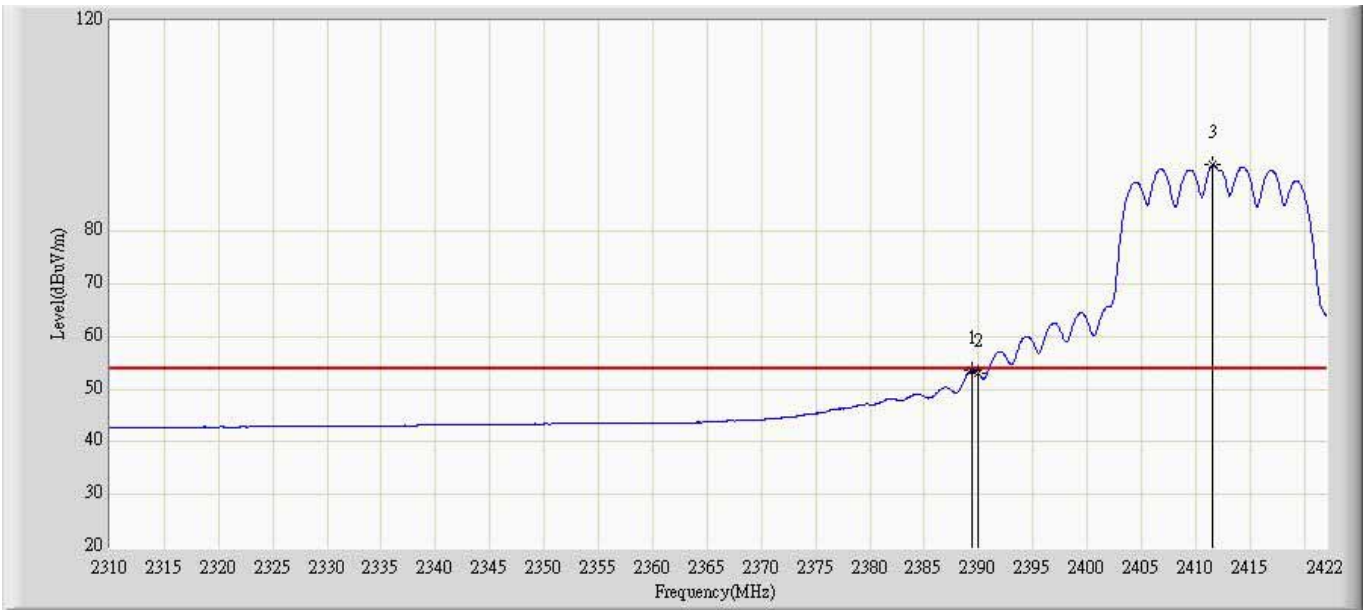
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.629	19.889	-3.371	54.000	30.740	AV
2		*	2413.208	91.632	60.836	N/A	N/A	30.797	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:50
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz Chain 1+2	



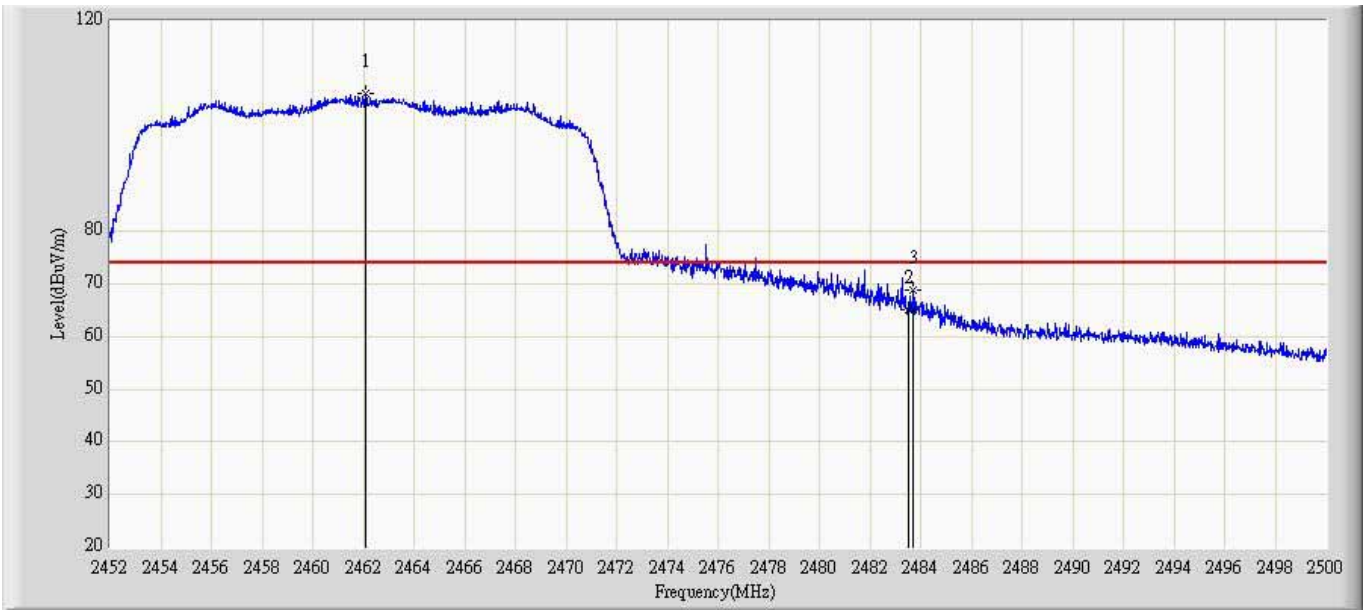
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	67.221	36.481	-6.779	74.000	30.740	PK
2		*	2412.536	102.250	71.455	N/A	N/A	30.795	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2412MHz by 802.11n20MHz Chain 1+2	



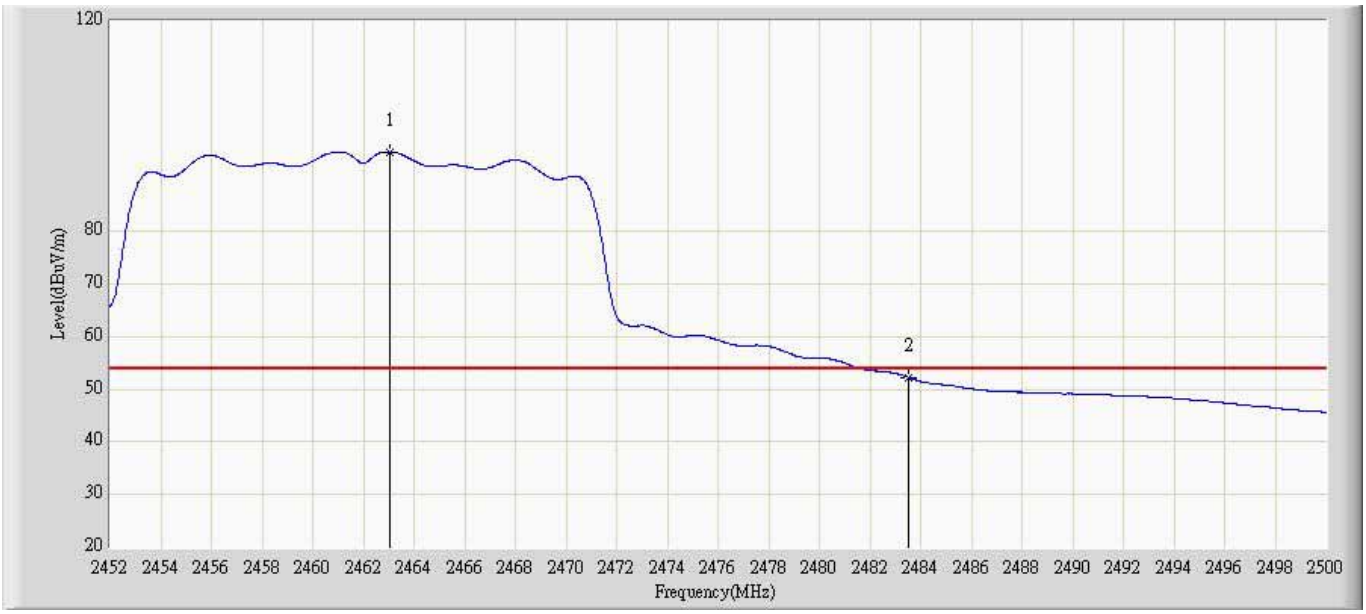
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.352	53.540	22.802	-0.460	54.000	30.738	AV
2			2390.000	52.958	22.218	-1.042	54.000	30.740	AV
3		*	2411.528	92.564	61.772	N/A	N/A	30.792	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:52
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz Chain 1+2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2462.104	106.218	75.286	N/A	N/A	30.932	PK
2			2483.500	65.087	34.102	-8.913	74.000	30.985	PK
3			2483.728	68.762	37.776	-5.238	74.000	30.987	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:55
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz Chain 1+2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2463.016	95.142	64.208	N/A	N/A	30.935	AV
2			2483.500	52.308	21.323	-1.692	54.000	30.985	AV

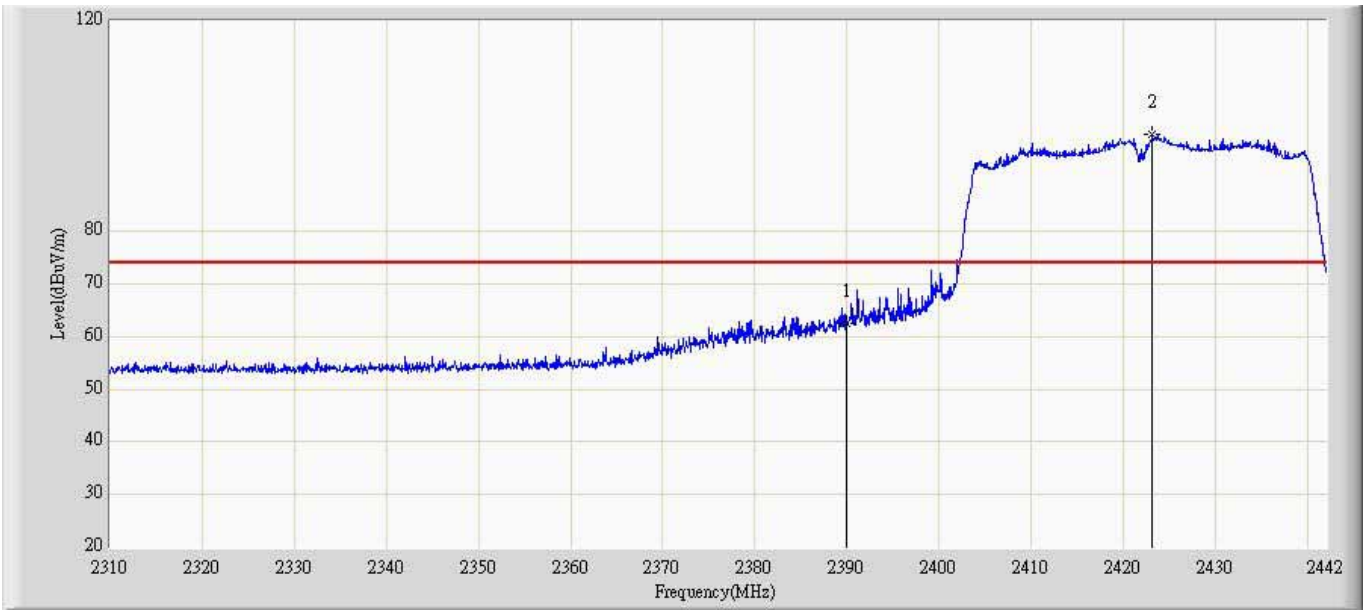
Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:56
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz Chain 1+2	

No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.480	104.179	73.249	N/A	N/A	30.930	PK
2			2483.500	64.111	33.126	-9.889	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 21:58
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode3:Transmit at channel 2462MHz by 802.11n20MHz Chain 1+2	

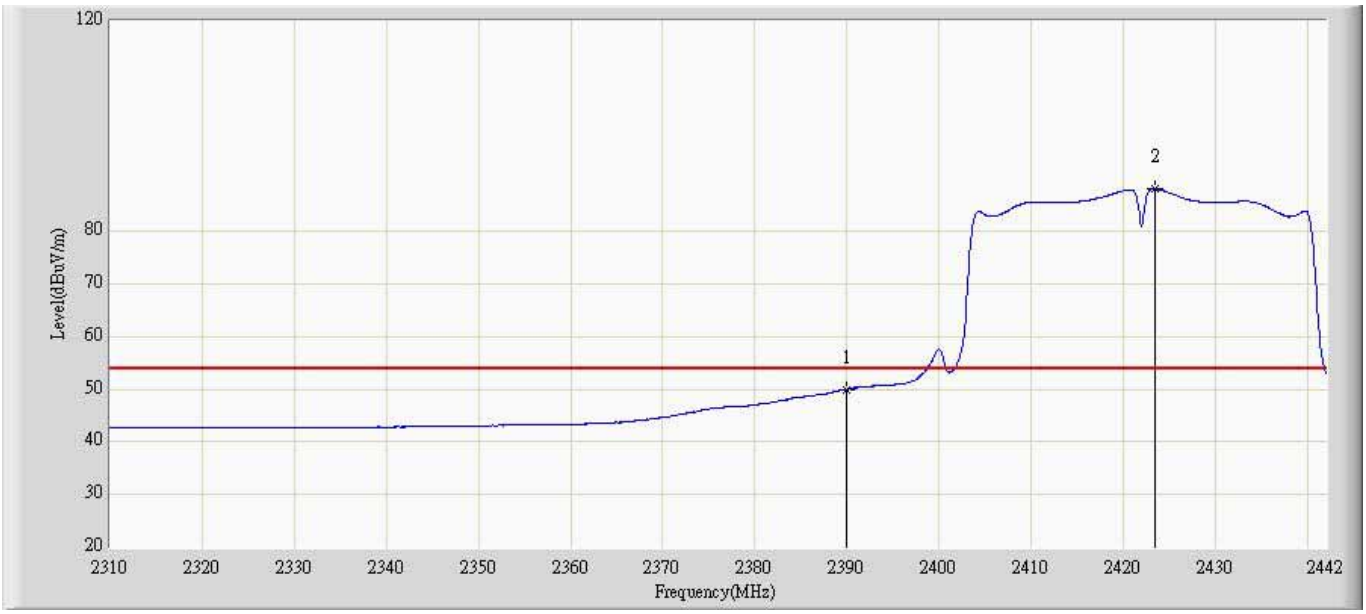
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2461.456	91.904	60.974	N/A	N/A	30.930	AV
2			2483.500	47.775	16.789	-6.225	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:04
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 1	



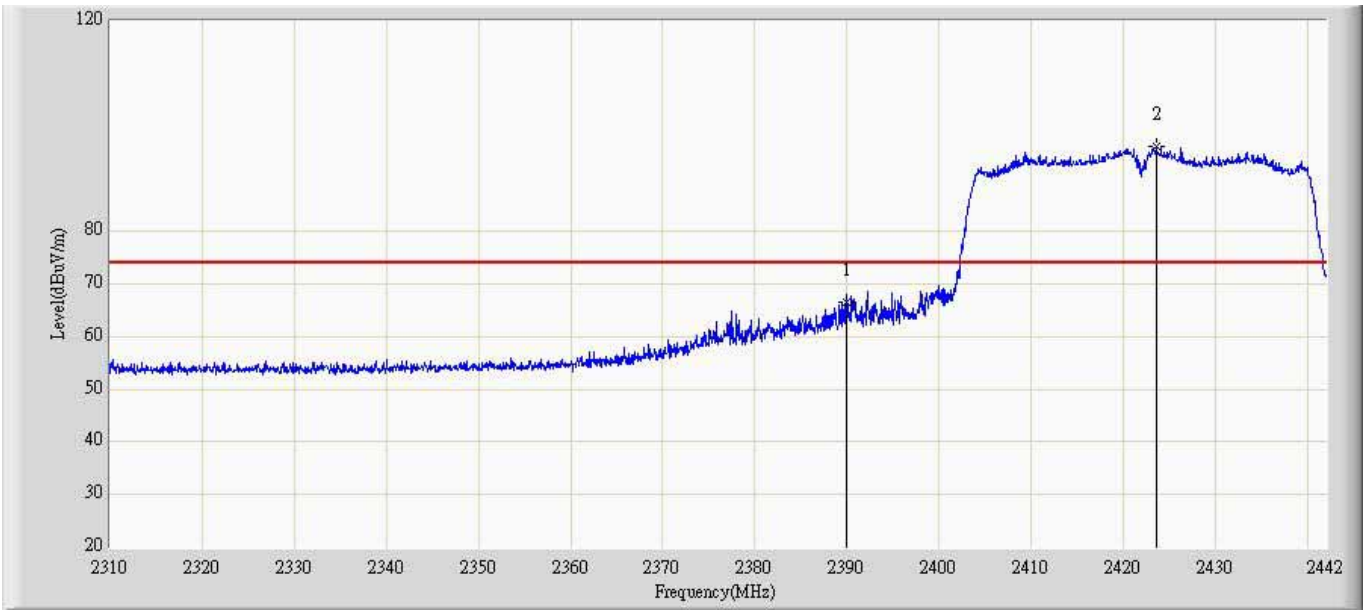
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	62.569	31.829	-11.431	74.000	30.740	PK
2		*	2423.124	98.456	67.630	N/A	N/A	30.825	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:07
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 1	



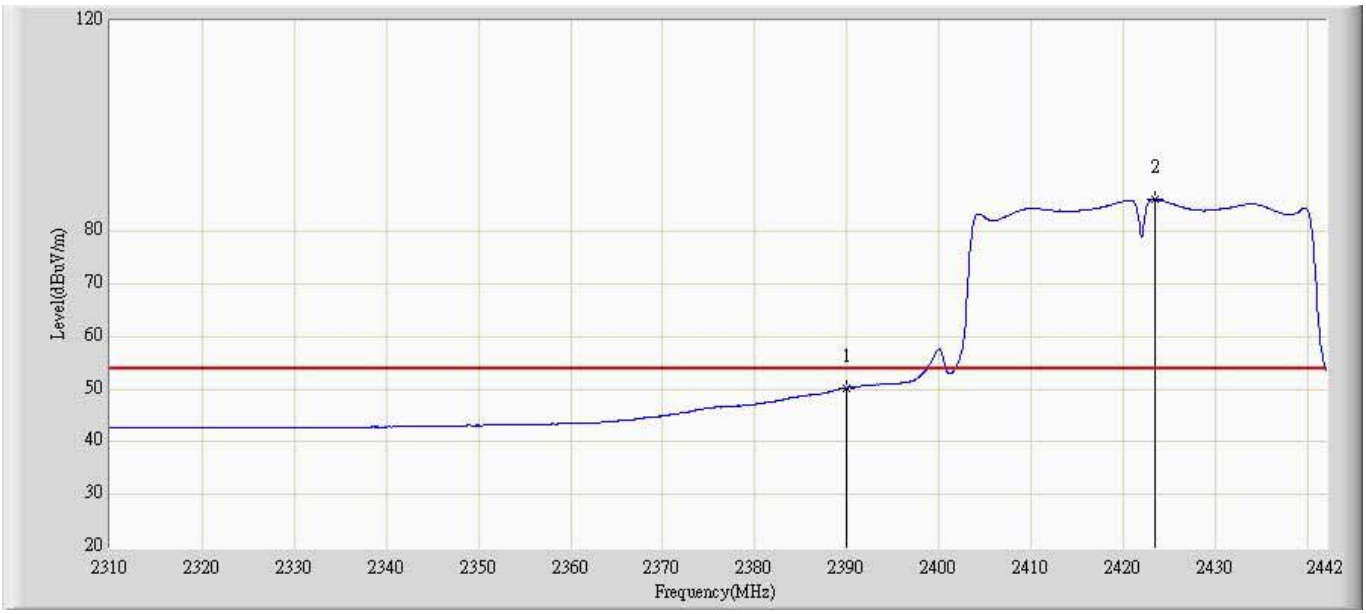
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.026	19.286	-3.974	54.000	30.740	AV
2		*	2423.454	88.067	57.240	N/A	N/A	30.827	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:10
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 1	



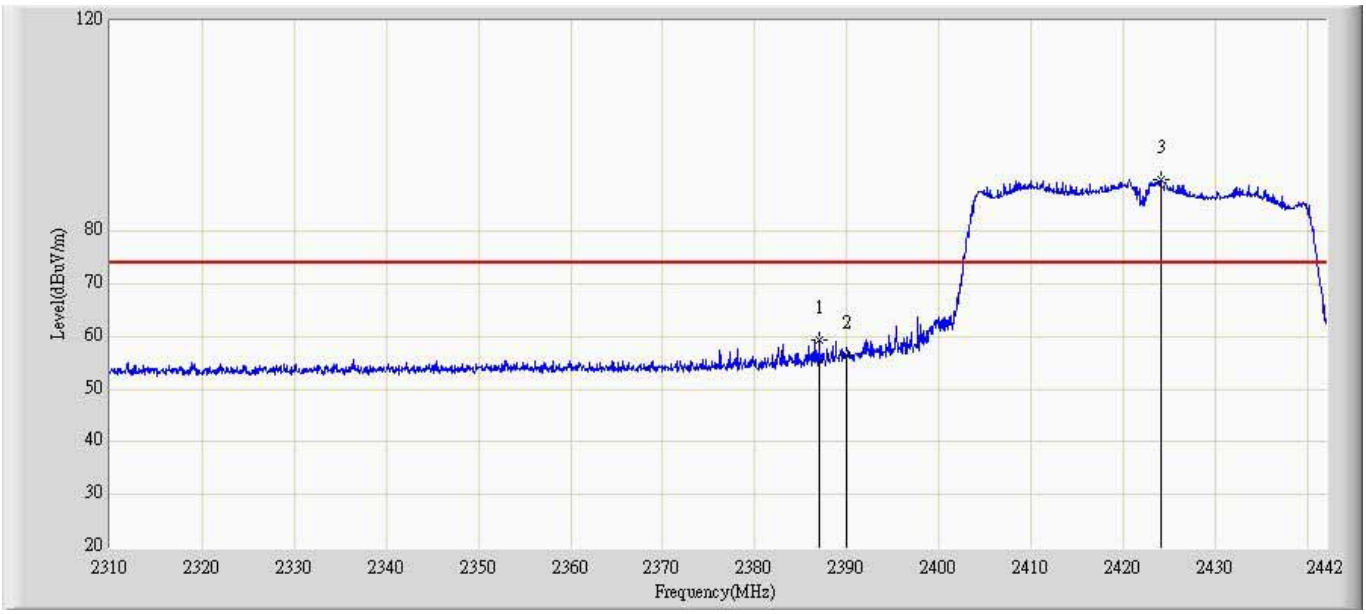
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	66.517	35.777	-7.483	74.000	30.740	PK
2		*	2423.586	96.046	65.219	N/A	N/A	30.827	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:12
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 1	



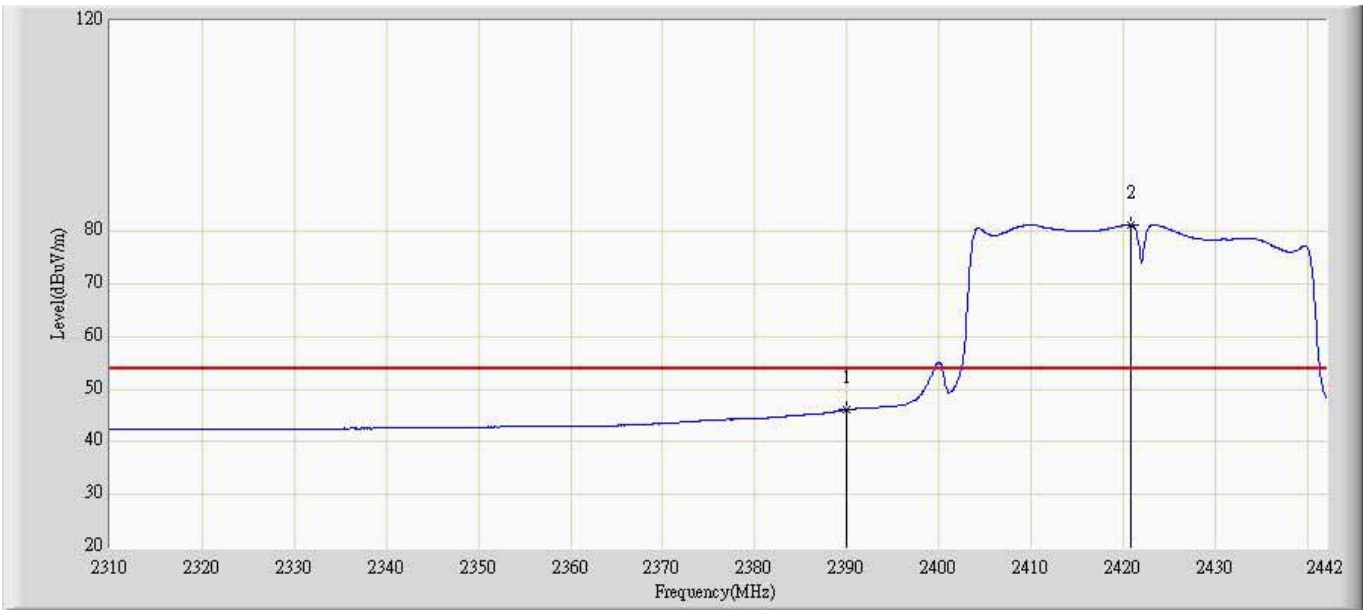
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	50.247	19.507	-3.753	54.000	30.740	AV
2		*	2423.454	86.032	55.205	N/A	N/A	30.827	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:14
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 2	



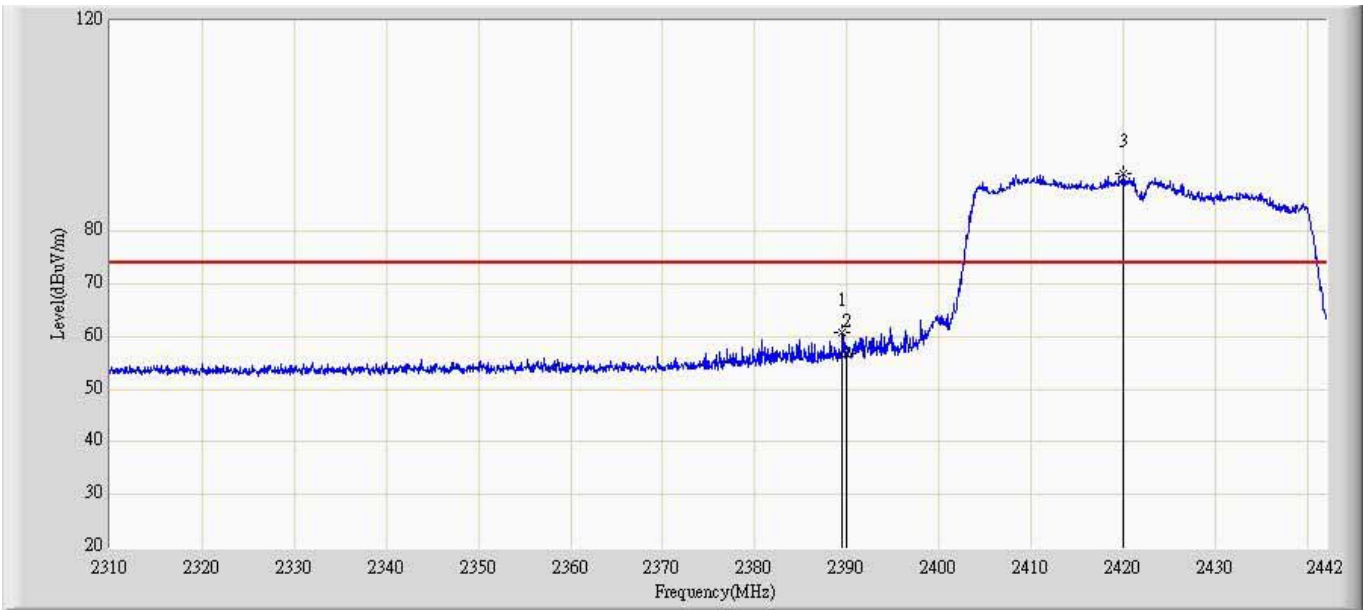
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2386.956	59.321	28.589	-14.679	74.000	30.733	PK
2			2390.000	56.442	25.702	-17.558	74.000	30.740	PK
3		*	2424.048	89.738	58.910	N/A	N/A	30.828	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:17
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 2	



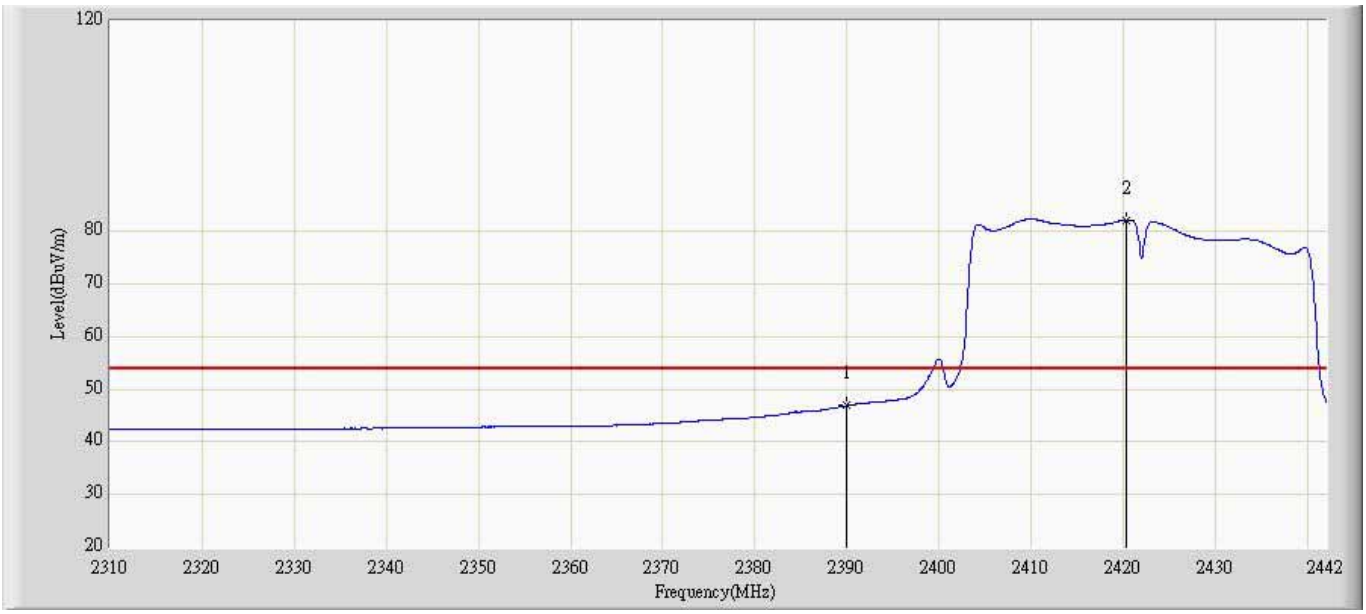
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	46.088	15.348	-7.912	54.000	30.740	AV
2		*	2420.814	81.284	50.465	N/A	N/A	30.819	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:19
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 2	



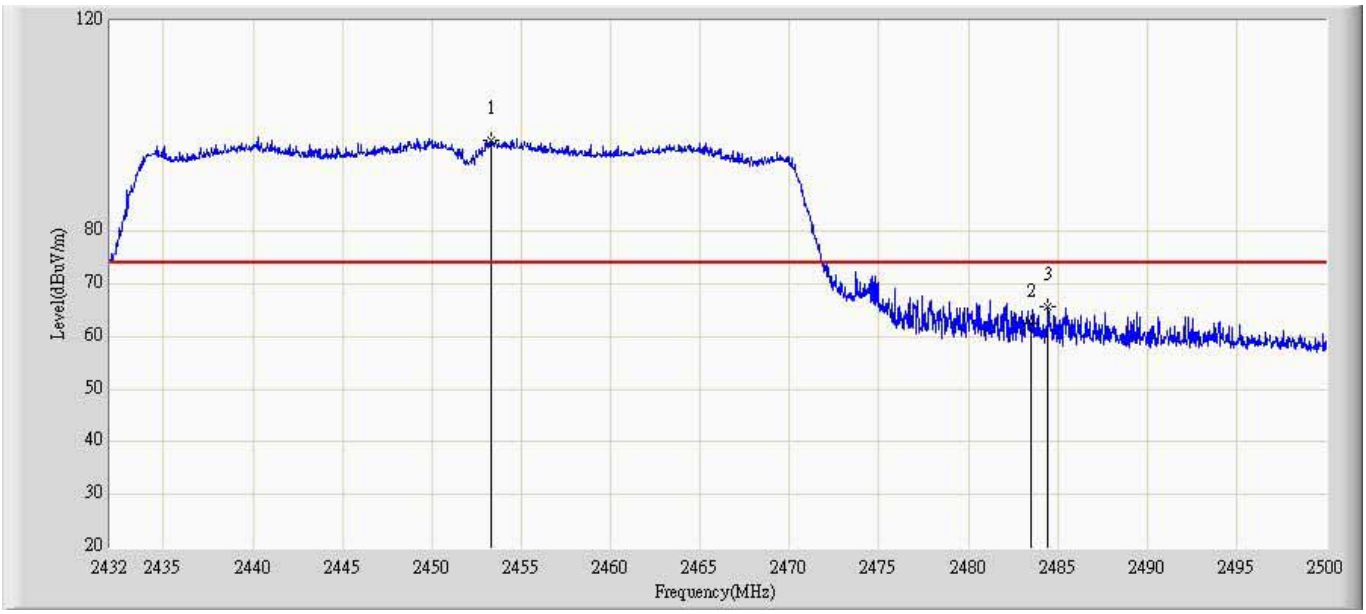
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2389.530	60.685	29.947	-13.315	74.000	30.738	PK
2			2390.000	56.713	25.973	-17.287	74.000	30.740	PK
3		*	2420.022	91.011	60.194	N/A	N/A	30.817	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:22
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz chain 2	



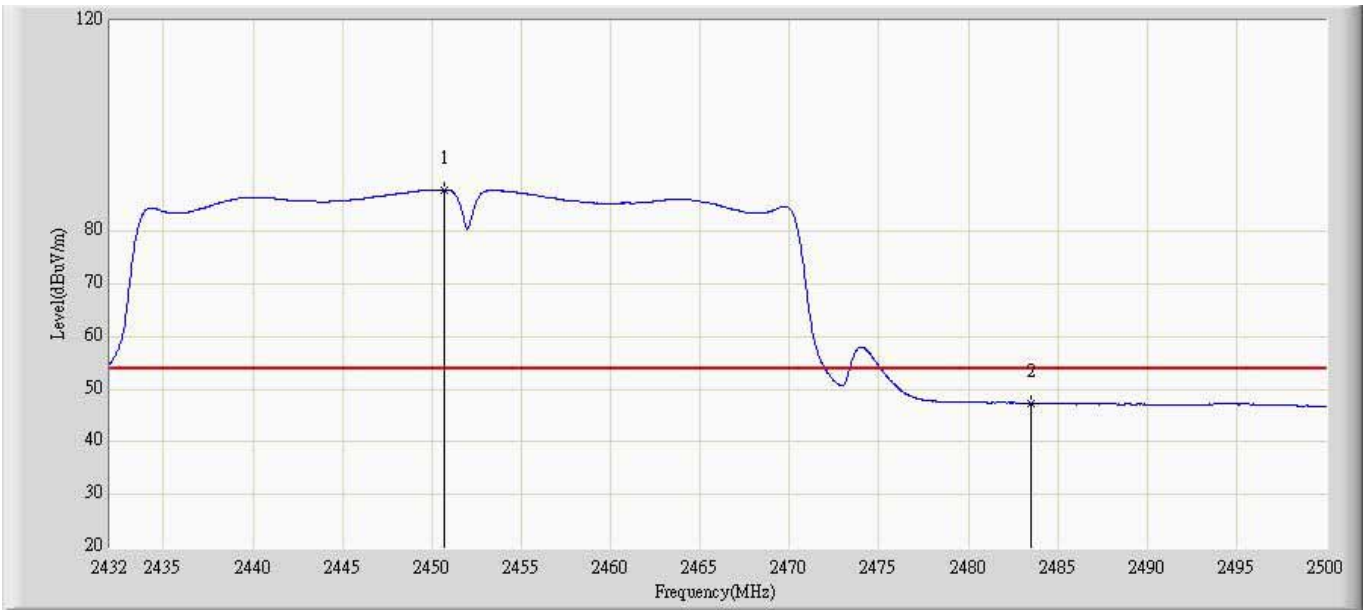
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	46.907	16.167	-7.093	54.000	30.740	AV
2		*	2420.352	82.133	51.315	N/A	N/A	30.818	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:24
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 1	



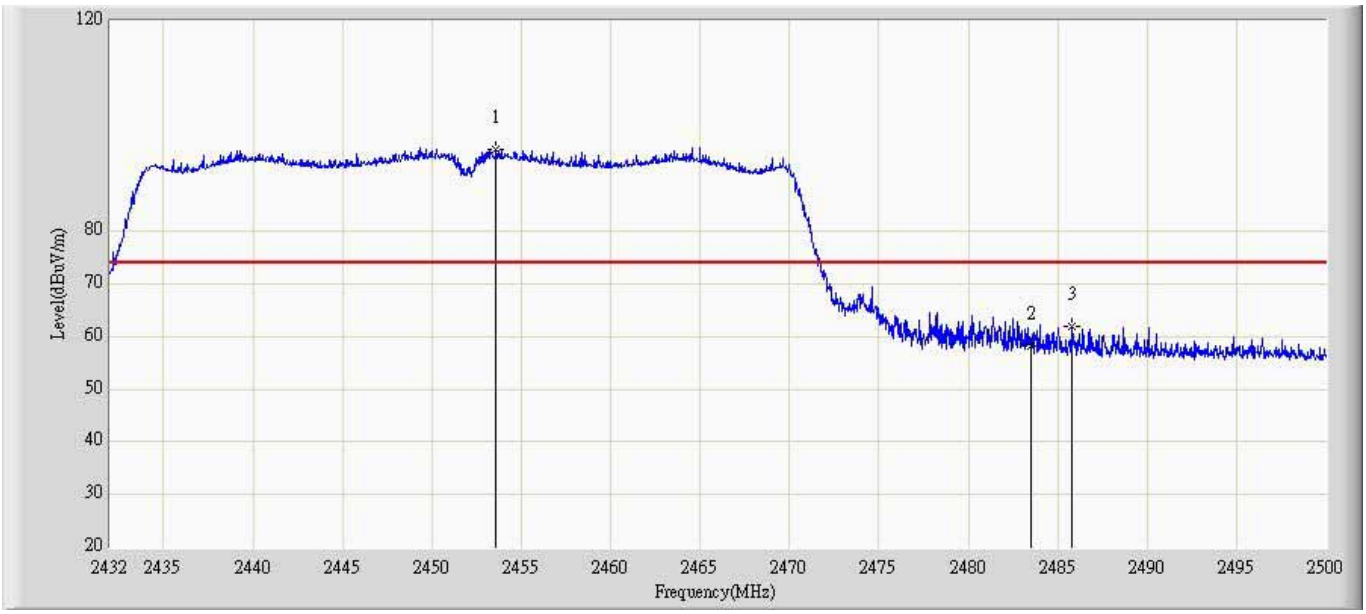
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2453.284	97.222	66.316	N/A	N/A	30.906	PK
2			2483.500	62.481	31.496	-11.519	74.000	30.985	PK
3			2484.462	65.735	34.747	-8.265	74.000	30.988	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:27
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 1	



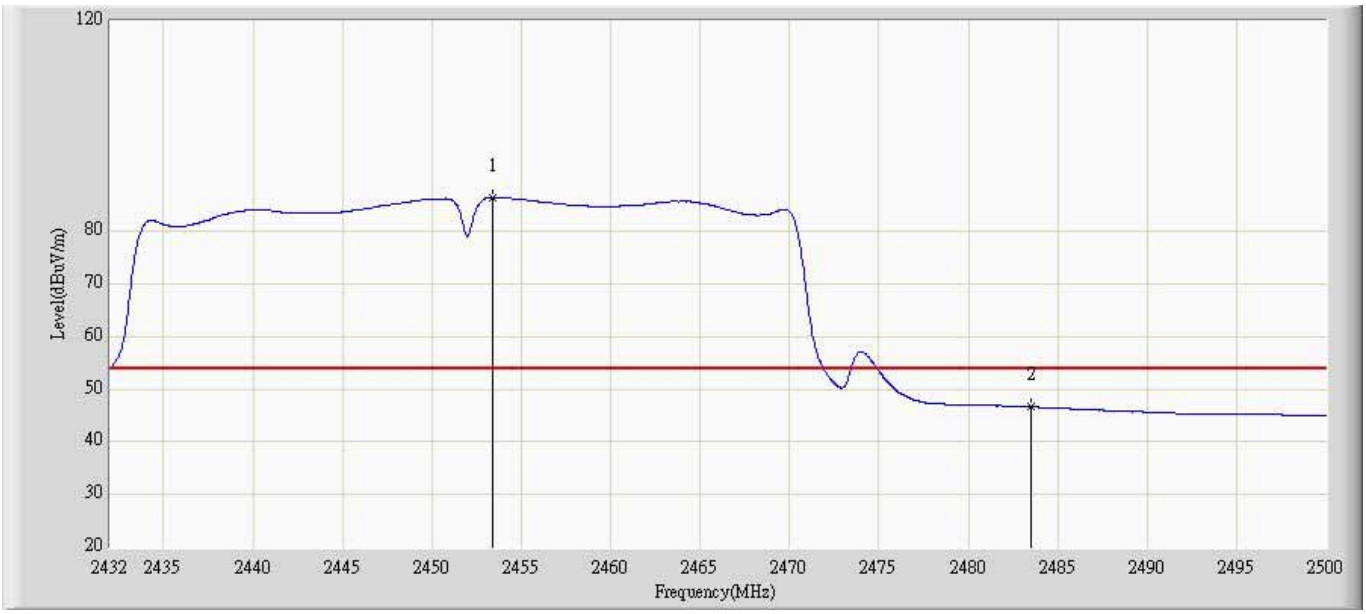
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.666	87.877	56.979	N/A	N/A	30.898	AV
2			2483.500	47.367	16.382	-6.633	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:29
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 1	



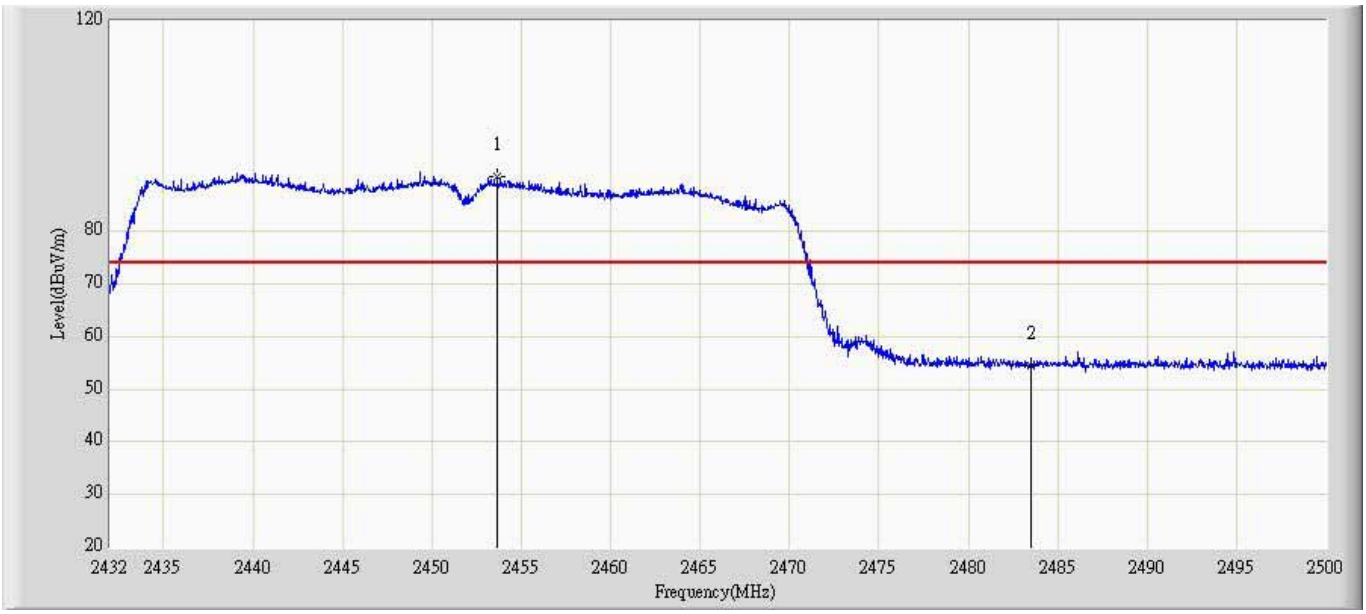
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2453.590	95.623	64.716	N/A	N/A	30.907	PK
2			2483.500	58.344	27.359	-15.656	74.000	30.985	PK
3			2485.788	62.028	31.036	-11.972	74.000	30.992	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:31
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 1	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2453.420	86.346	55.440	N/A	N/A	30.906	AV
2			2483.500	46.700	15.714	-7.300	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:32
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 2	

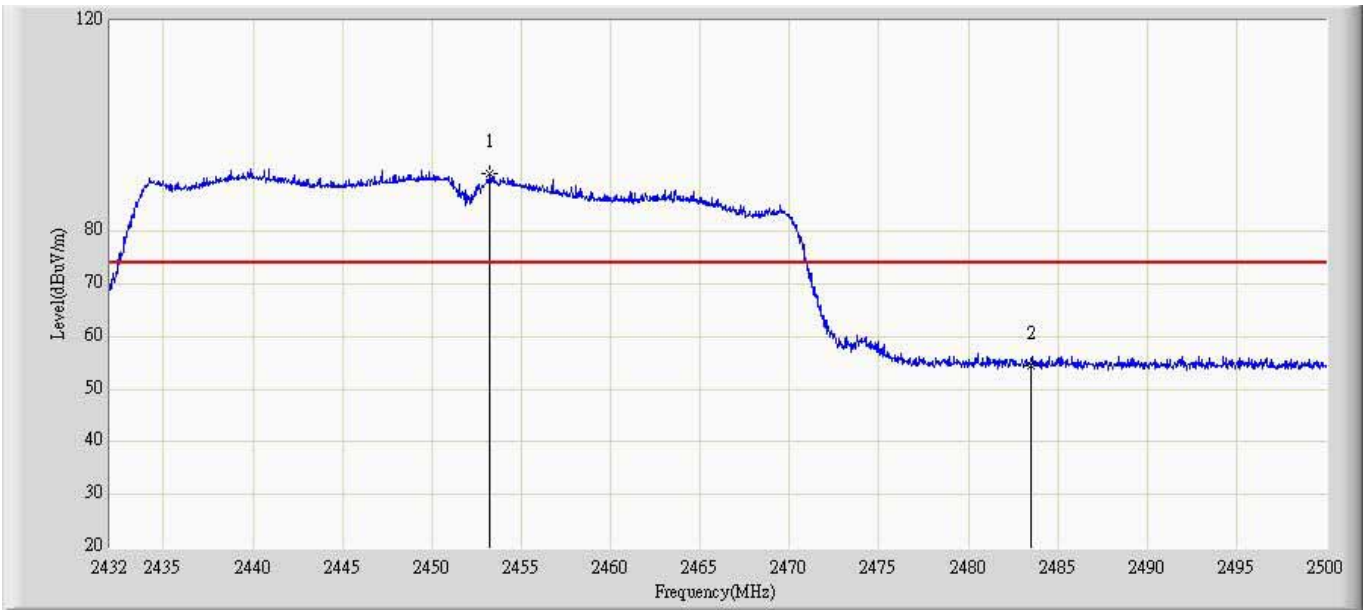


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2453.658	90.417	59.510	N/A	N/A	30.907	PK
2			2483.500	54.400	23.415	-19.600	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:35
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 2	

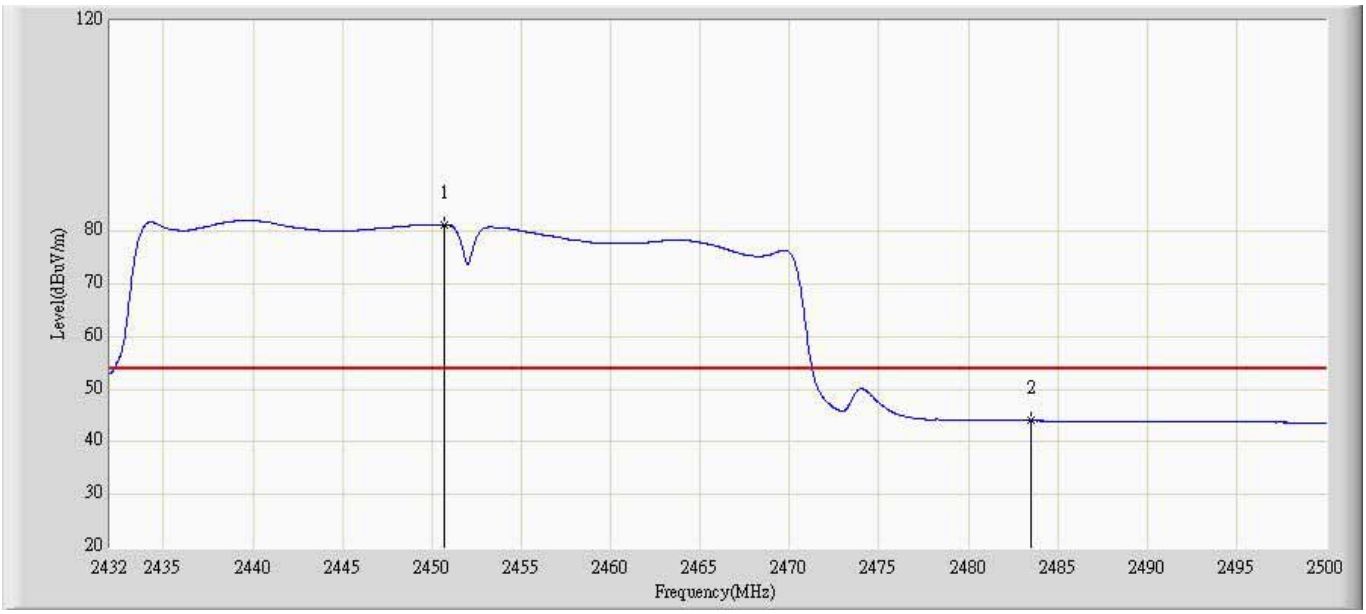
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2453.522	81.999	51.092	N/A	N/A	30.907	AV
2			2483.500	44.259	13.274	-9.741	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:36
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 2	



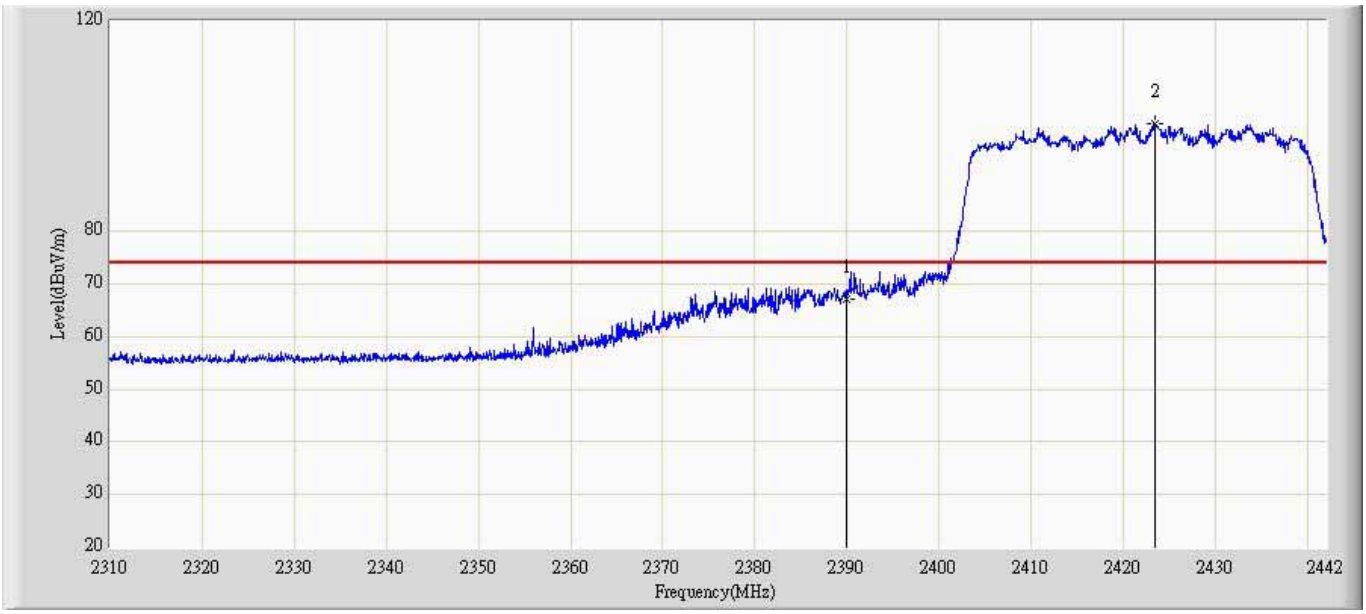
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2453.250	91.056	60.150	N/A	N/A	30.906	PK
2			2483.500	54.517	23.532	-19.483	74.000	30.985	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:37
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz chain 2	



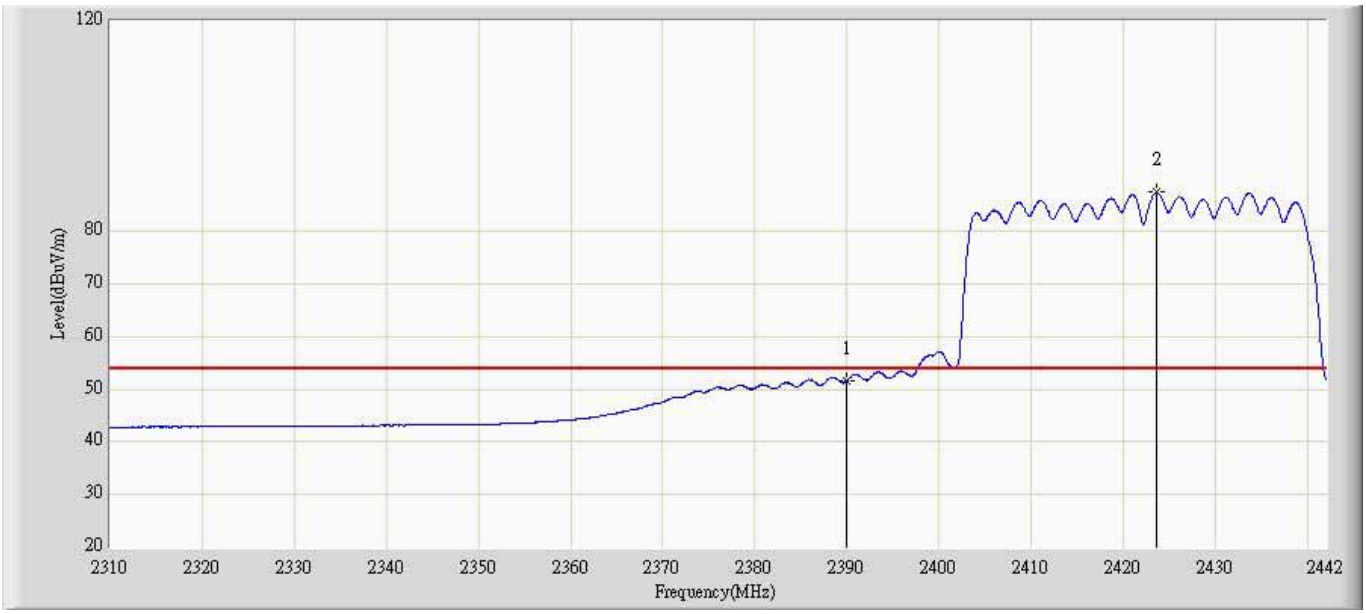
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.666	81.295	50.397	N/A	N/A	30.898	AV
2			2483.500	44.033	13.048	-9.967	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:44
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz Chain 1+2	



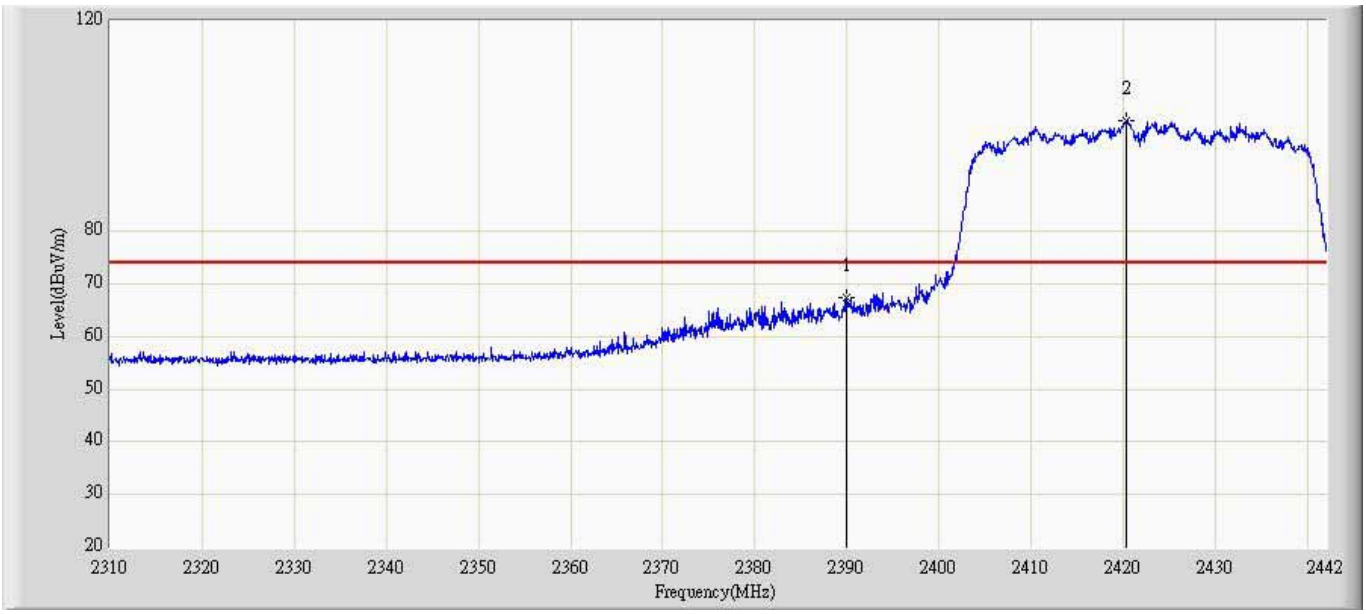
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	67.217	36.477	-6.783	74.000	30.740	PK
2		*	2423.520	100.429	69.602	N/A	N/A	30.827	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:46
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz Chain 1+2	



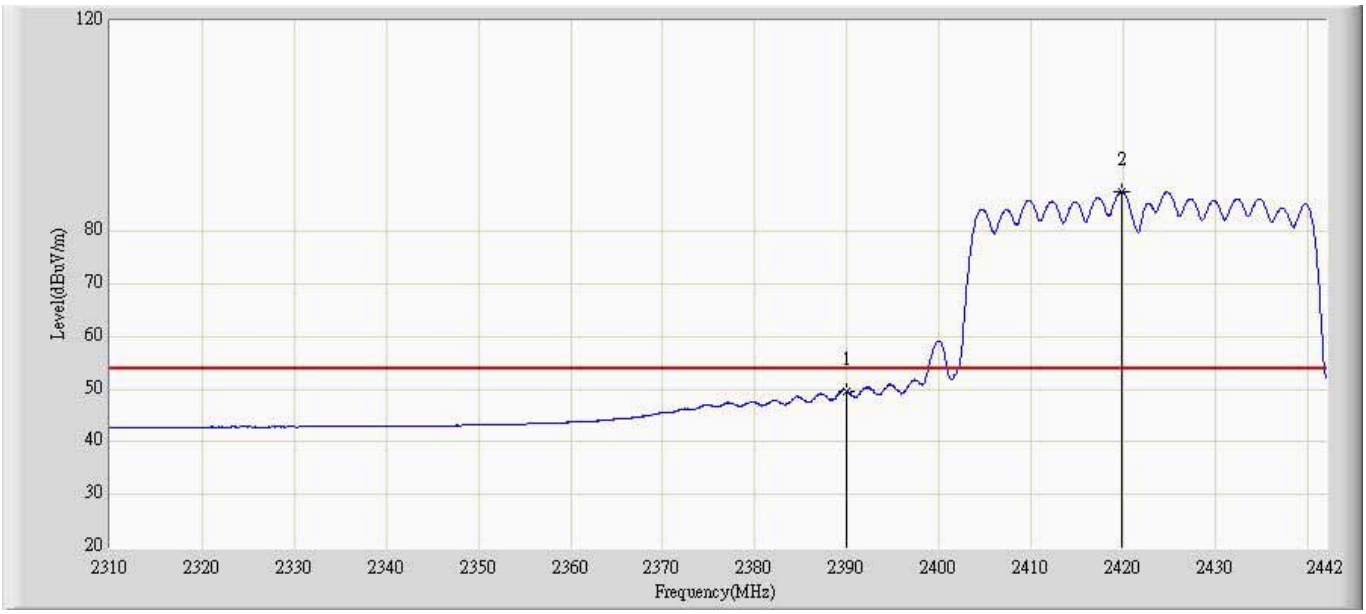
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	51.700	20.960	-2.300	54.000	30.740	AV
2		*	2423.652	87.393	56.566	N/A	N/A	30.827	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:51
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz Chain 1+2	



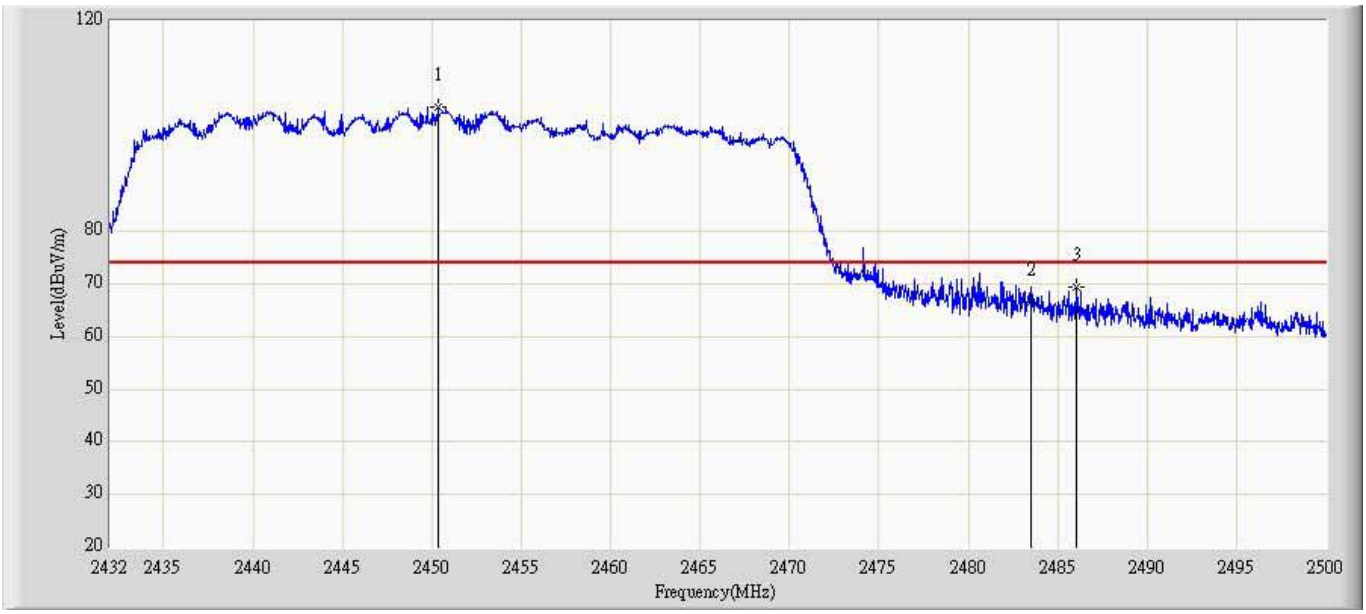
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	67.274	36.534	-6.726	74.000	30.740	PK
2		*	2420.286	100.934	70.117	N/A	N/A	30.817	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 22:53
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2422MHz by 802.11n40MHz Chain 1+2	



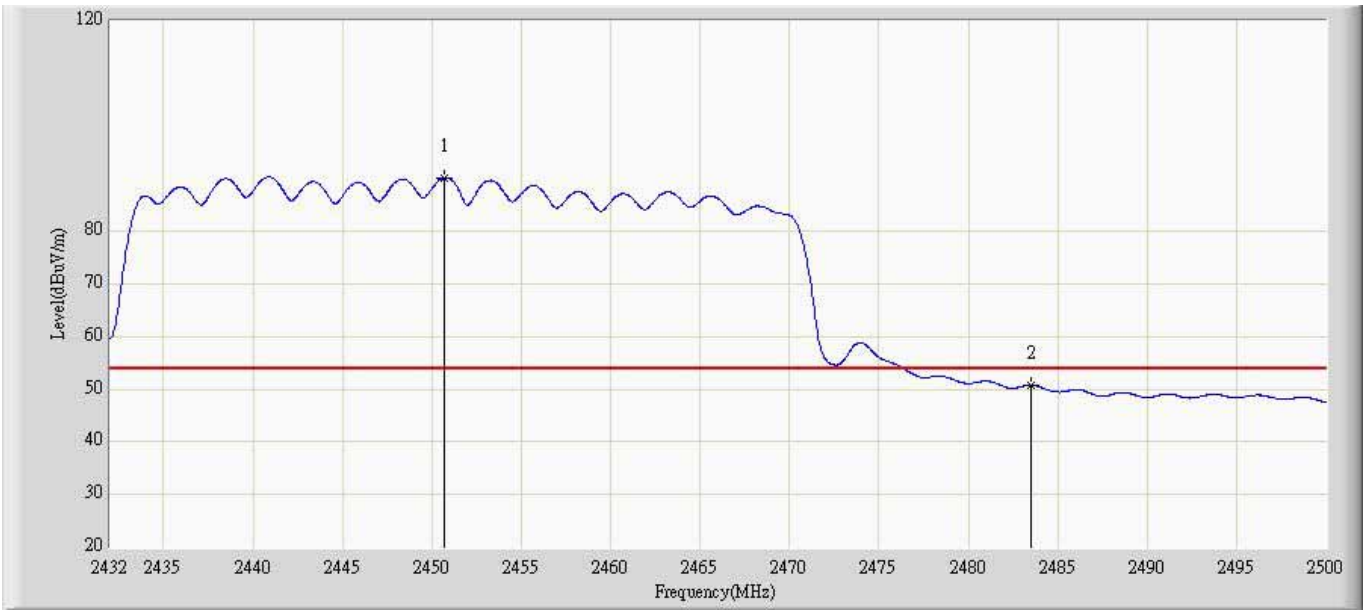
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1			2390.000	49.675	18.935	-4.325	54.000	30.740	AV
2		*	2419.758	87.640	56.824	N/A	N/A	30.815	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 23:01
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz Chain 1+2	



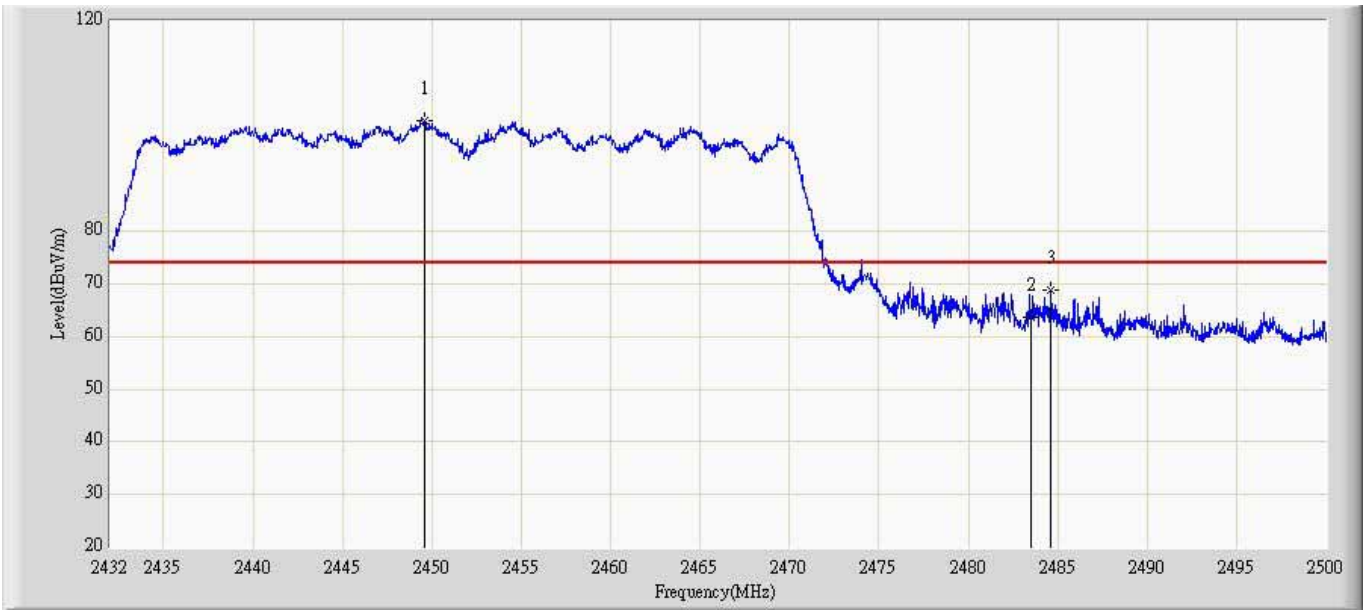
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.326	103.663	72.766	N/A	N/A	30.897	PK
2			2483.500	66.570	35.584	-7.430	74.000	30.985	PK
3			2486.060	69.454	38.461	-4.546	74.000	30.993	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 23:05
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Horizontal
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz Chain 1+2	



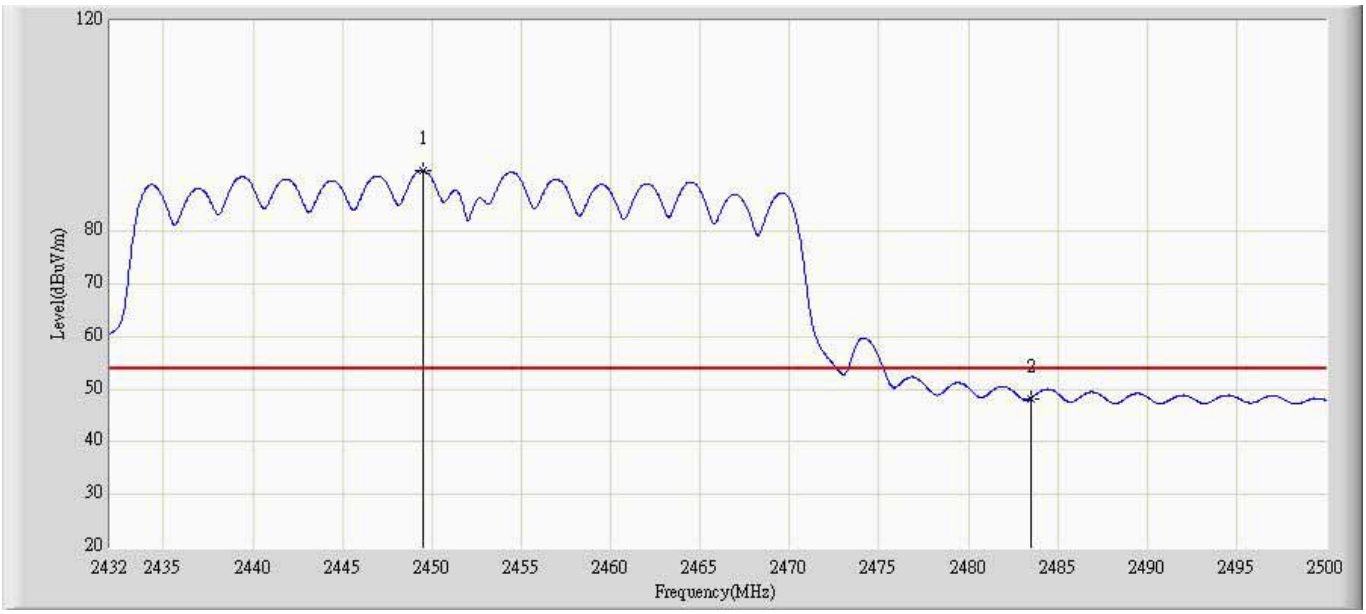
No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2450.666	90.108	59.210	N/A	N/A	30.898	AV
2			2483.500	50.786	19.801	-3.214	54.000	30.985	AV

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 23:09
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz Chain 1+2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.612	100.956	70.061	N/A	N/A	30.894	PK
2			2483.500	63.567	32.582	-10.433	74.000	30.985	PK
3			2484.632	68.711	37.722	-5.289	74.000	30.989	PK

Engineer: Brgant	
Site: AC5	Time: 2012/09/14 - 23:13
Limit: FCC_Part15.209_RE(3m)	Margin: 0
Probe: BBHA 9120D_499(1-18GHz)	Polarity: Vertical
EUT: IP-STB	Power: AC 120V/60Hz
Note: Mode4:Transmit at channel 2452MHz by 802.11n40MHz Chain 1+2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor	Type
1		*	2449.510	91.517	60.622	N/A	N/A	30.894	AV
2			2483.500	48.282	17.297	-5.718	54.000	30.985	AV

7. Operation Frequency Range of 20dB Bandwidth

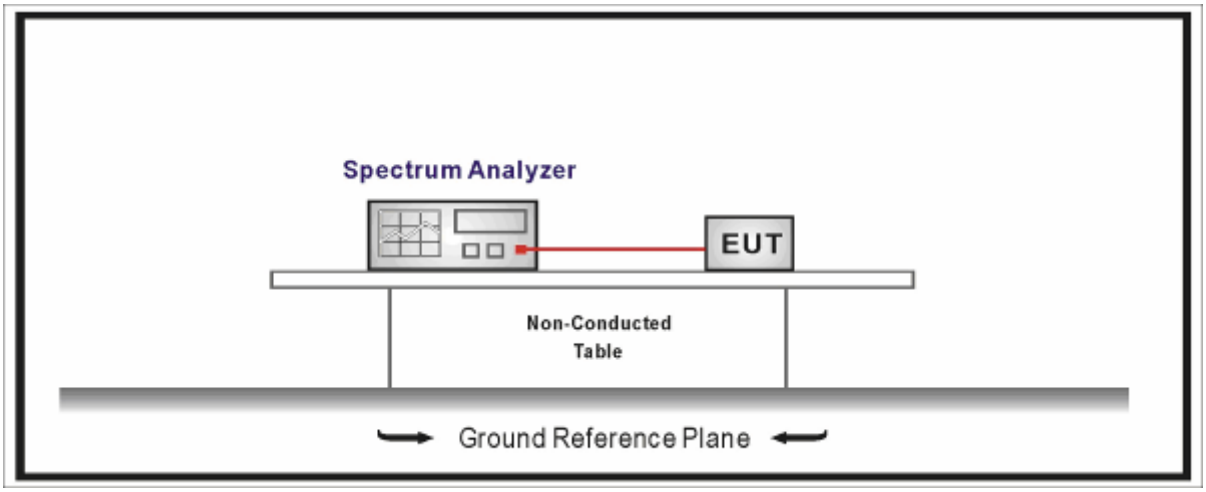
7.1. Test Equipment

Operation Frequency Range of 20dB 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.

7.2. Test Setup



7.3. Limit

20 dB bandwidth of the emission is contained within the operation frequency band.

7.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

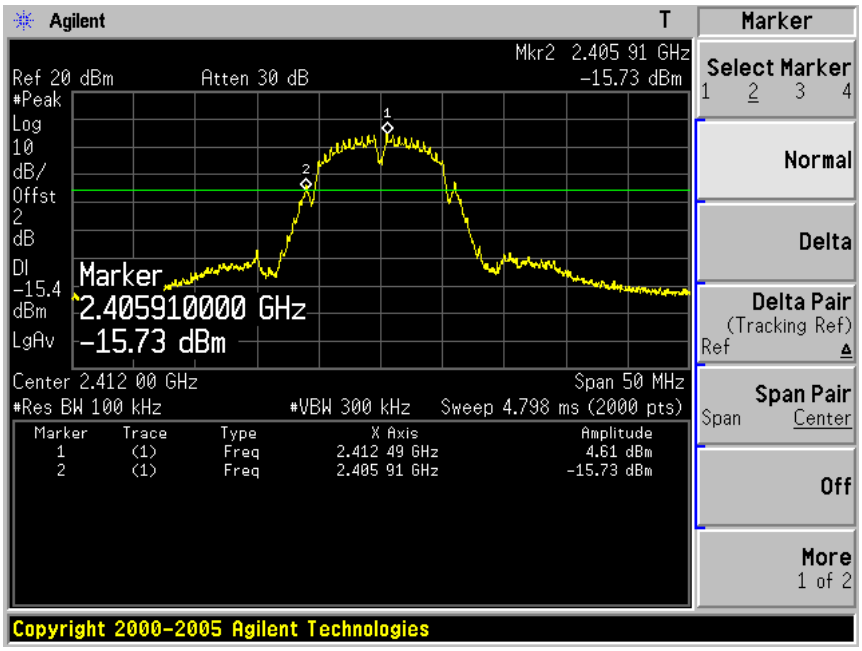
7.5. Uncertainty

The measurement uncertainty is defined as ± 1 kHz

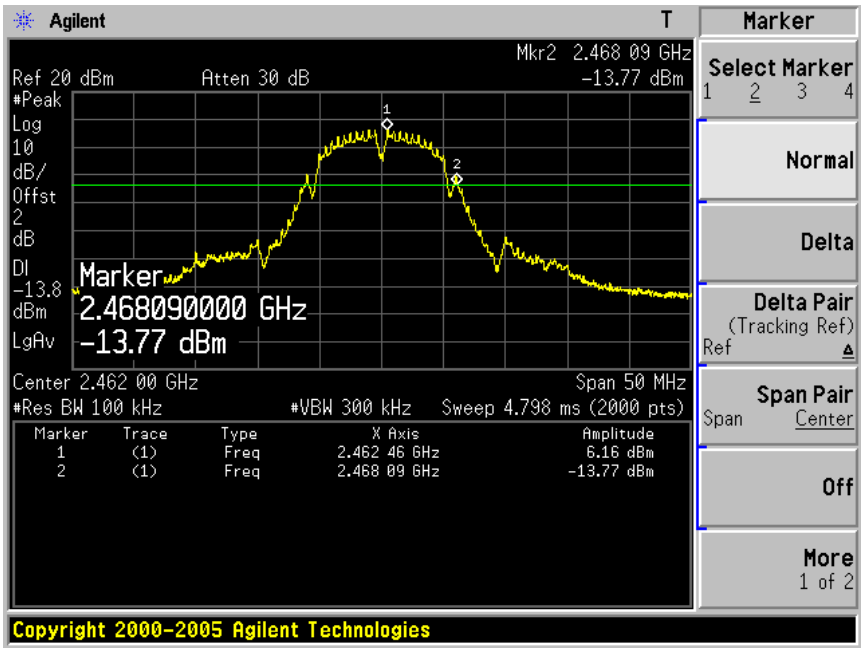
7.6. Test Result

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

Channel 01 (2412MHz)

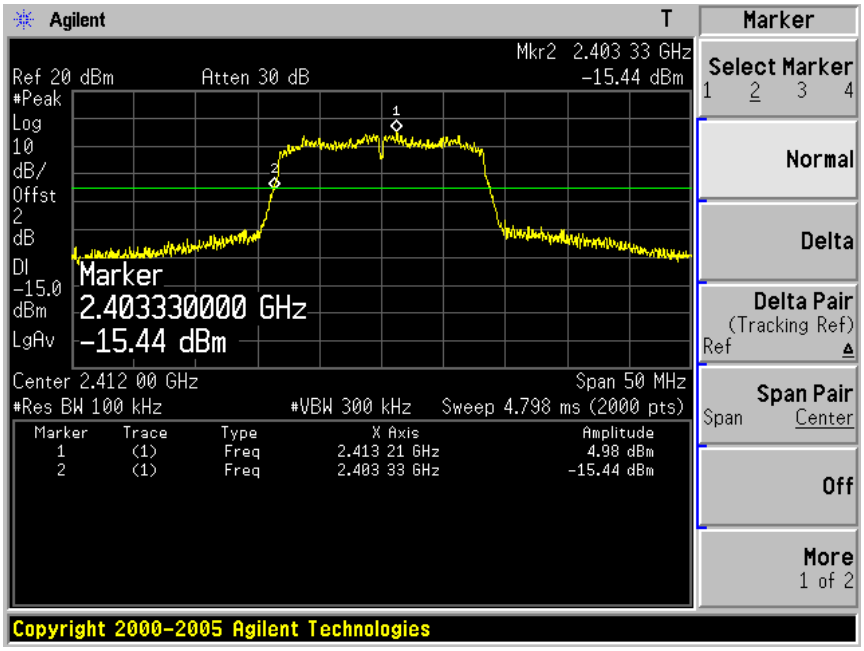


Channel 11 (2462MHz)

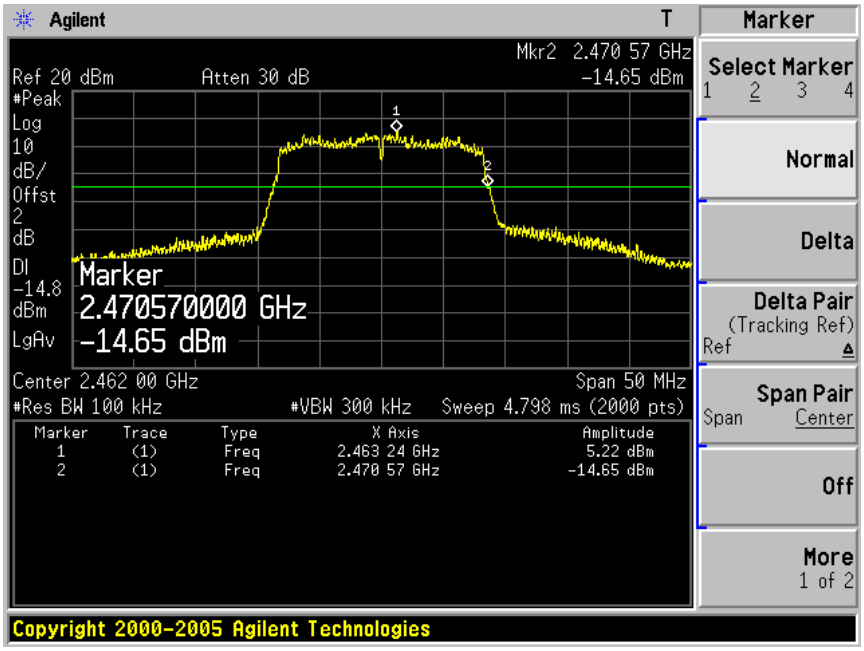


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel 01 (2412MHz)

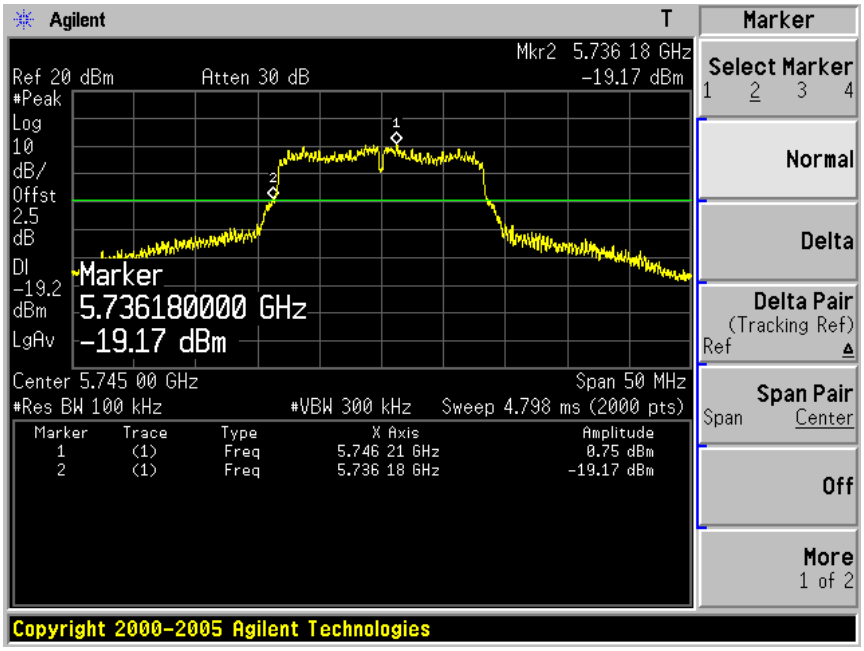


Channel 11 (2462MHz)

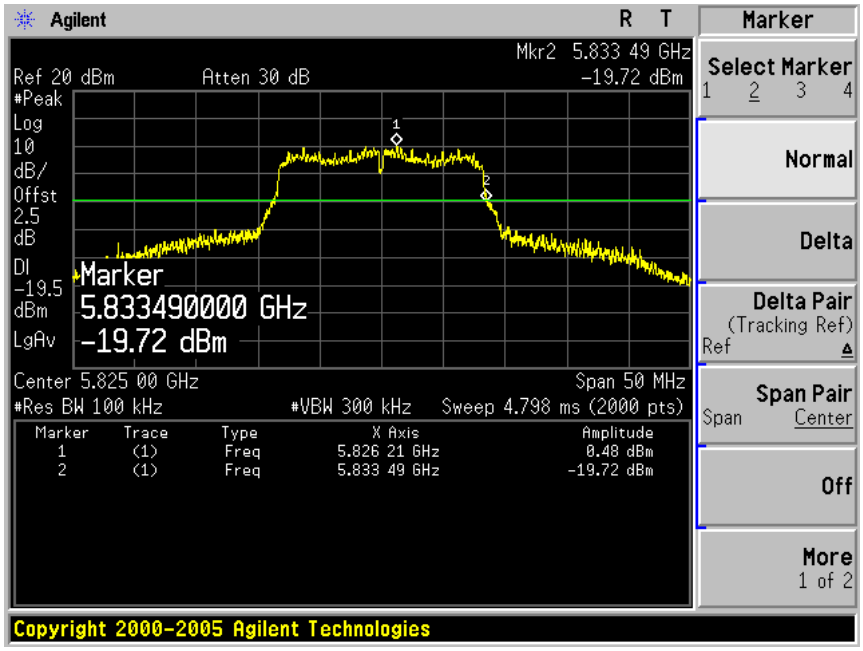


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel 149 (5745MHz)

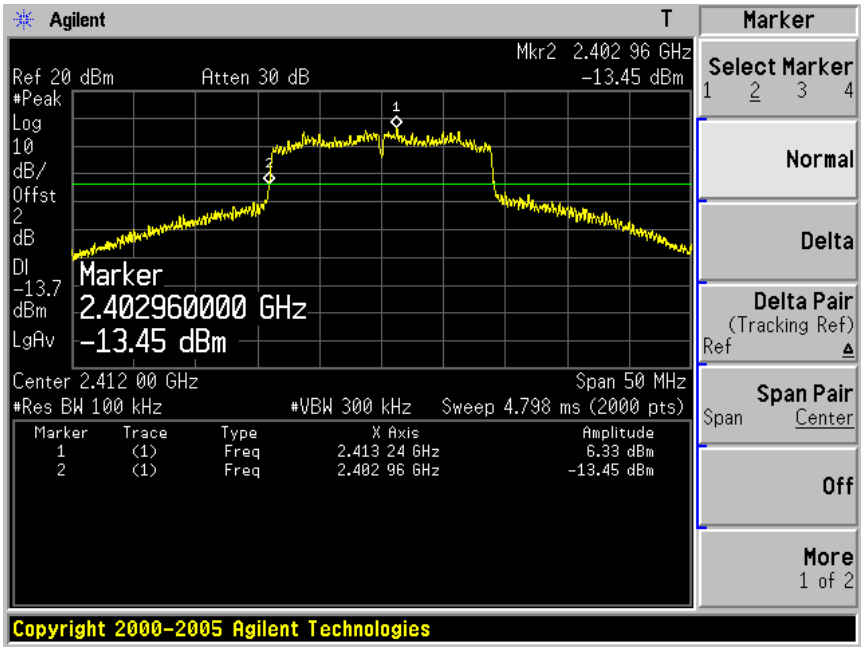


Channel 165 (5825MHz)

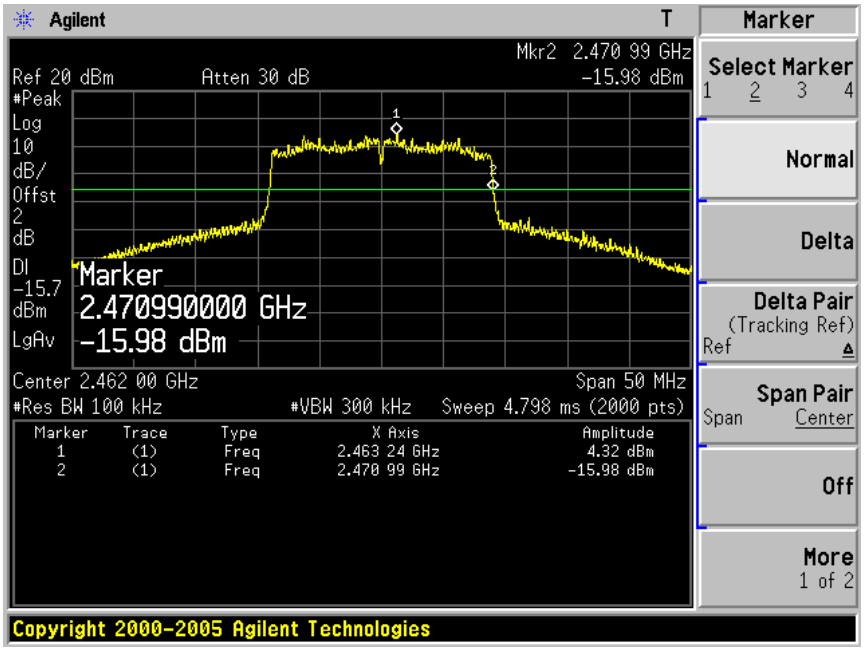


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 1)

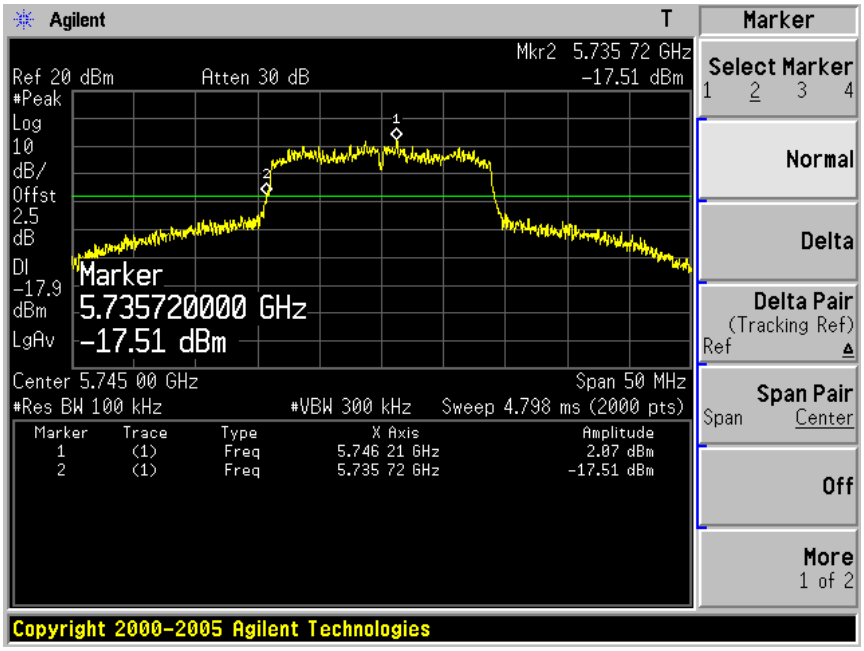
Channel 01 (2412MHz)



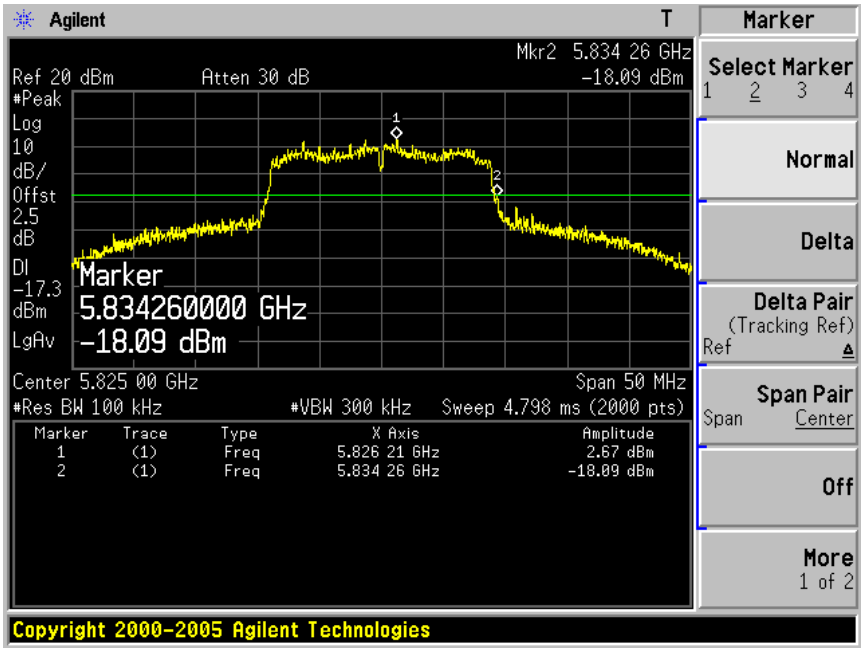
Channel 11 (2462MHz)



Channel 149 (5745MHz)

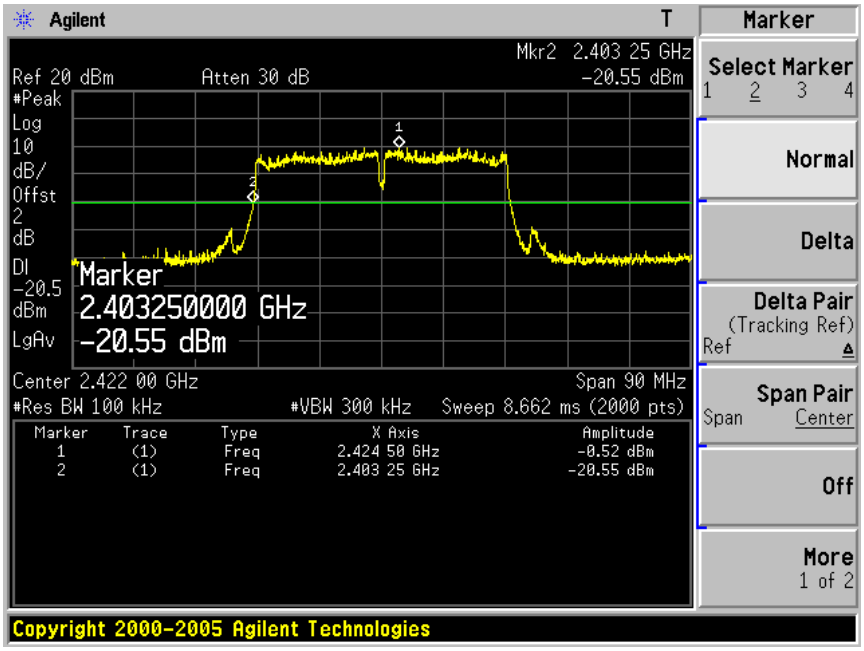


Channel 165 (5825MHz)

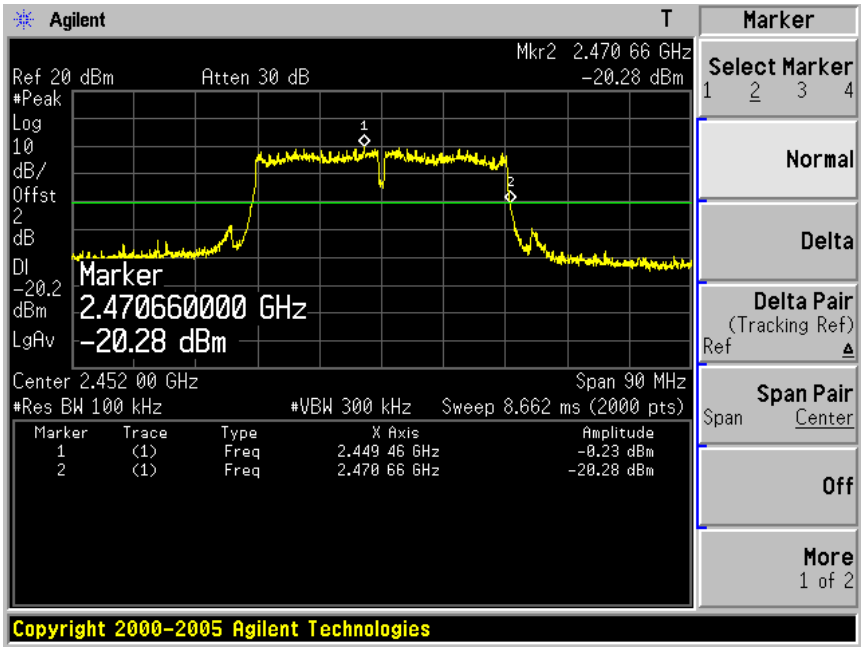


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 1)

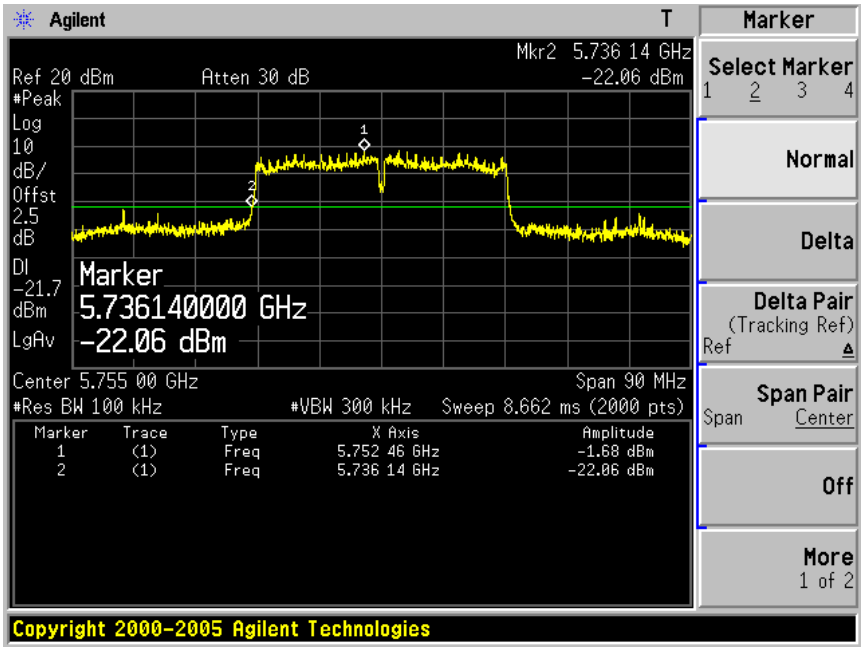
Channel 03 (2422MHz)



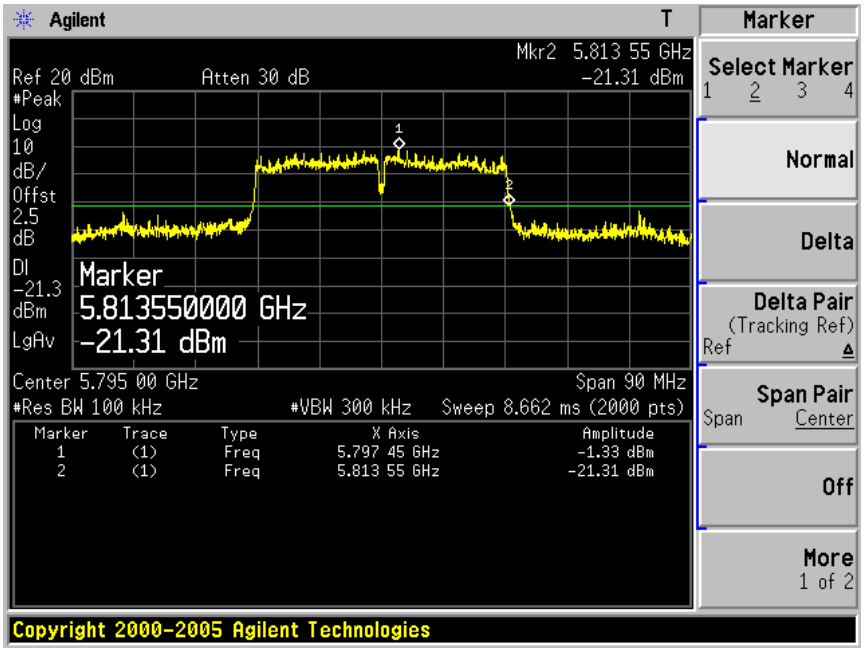
Channel 09 (2452MHz)



Channel 151 (5755MHz)

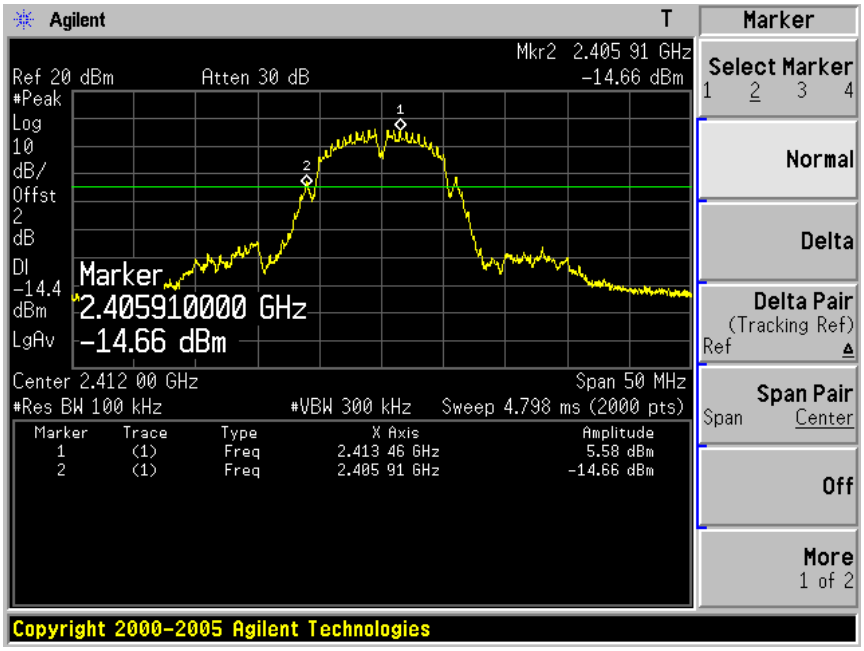


Channel 159 (5795MHz)

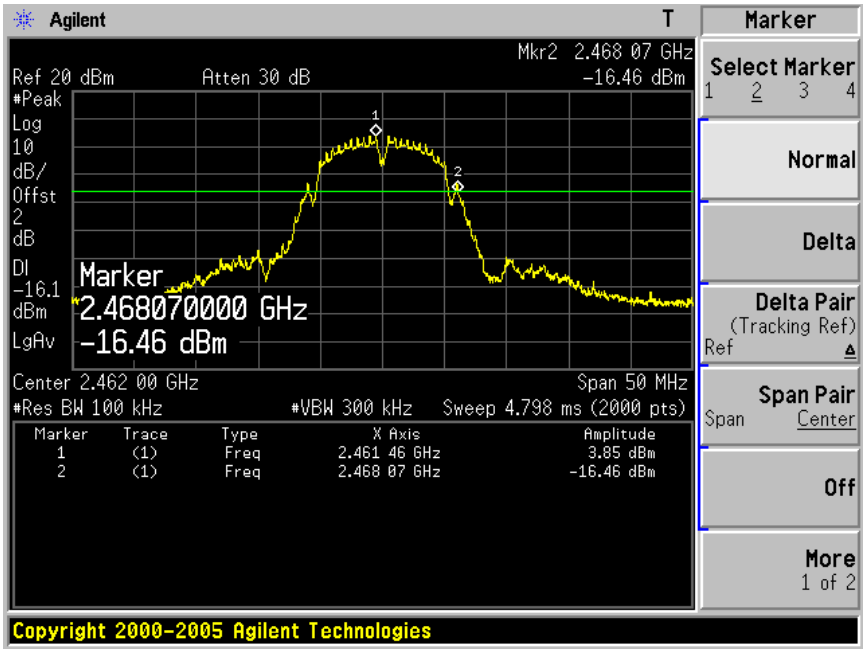


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 2)

Channel 01 (2412MHz)

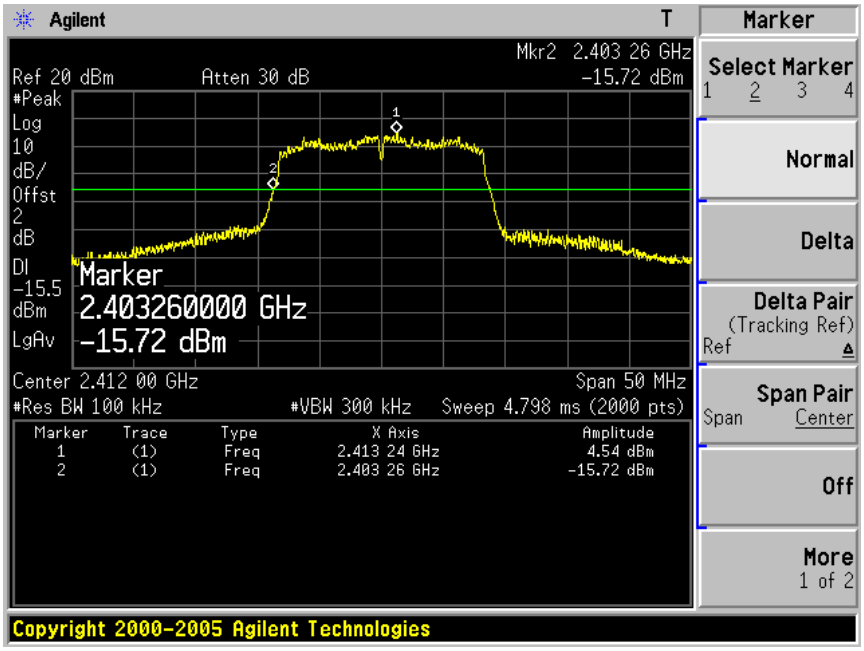


Channel 11 (2462MHz)

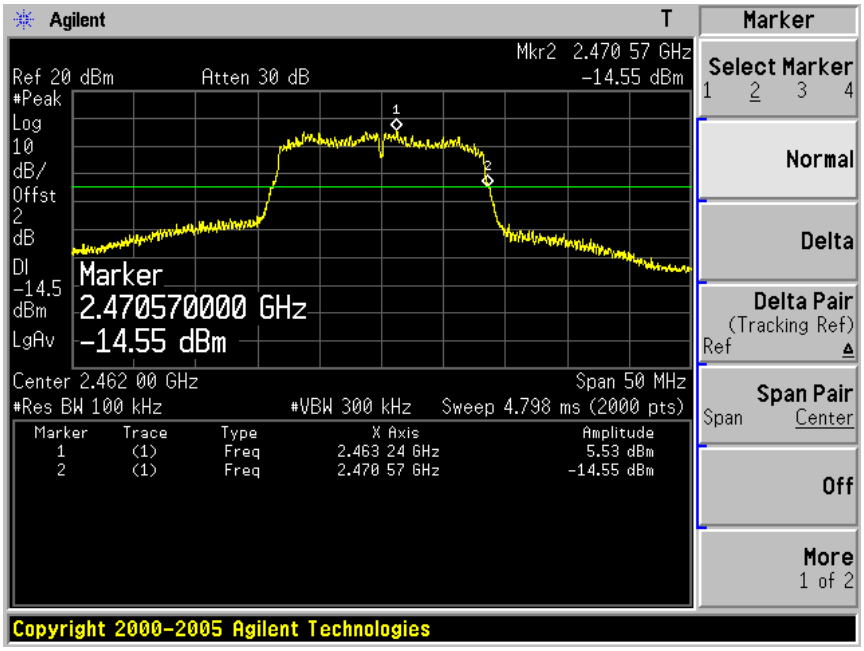


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 2)

Channel 01 (2412MHz)

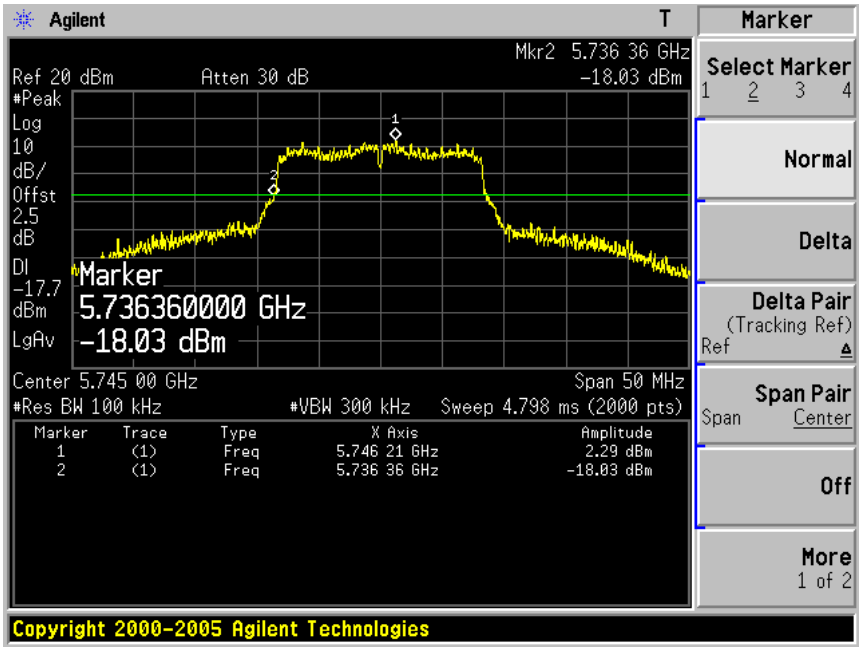


Channel 11 (2462MHz)

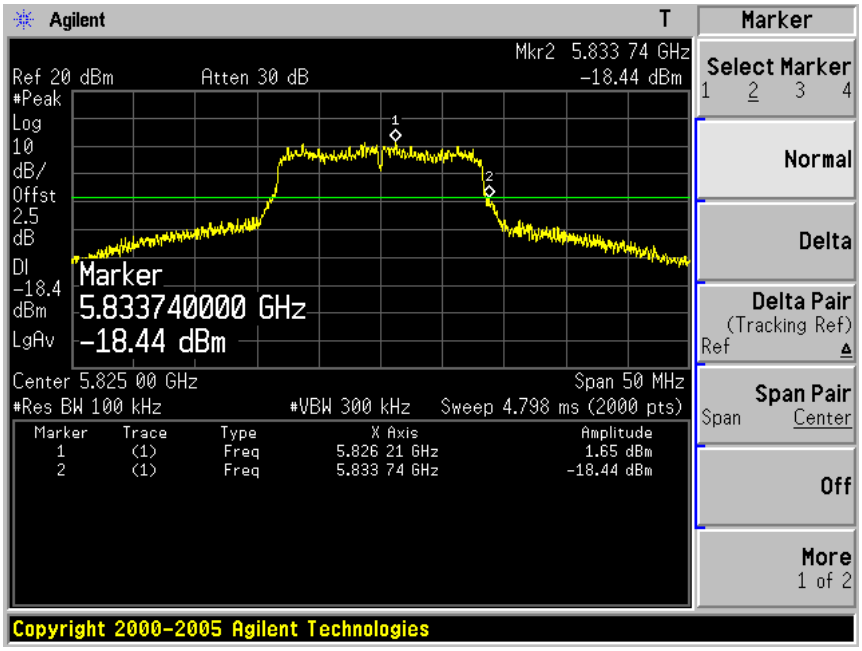


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 2)

Channel 149 (5745MHz)

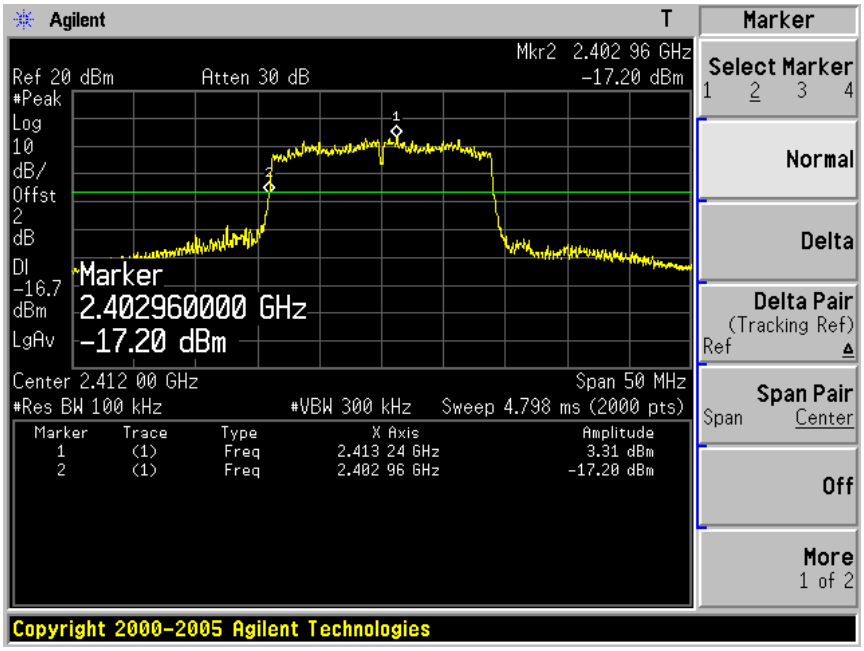


Channel 165 (5825MHz)

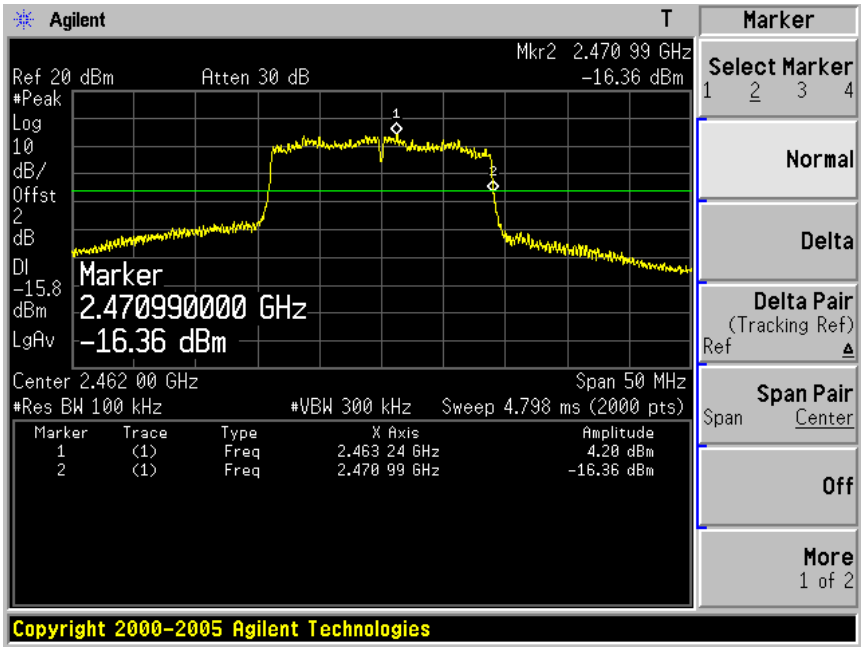


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 2)

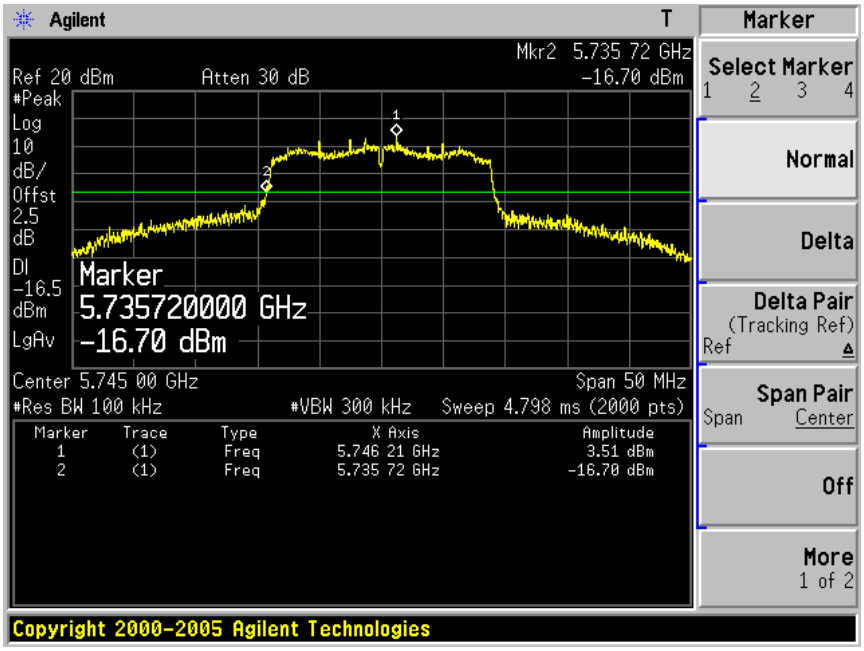
Channel 01 (2412MHz)



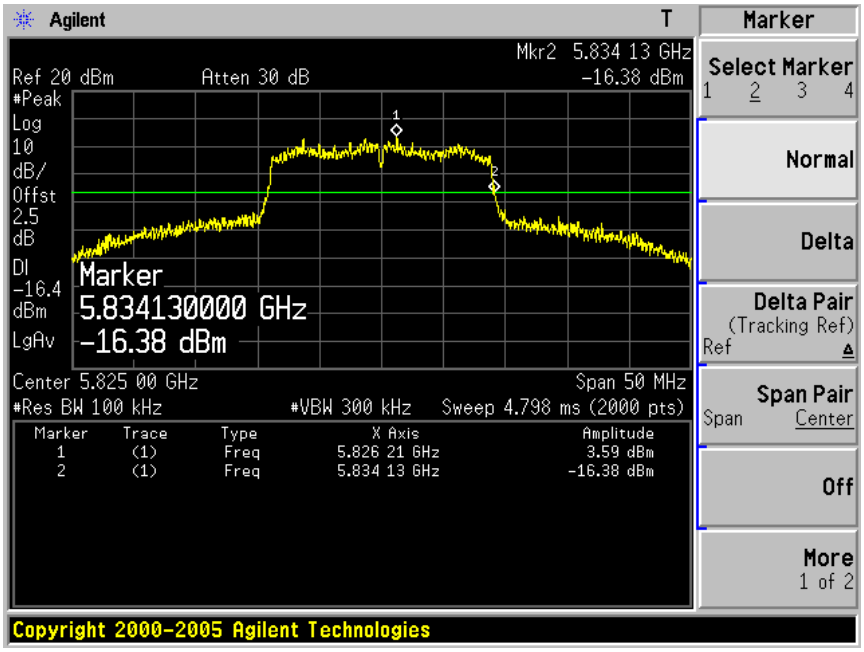
Channel 11 (2462MHz)



Channel 149 (5745MHz)

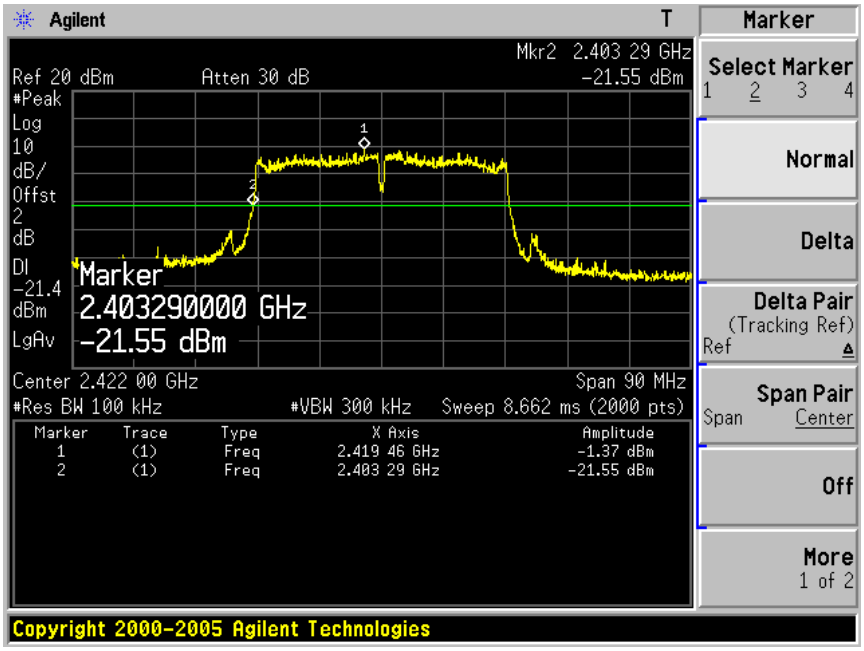


Channel 165 (5825MHz)

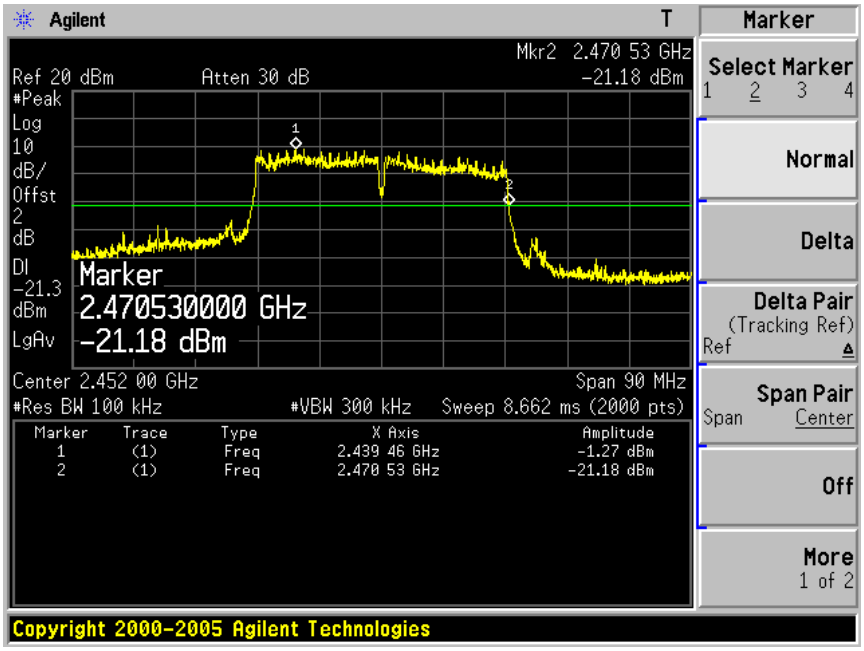


Product	:	IP-STB
Test Item	:	Operation Frequency Range of 20dB Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 2)

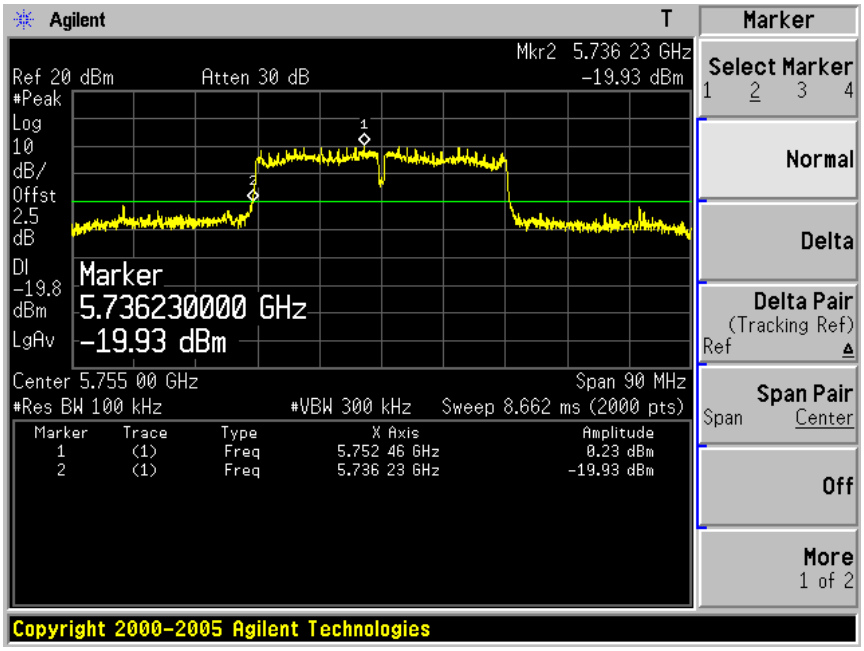
Channel 03 (2422MHz)



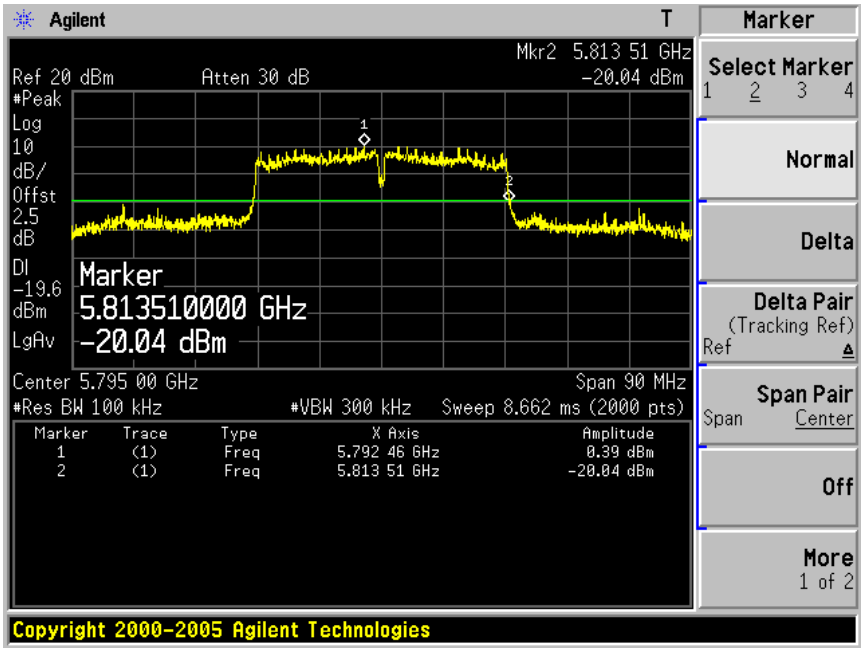
Channel 09 (2452MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



8. Occupied Bandwidth

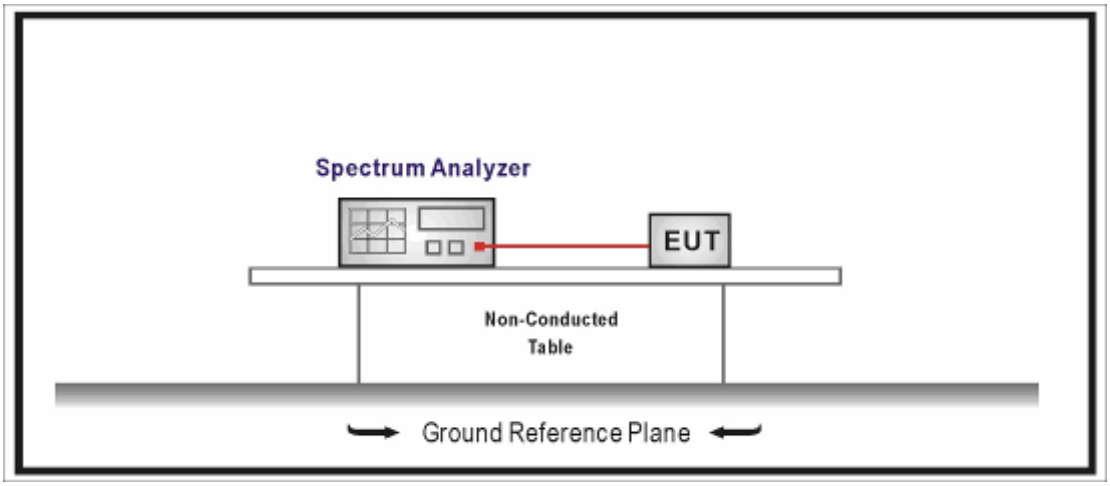
8.1. Test Equipment

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.

8.2. Test Setup



8.3. Limit

The minimum 6 dB bandwidth shall be at least 500 kHz.

8.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW = 100 kHz, Span greater than RBW.

8.5. Uncertainty

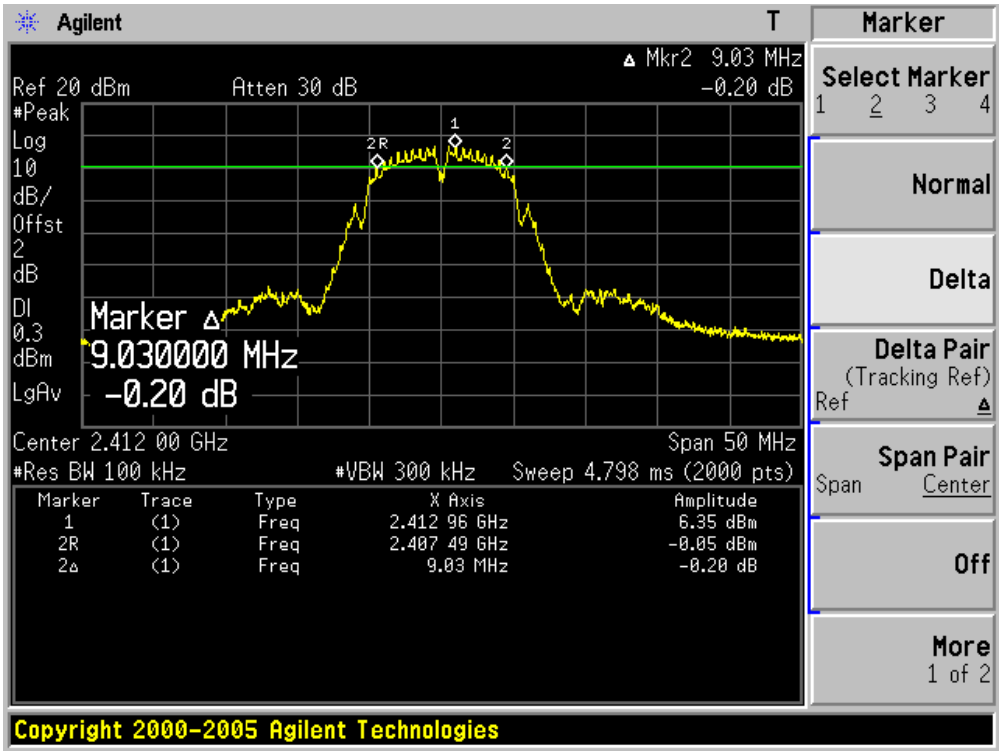
The measurement uncertainty is defined as ± 1 kHz

8.6. Test Result

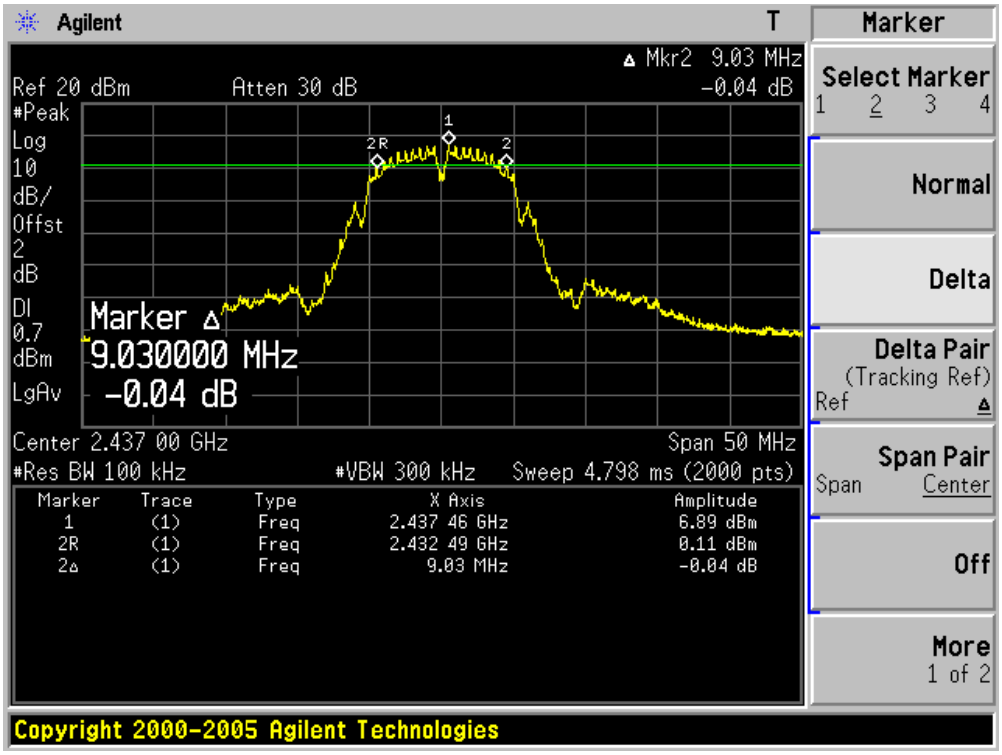
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	9030	500	Pass
06	2437	9030	500	Pass
11	2462	9000	500	Pass

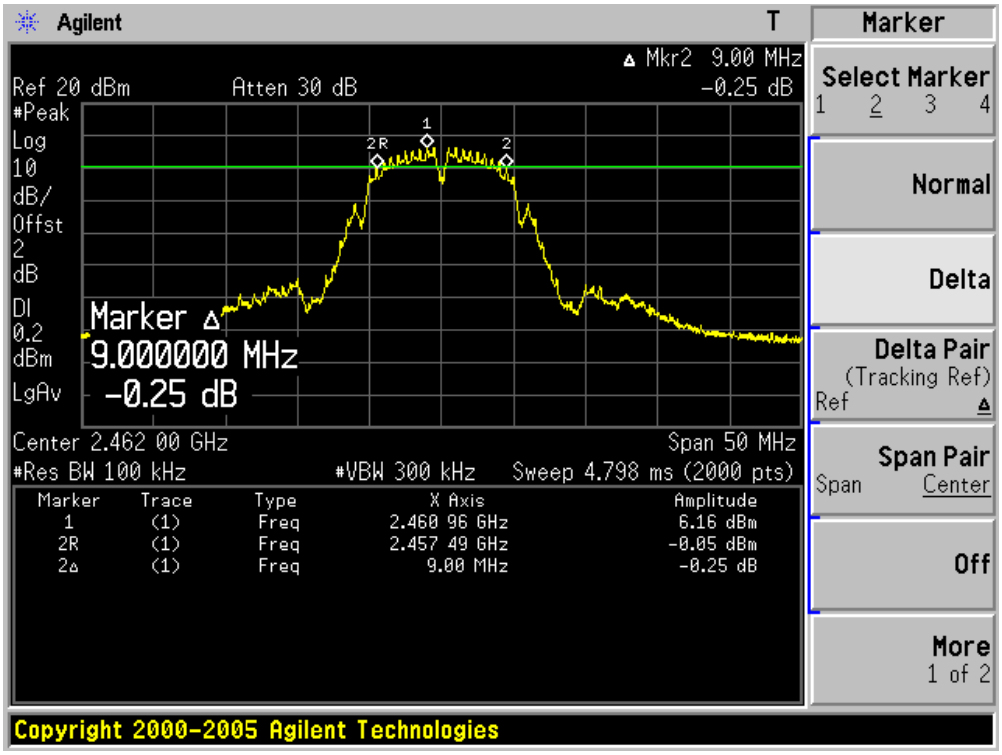
Channel 01 (2412MHz)



Channel 06 (2437MHz)



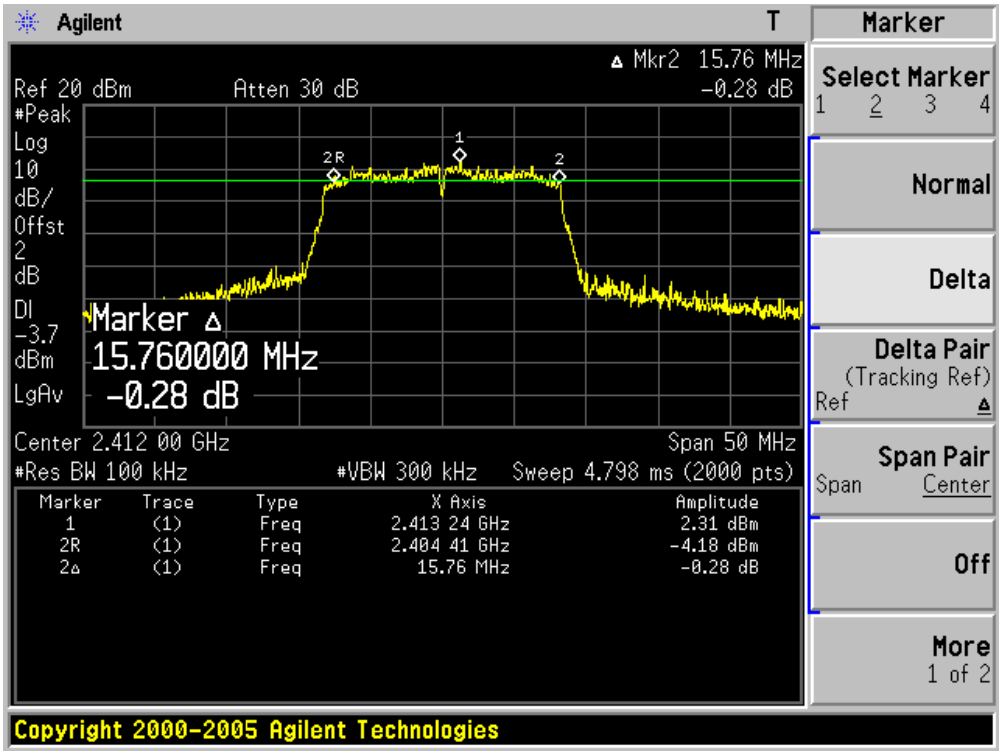
Channel 11 (2462MHz)



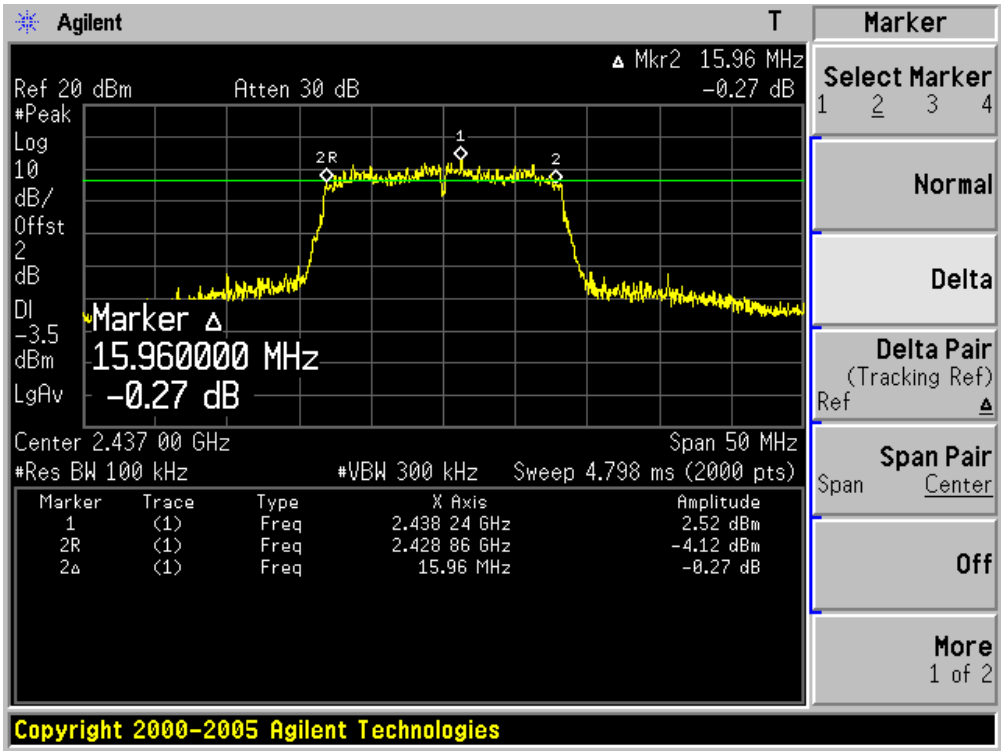
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	15760	500	Pass
06	2437	15960	500	Pass
11	2462	15930	500	Pass

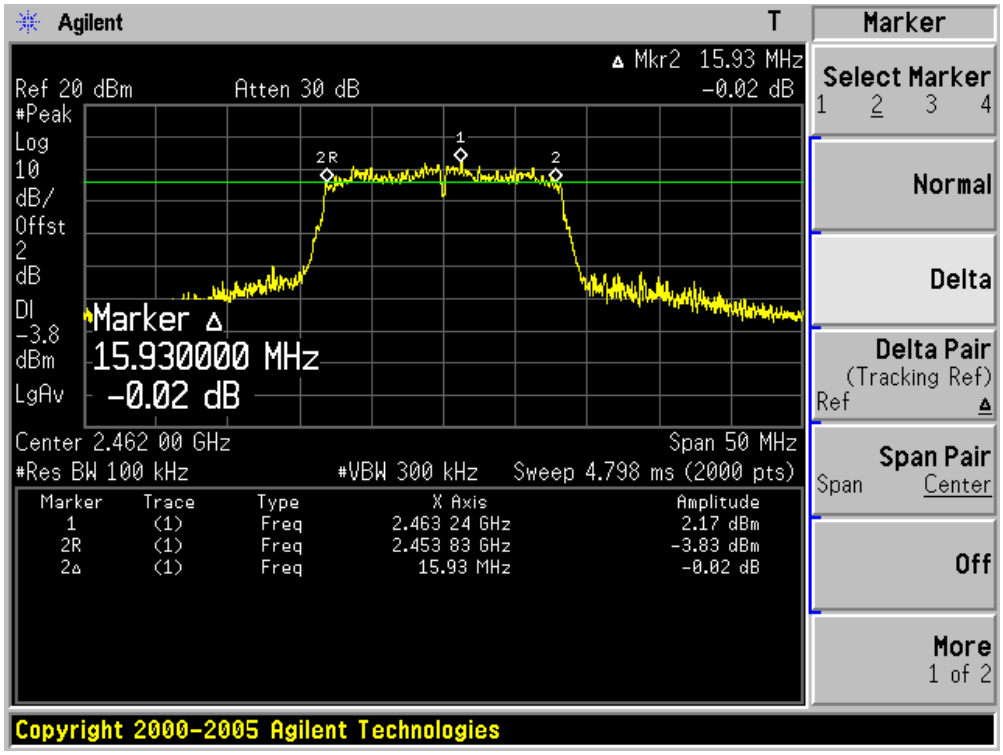
Channel 01 (2412MHz)



Channel 06 (2437MHz)



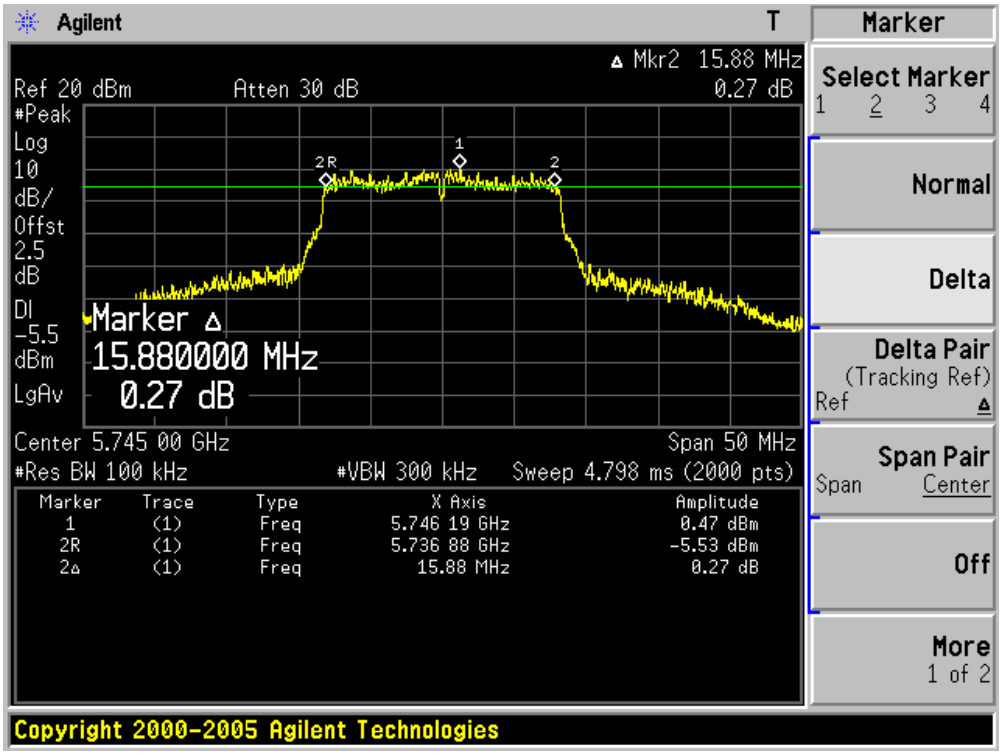
Channel 11 (2462MHz)



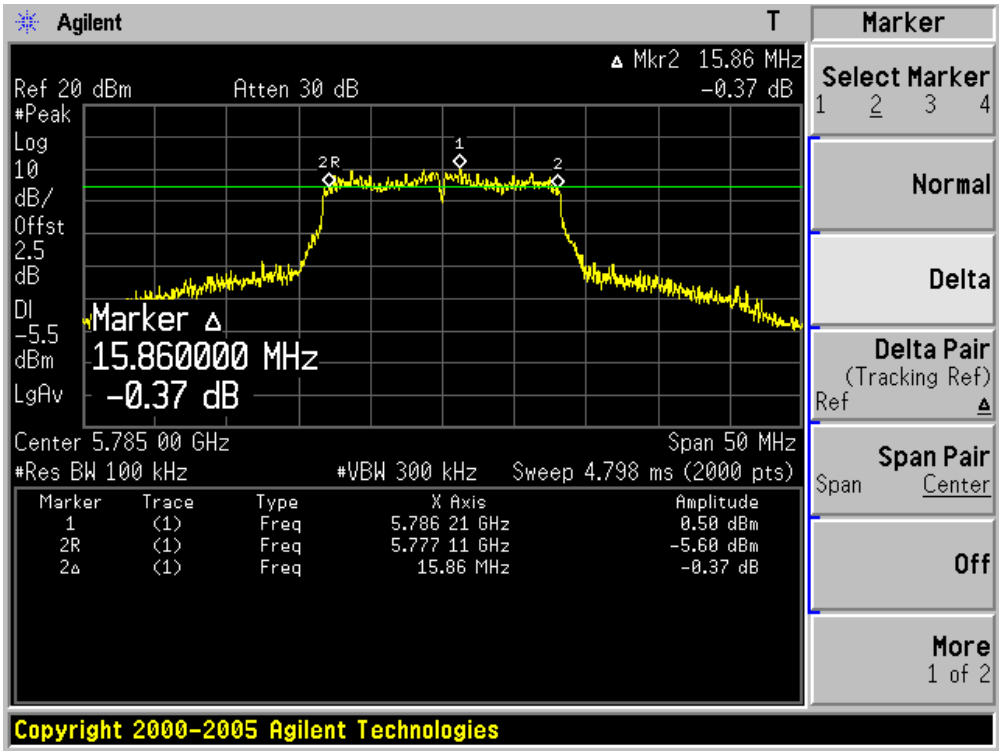
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	15880	500	Pass
157	5785	15860	500	Pass
165	5825	15880	500	Pass

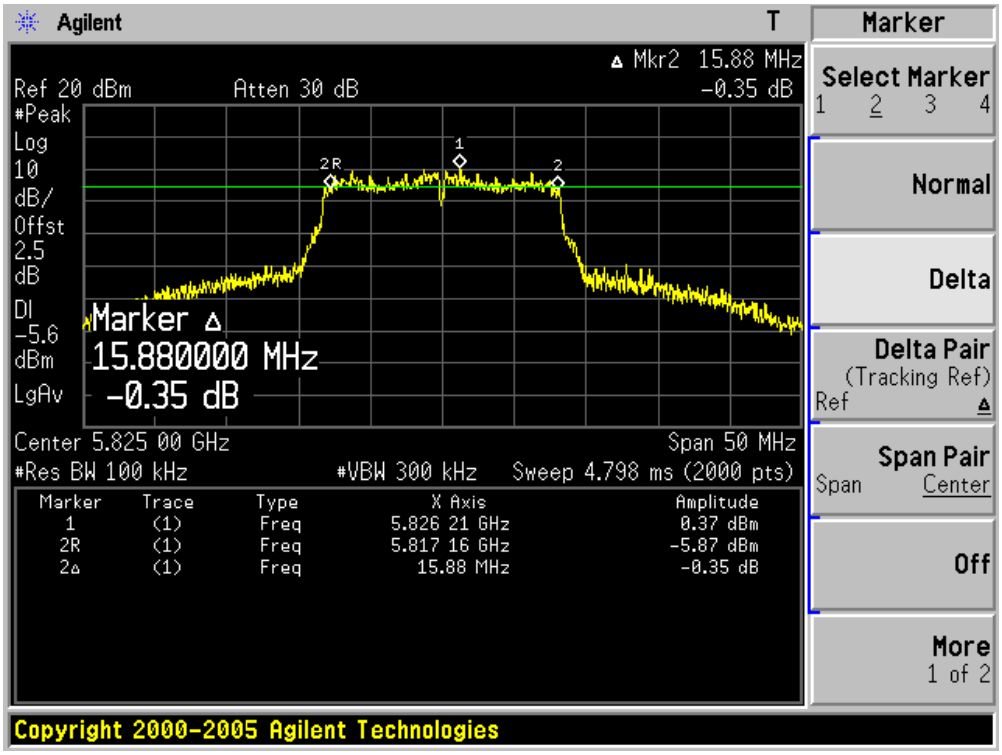
Channel 149 (5745MHz)



Channel 157 (5785MHz)



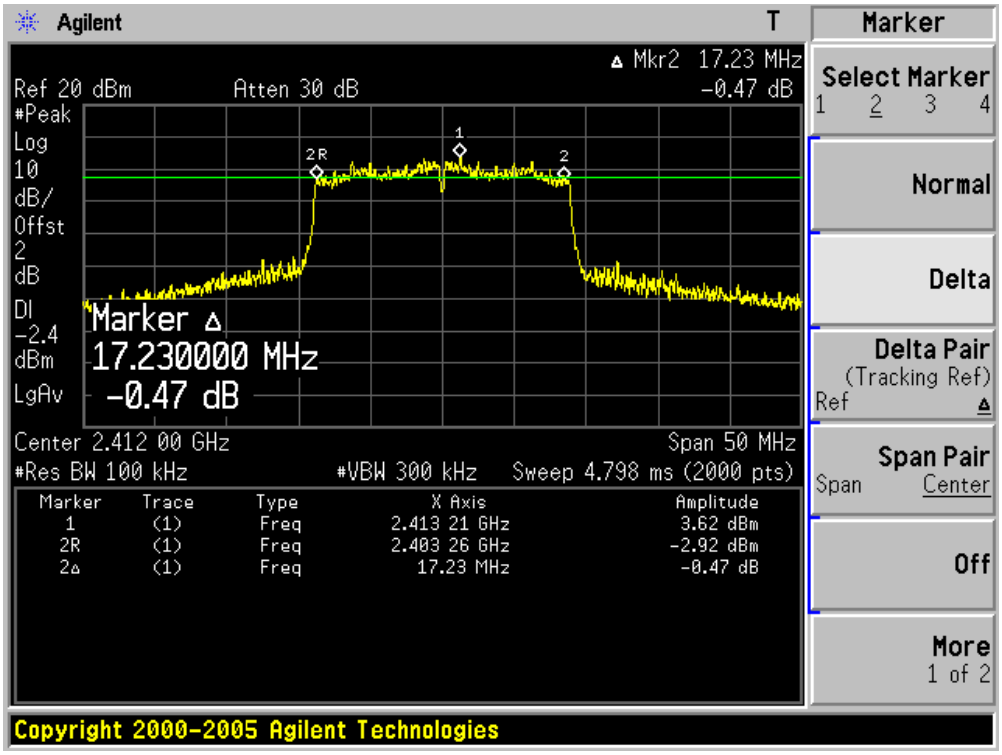
Channel 165 (5825MHz)



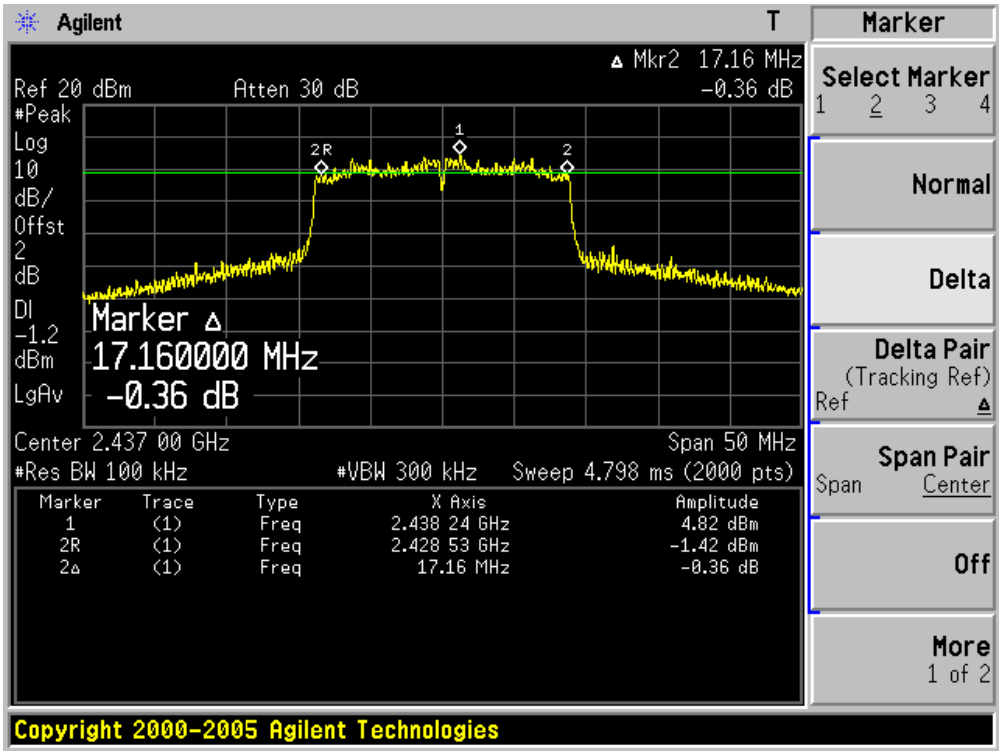
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	17230	500	Pass
06	2437	17160	500	Pass
11	2462	17180	500	Pass
149	5745	17160	500	Pass
157	5785	17210	500	Pass
165	5825	17110	500	Pass

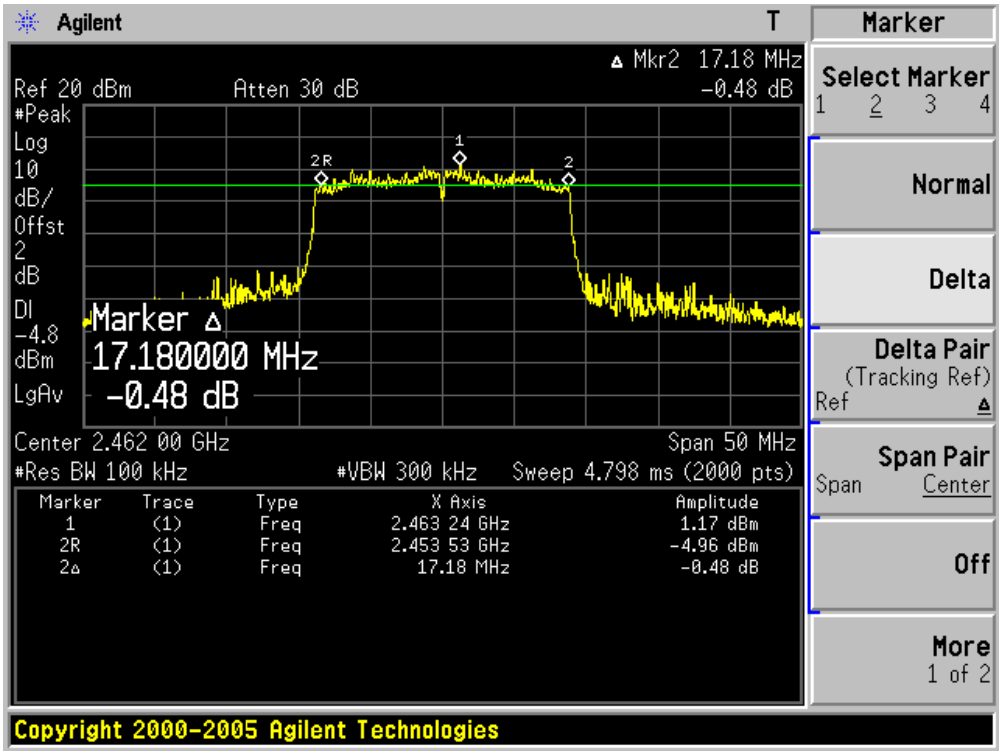
Channel 01 (2412MHz)



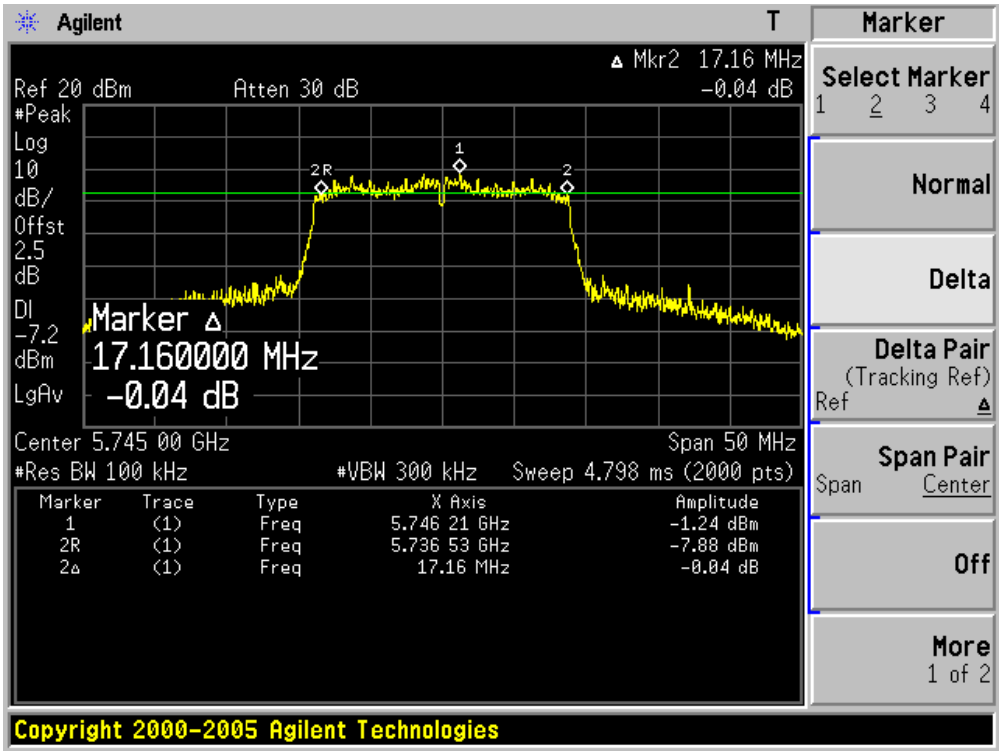
Channel 06 (2437MHz)



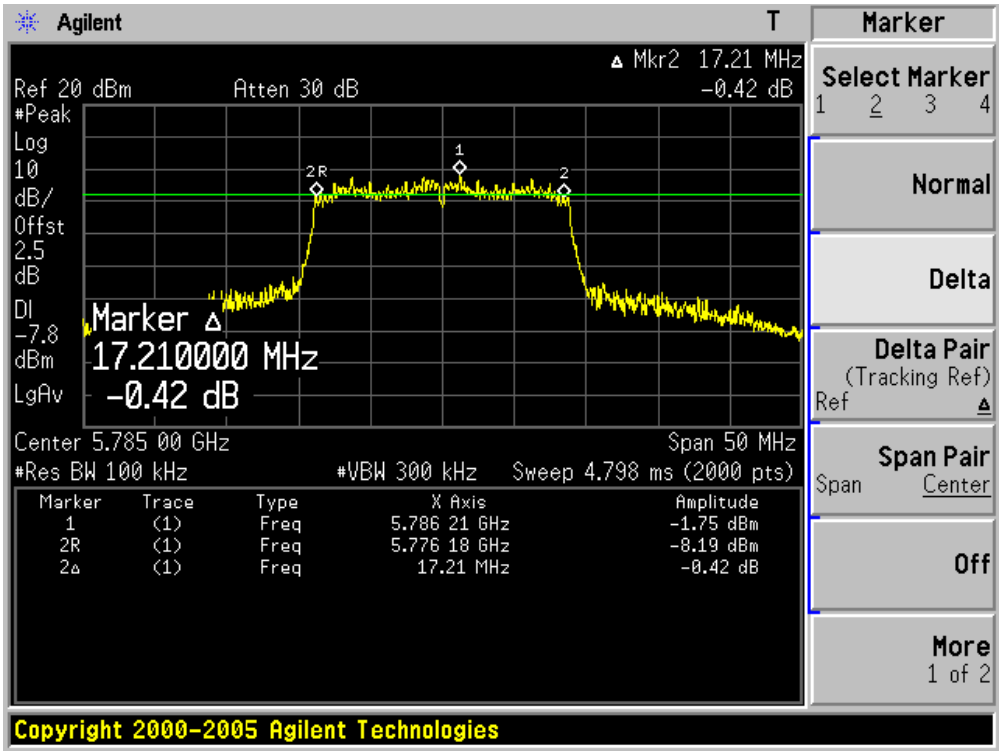
Channel 11 (2462MHz)



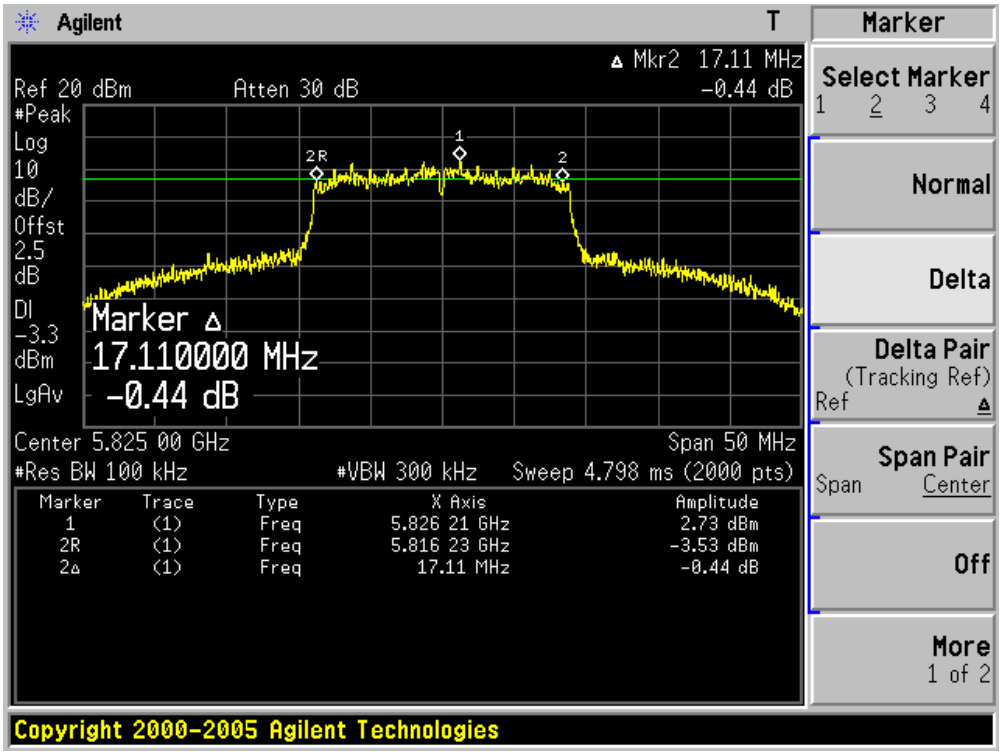
Channel 149 (5745MHz)



Channel 157 (5785MHz)



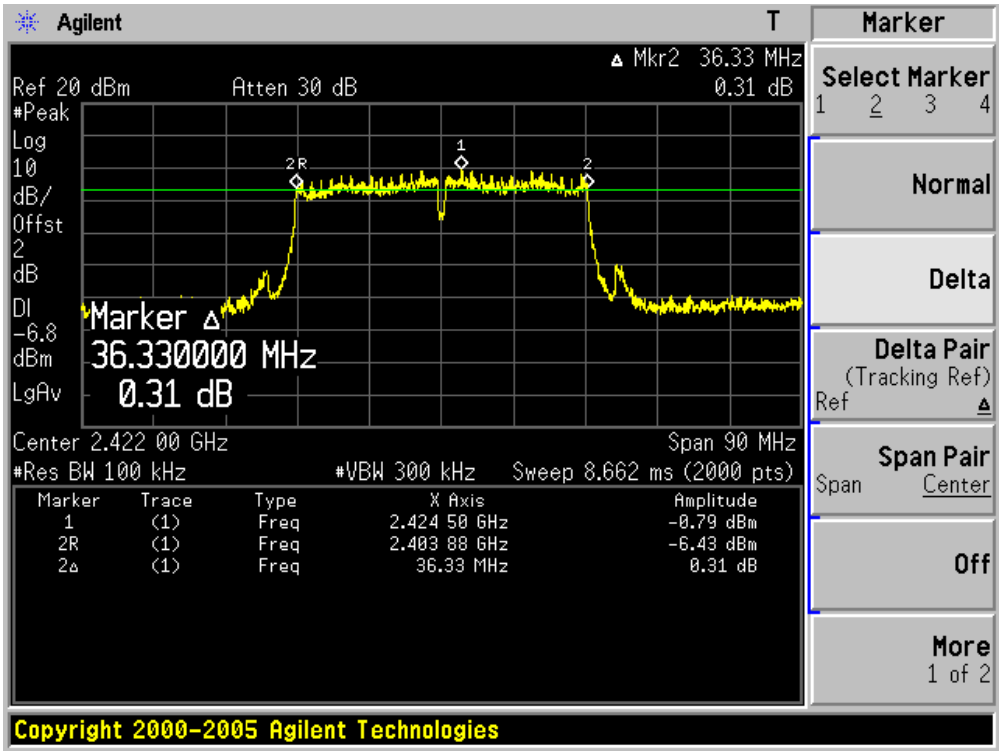
Channel 165 (5825MHz)



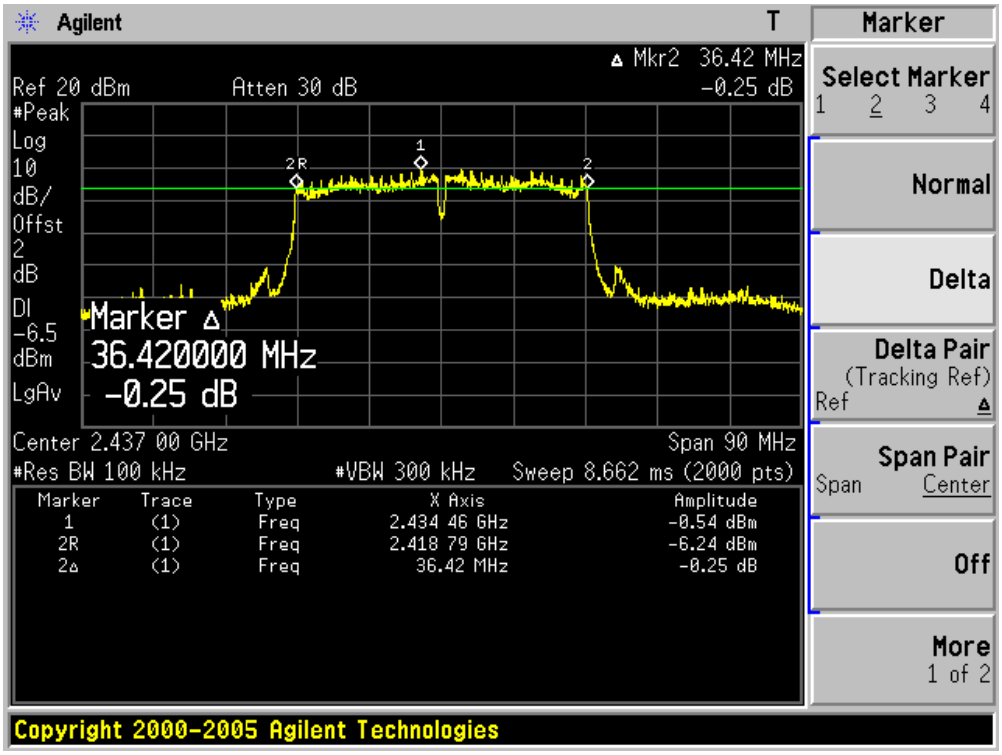
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
03	2422	36330	500	Pass
06	2437	36420	500	Pass
09	2452	36240	500	Pass
151	5755	36290	500	Pass
159	5795	36330	500	Pass

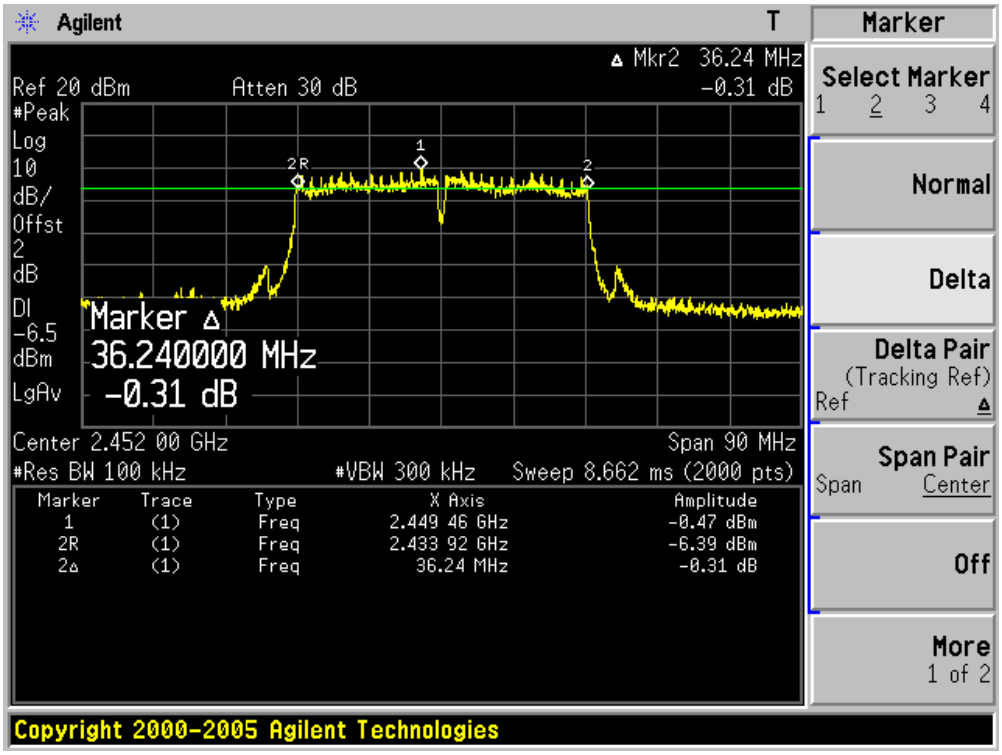
Channel 03 (2422MHz)



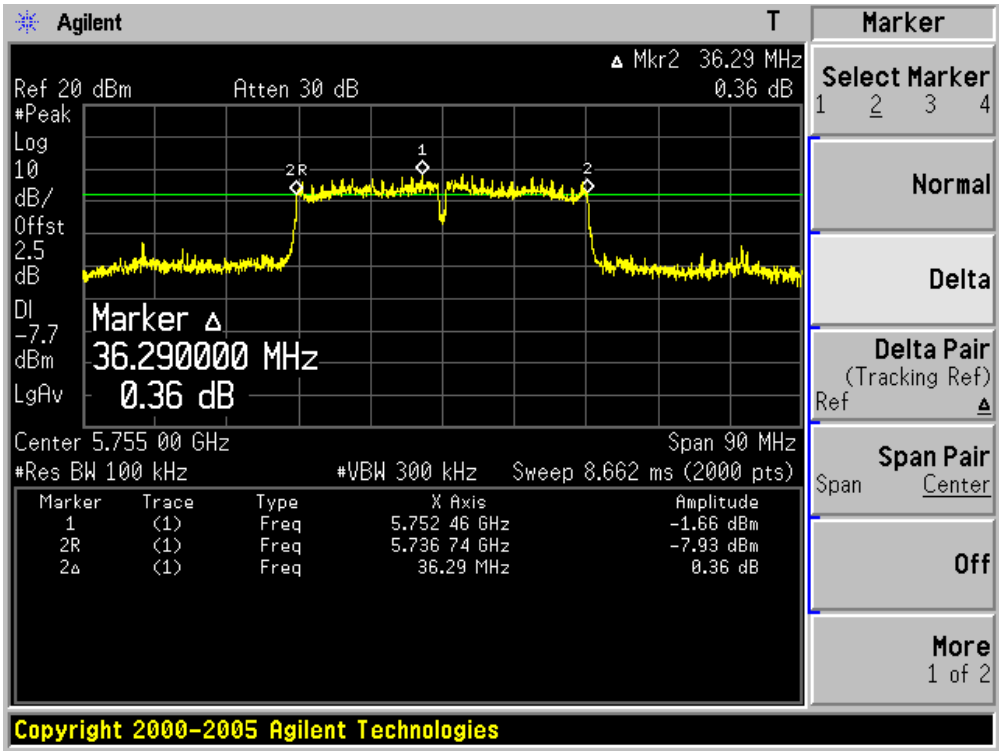
Channel 06 (2437MHz)



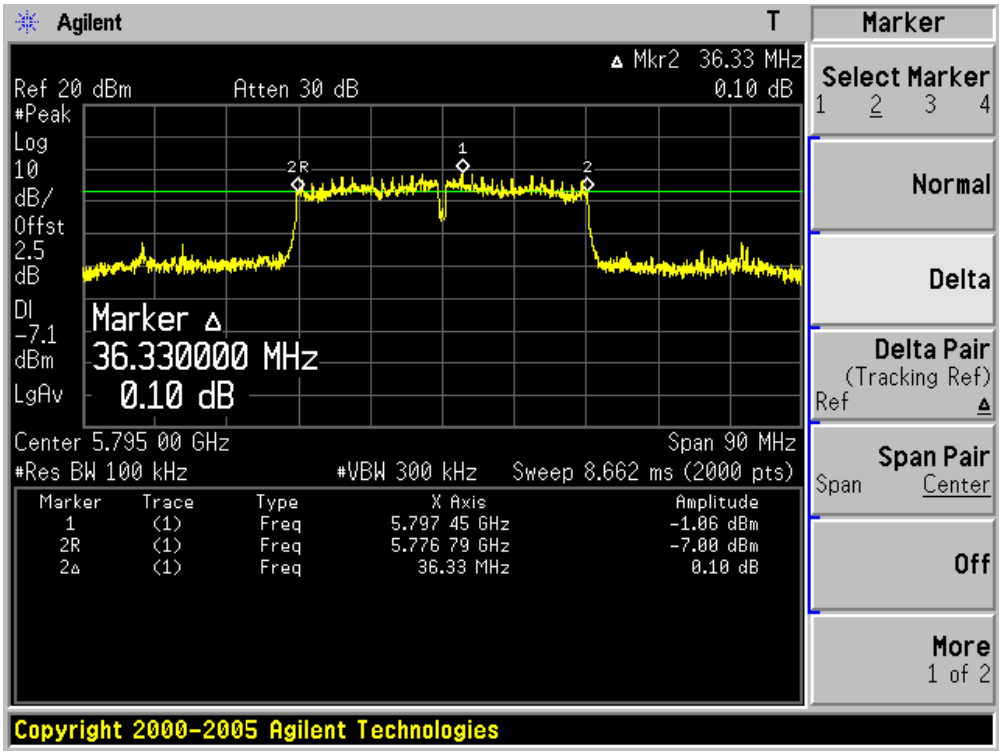
Channel 09 (2452MHz)



Channel 151 (5755MHz)



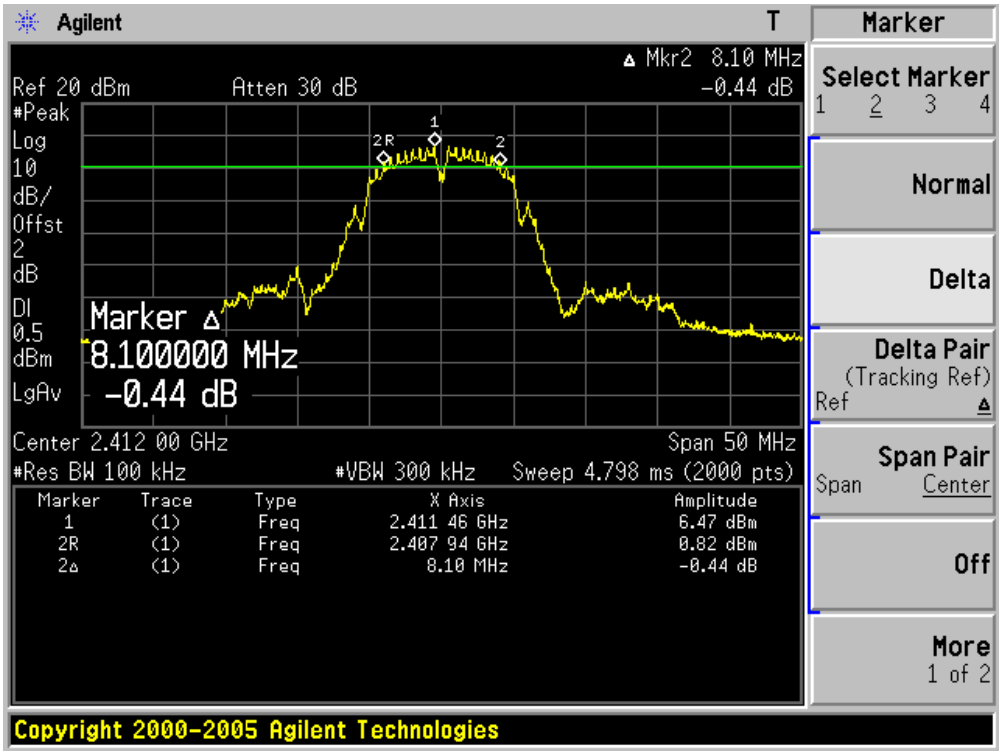
Channel 159 (5795MHz)



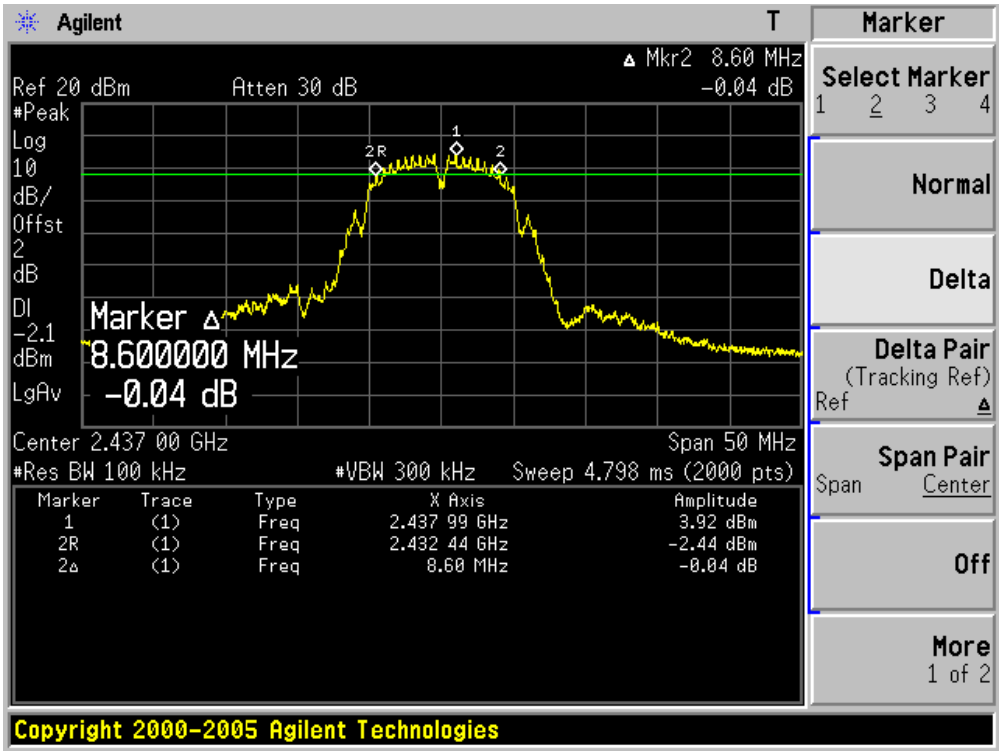
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 2)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	8100	500	Pass
06	2437	8600	500	Pass
11	2462	8550	500	Pass

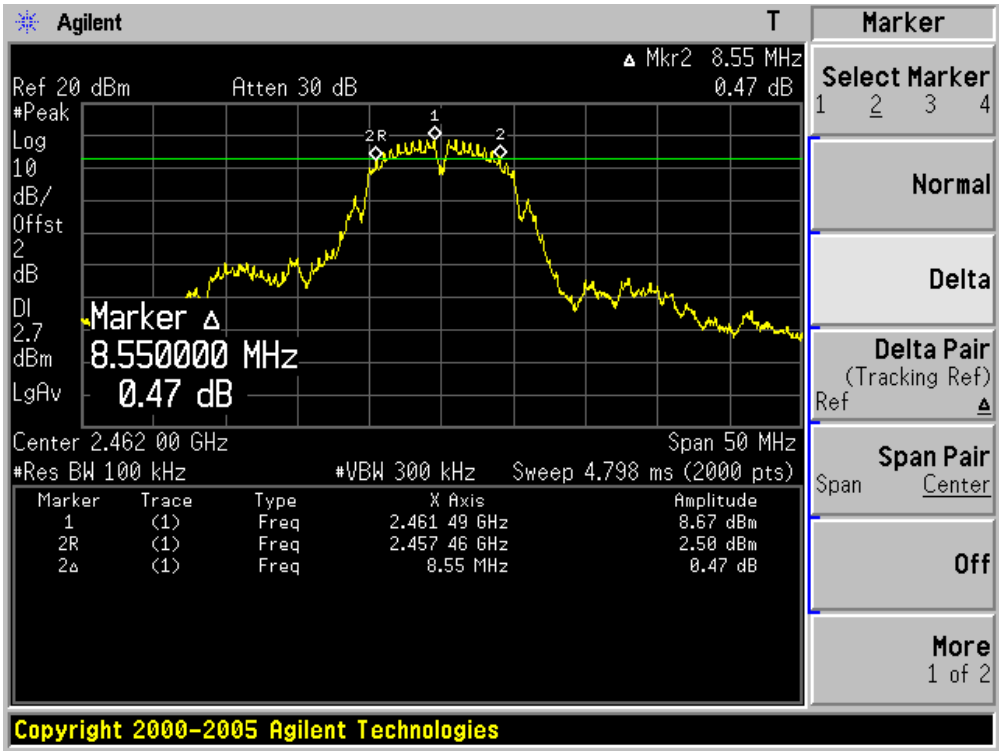
Channel 01 (2412MHz)



Channel 06 (2437MHz)



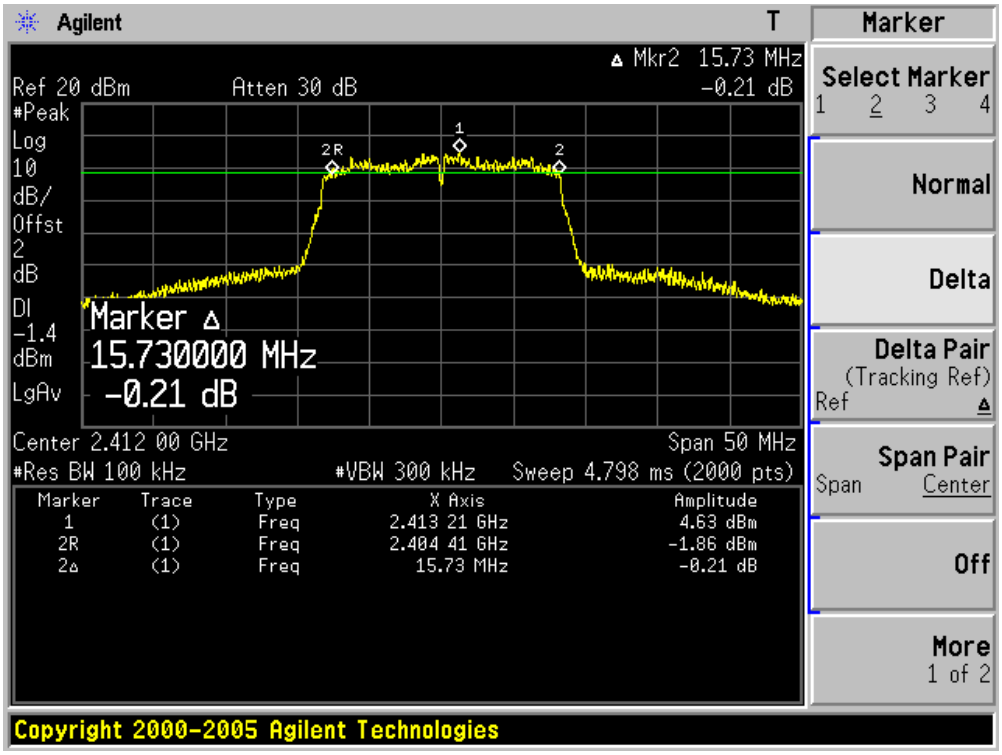
Channel 11 (2462MHz)



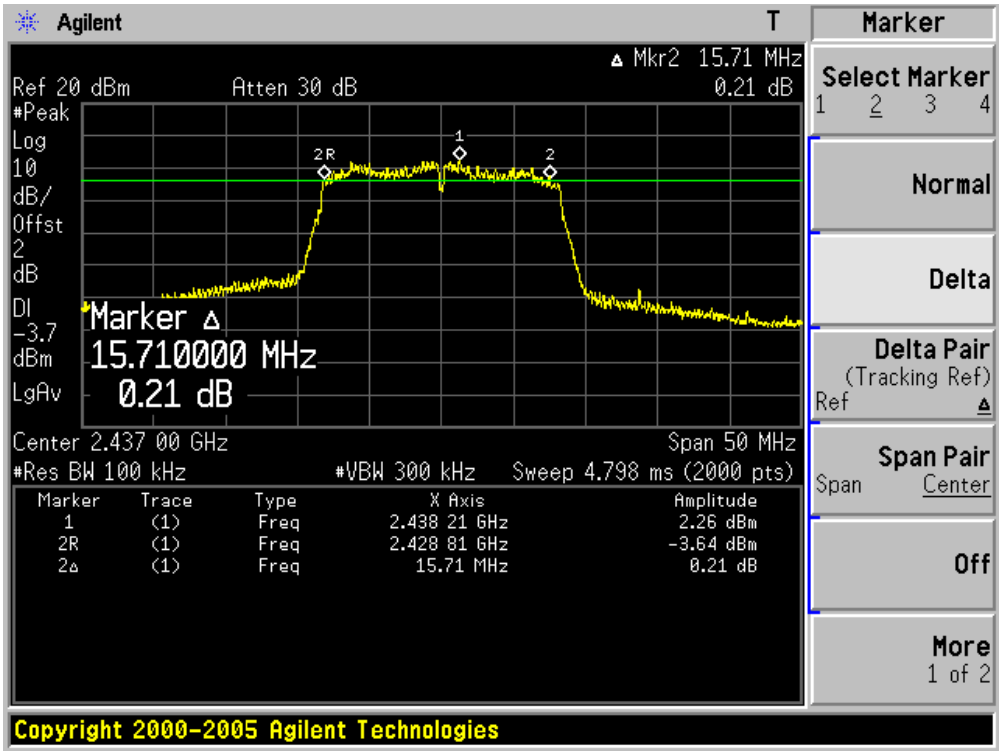
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 2)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	15730	500	Pass
06	2437	15710	500	Pass
11	2462	15710	500	Pass

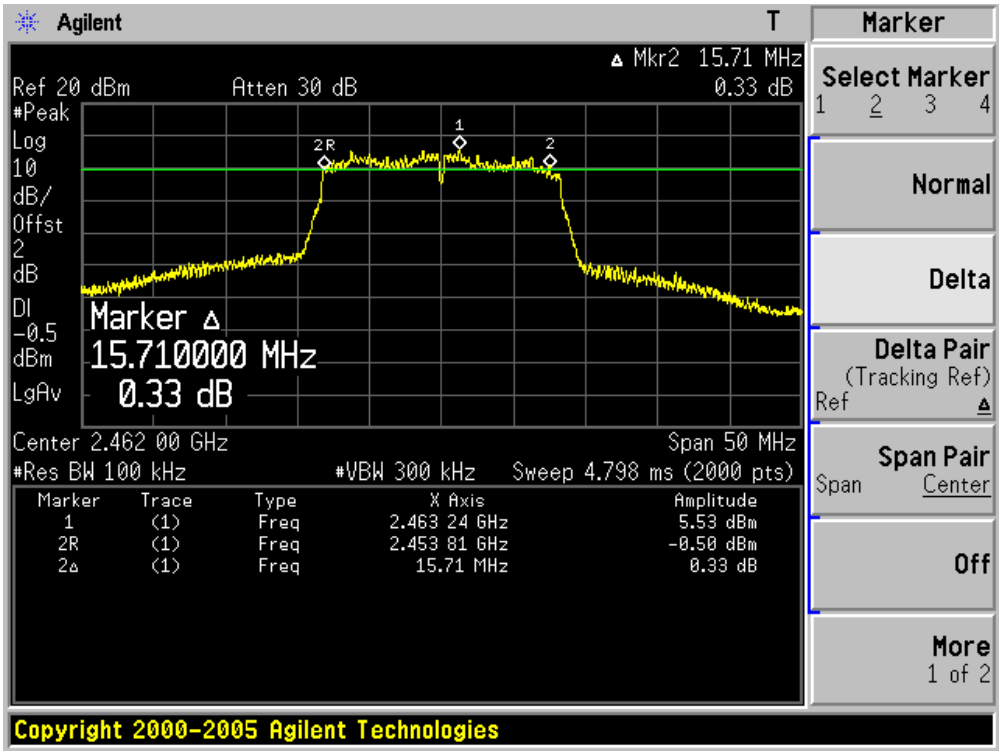
Channel 01 (2412MHz)



Channel 06 (2437MHz)



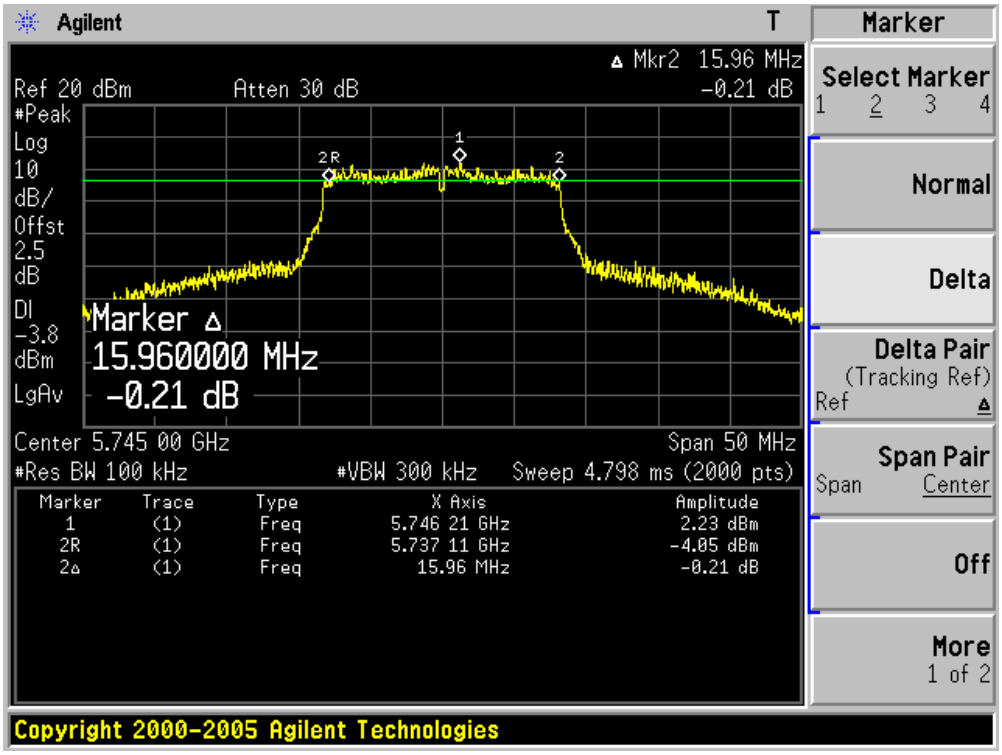
Channel 11 (2462MHz)



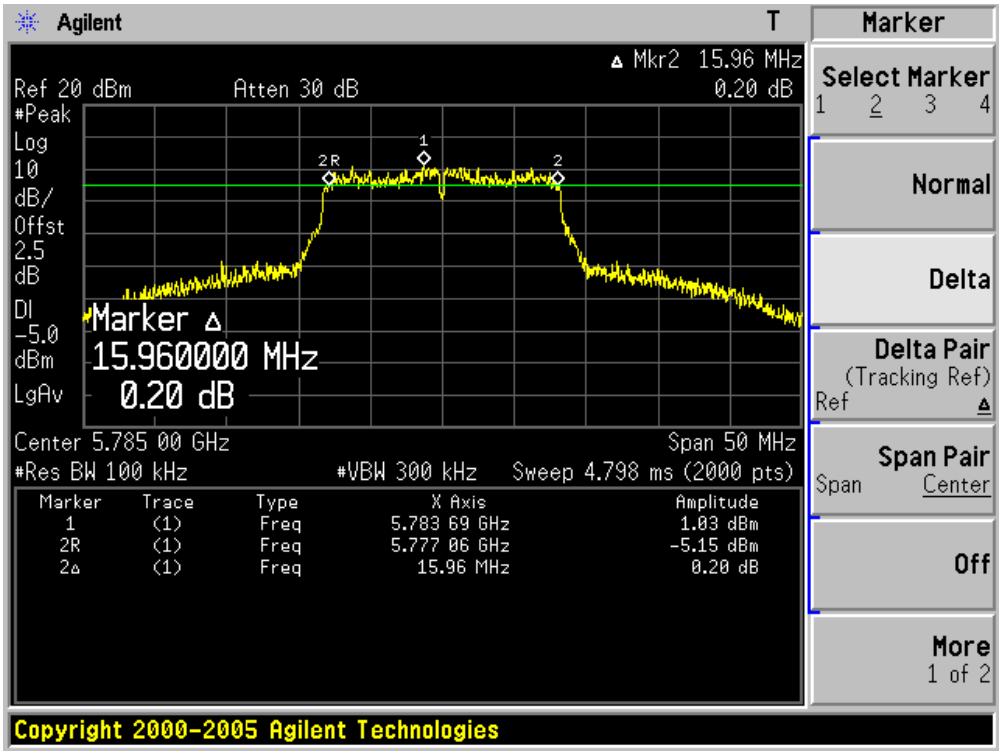
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 2)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
149	5745	15960	500	Pass
157	5785	15960	500	Pass
165	5825	15860	500	Pass

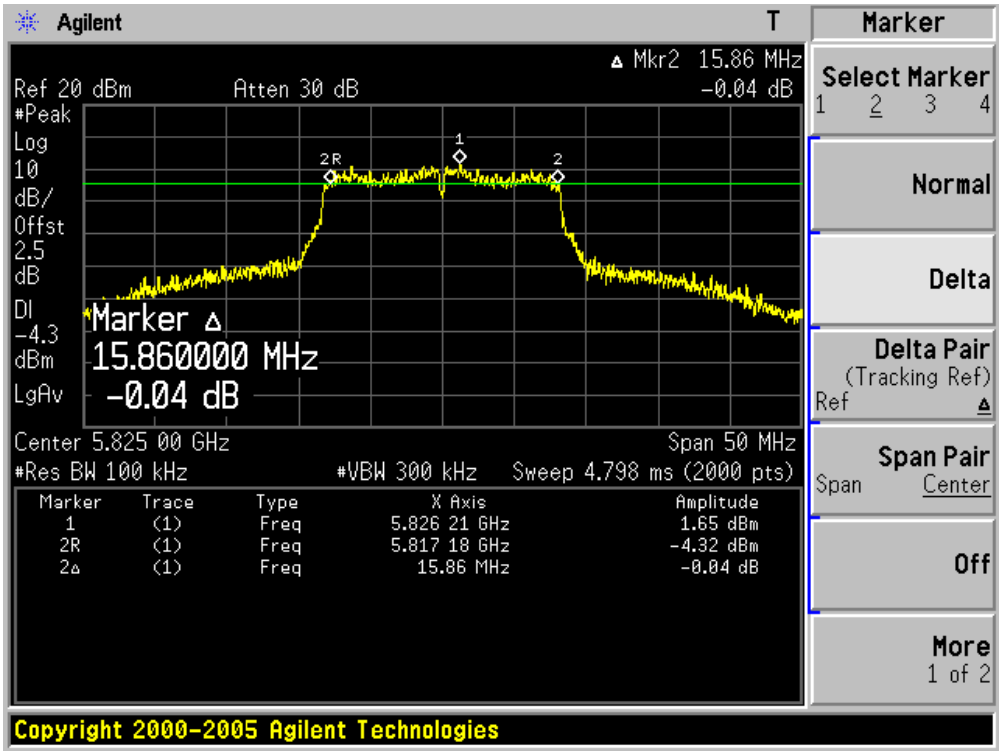
Channel 149 (5745MHz)



Channel 157 (5785MHz)



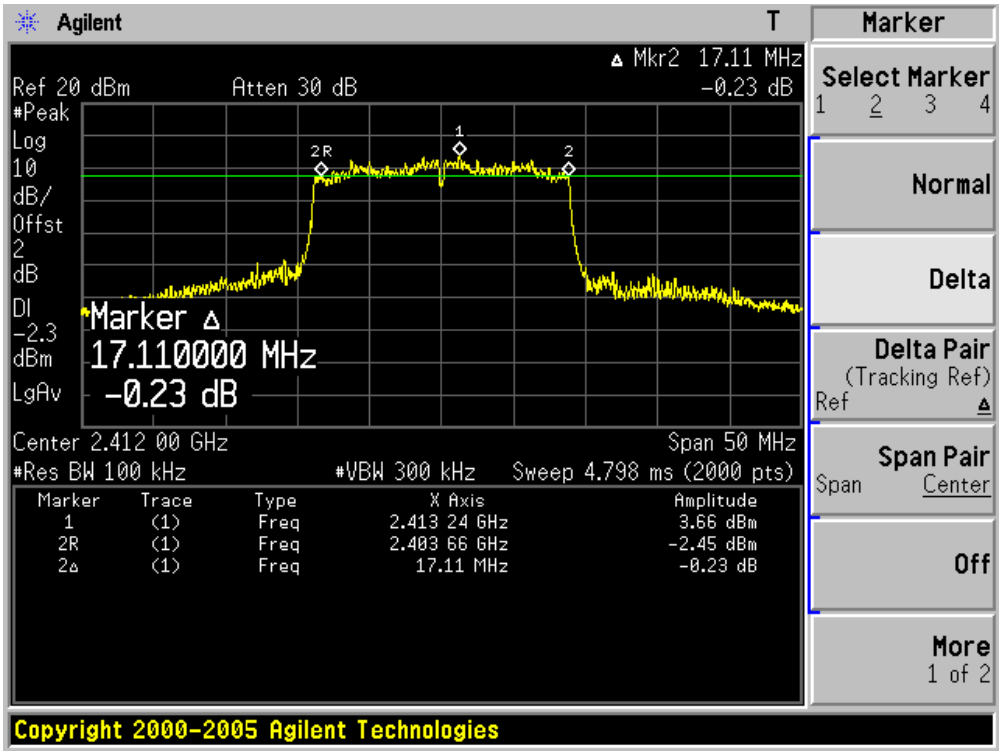
Channel 165 (5825MHz)



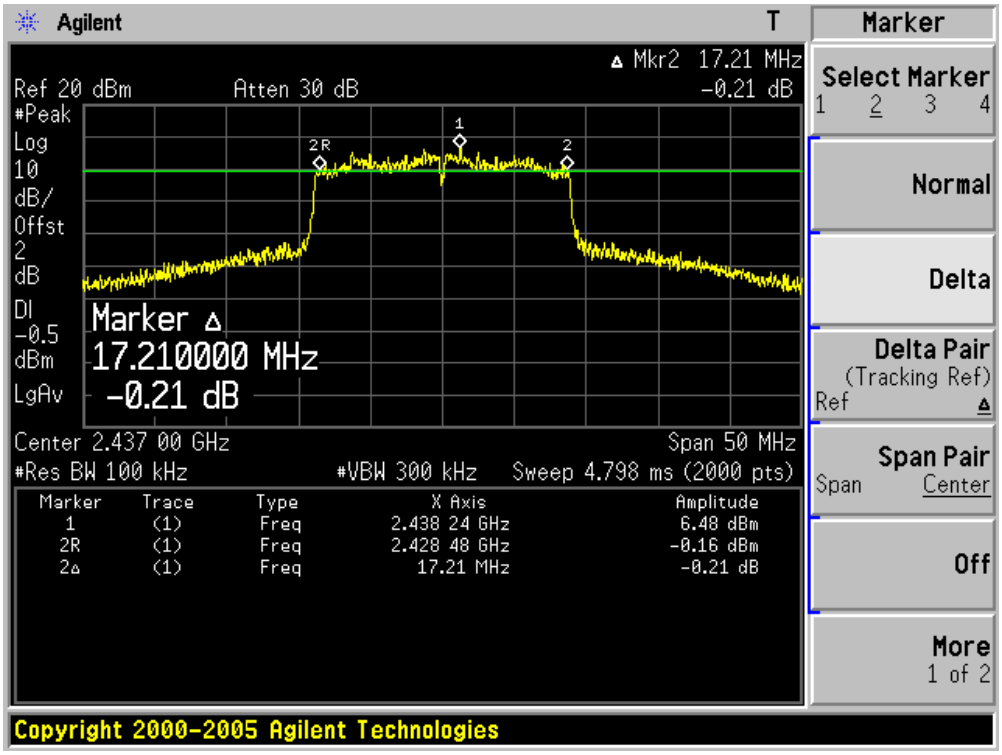
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 2)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	17110	500	Pass
06	2437	17210	500	Pass
11	2462	17280	500	Pass
149	5745	17230	500	Pass
157	5785	17180	500	Pass
165	5825	17180	500	Pass

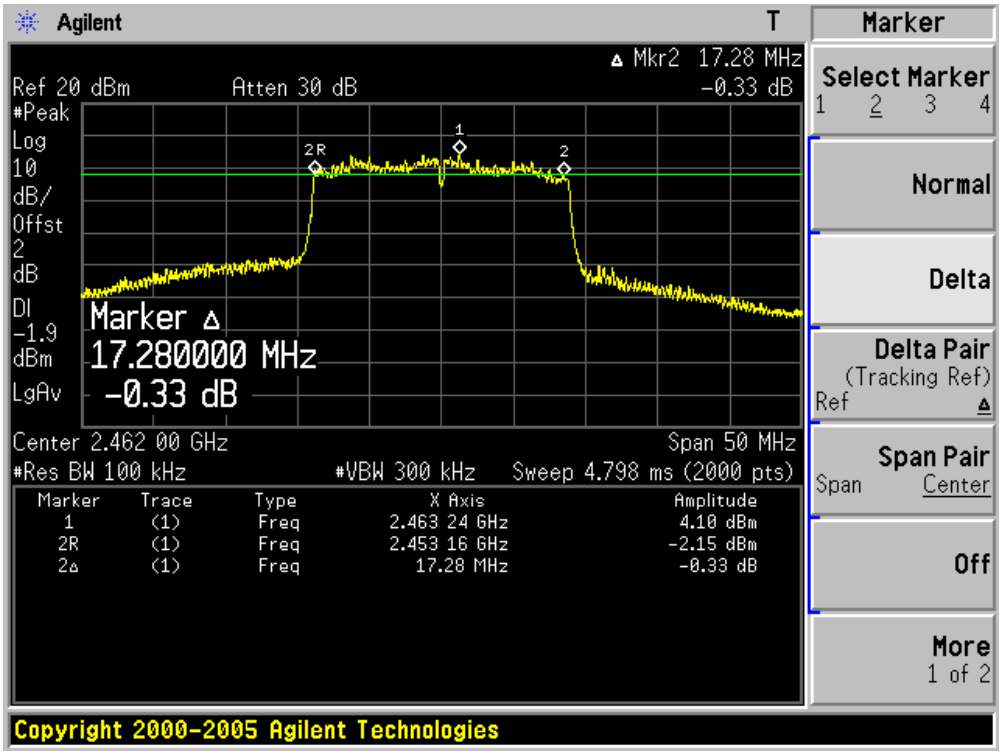
Channel 01 (2412MHz)



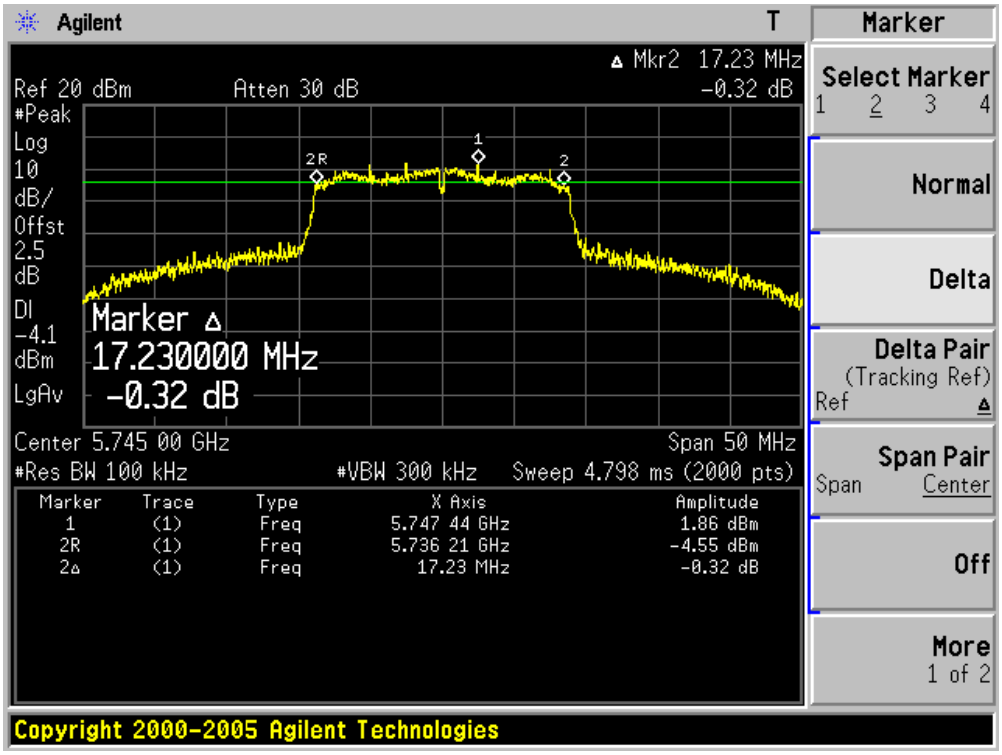
Channel 06 (2437MHz)



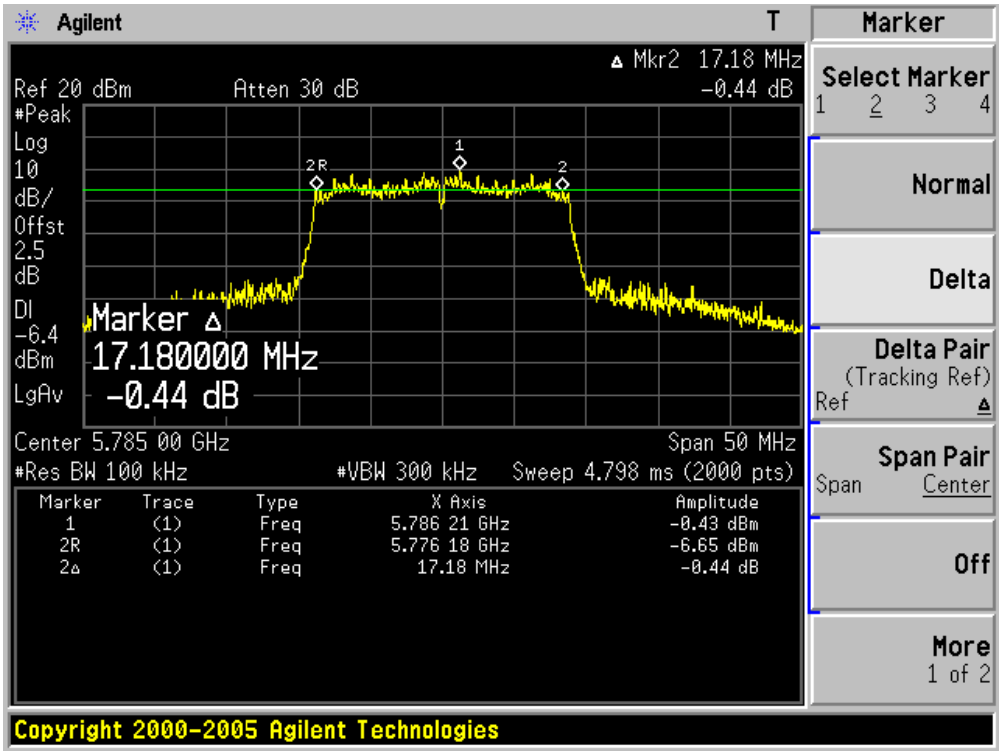
Channel 11 (2462MHz)



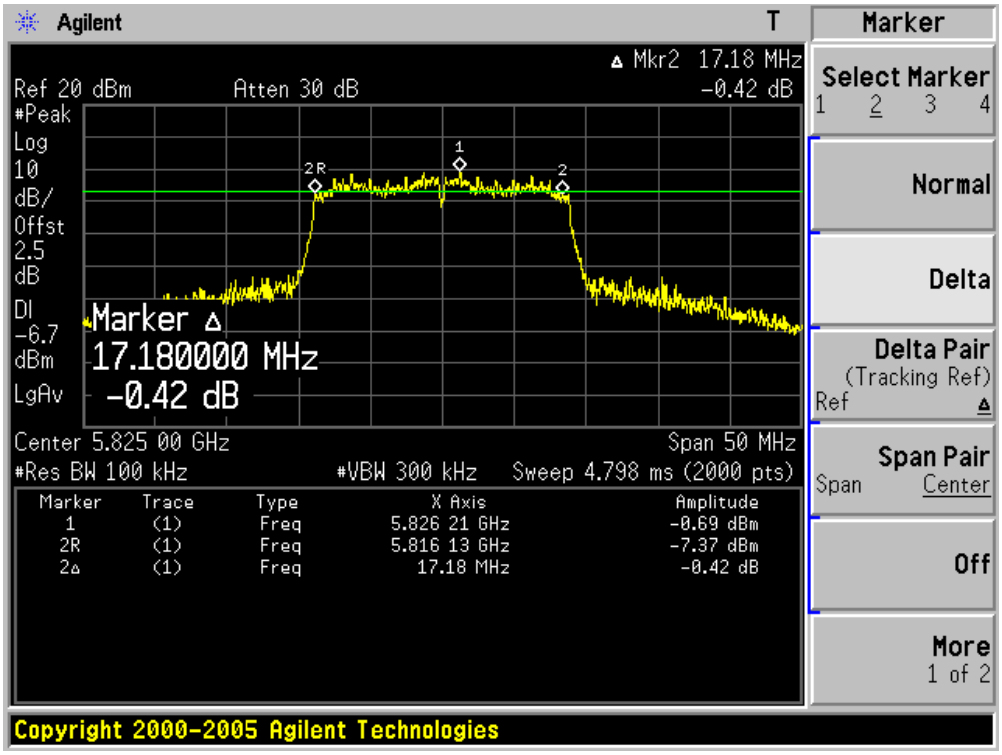
Channel 149 (5745MHz)



Channel 157 (5785MHz)



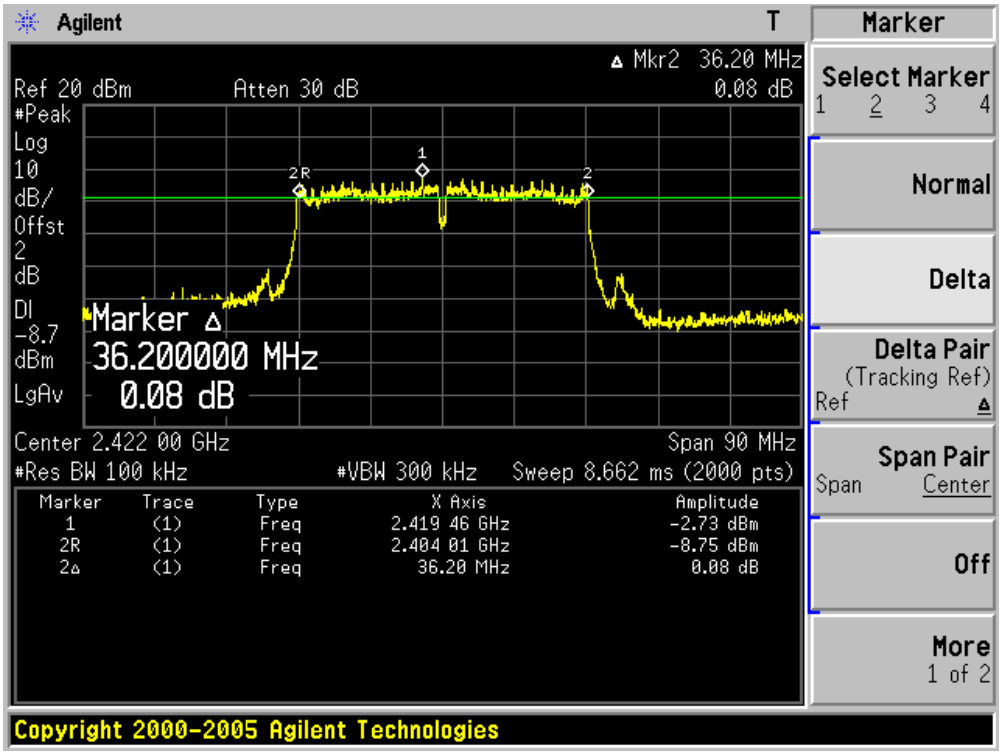
Channel 165 (5825MHz)



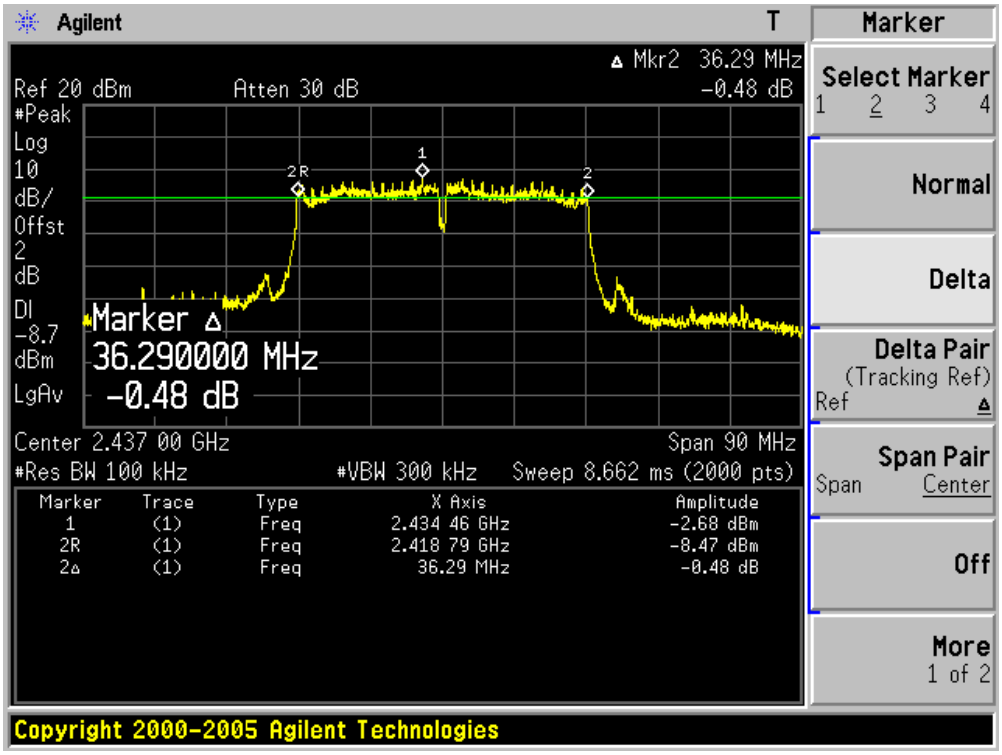
Product	:	IP-STB
Test Item	:	6dB Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 2)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
03	2422	36200	500	Pass
06	2437	26390	500	Pass
09	2452	36240	500	Pass
151	5755	36240	500	Pass
159	5795	36290	500	Pass

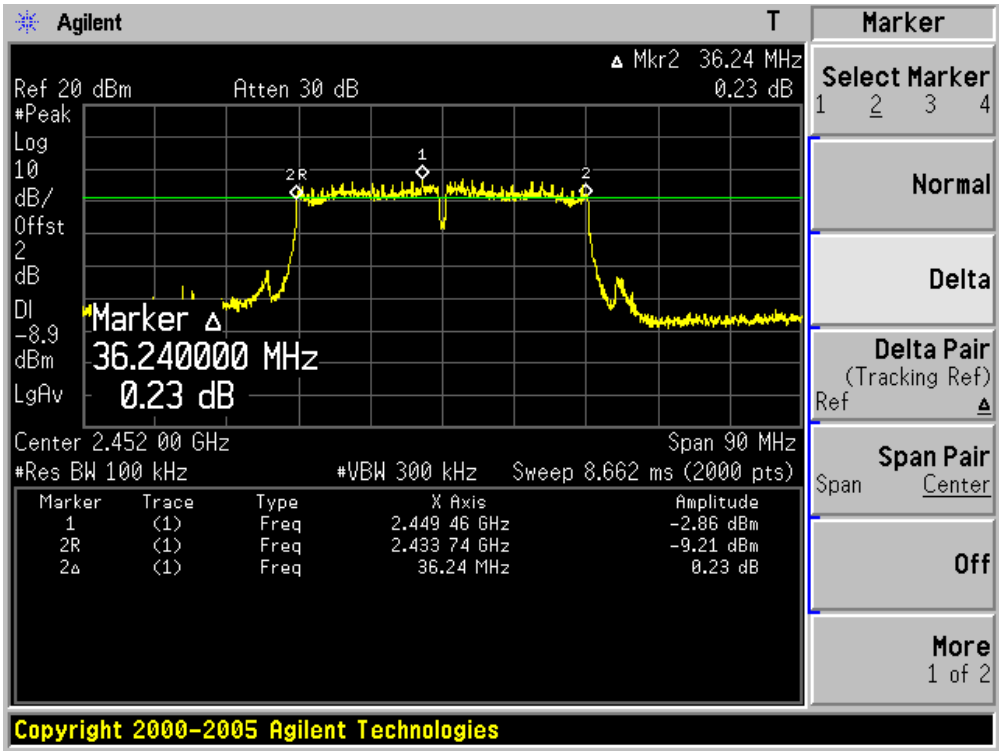
Channel 03 (2422MHz)



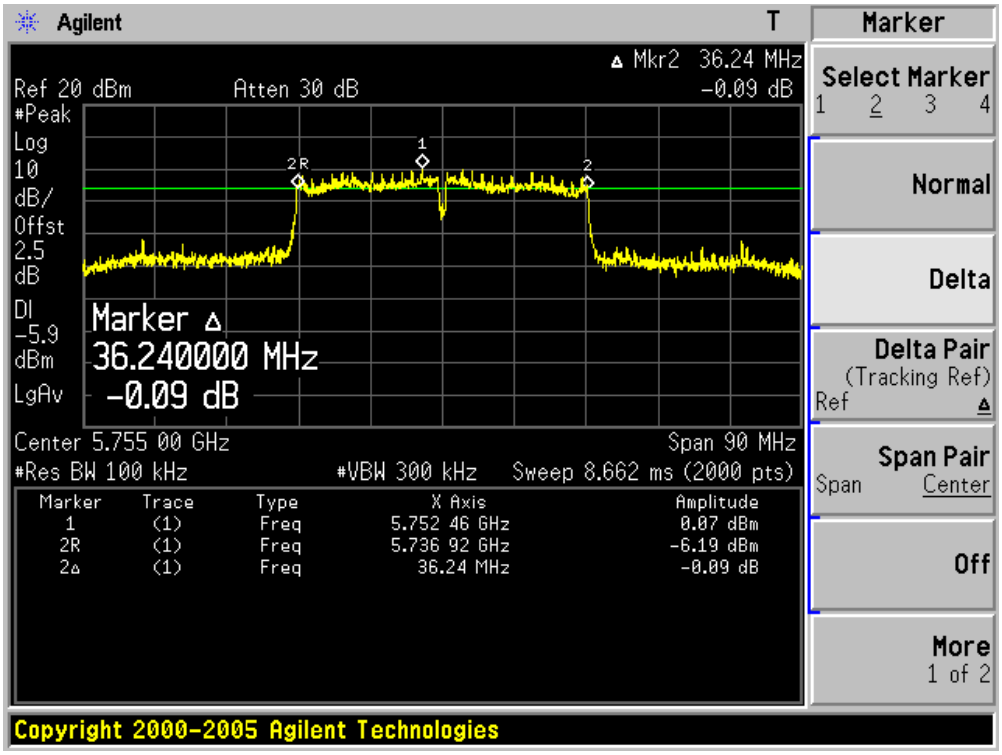
Channel 06 (2437MHz)



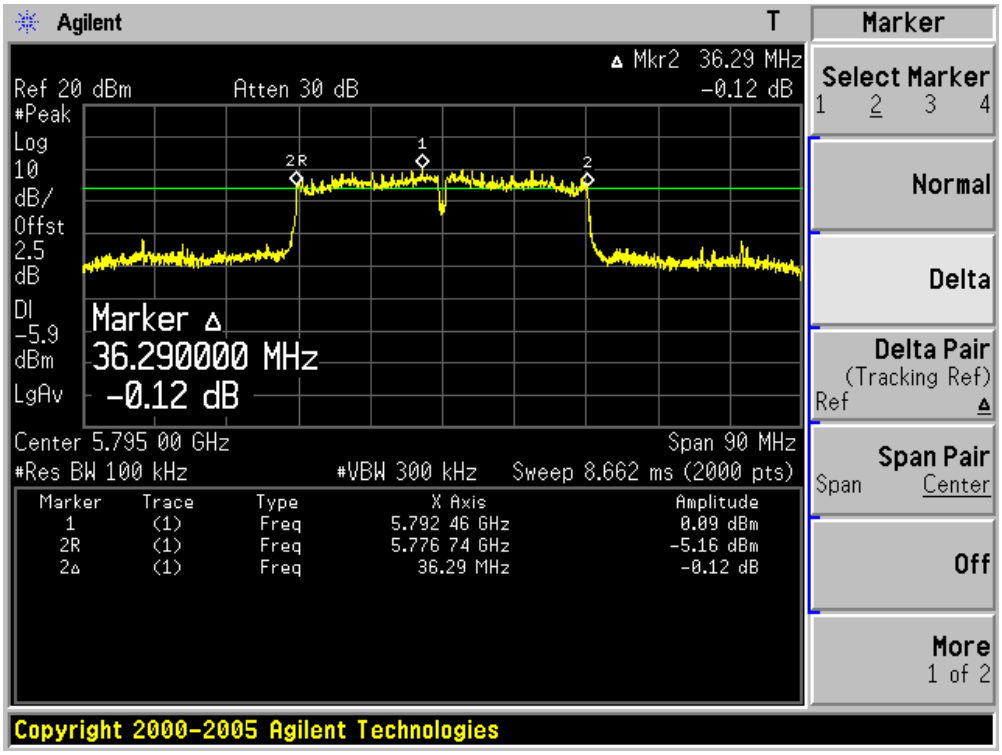
Channel 09 (2452MHz)



Channel 151 (5755MHz)



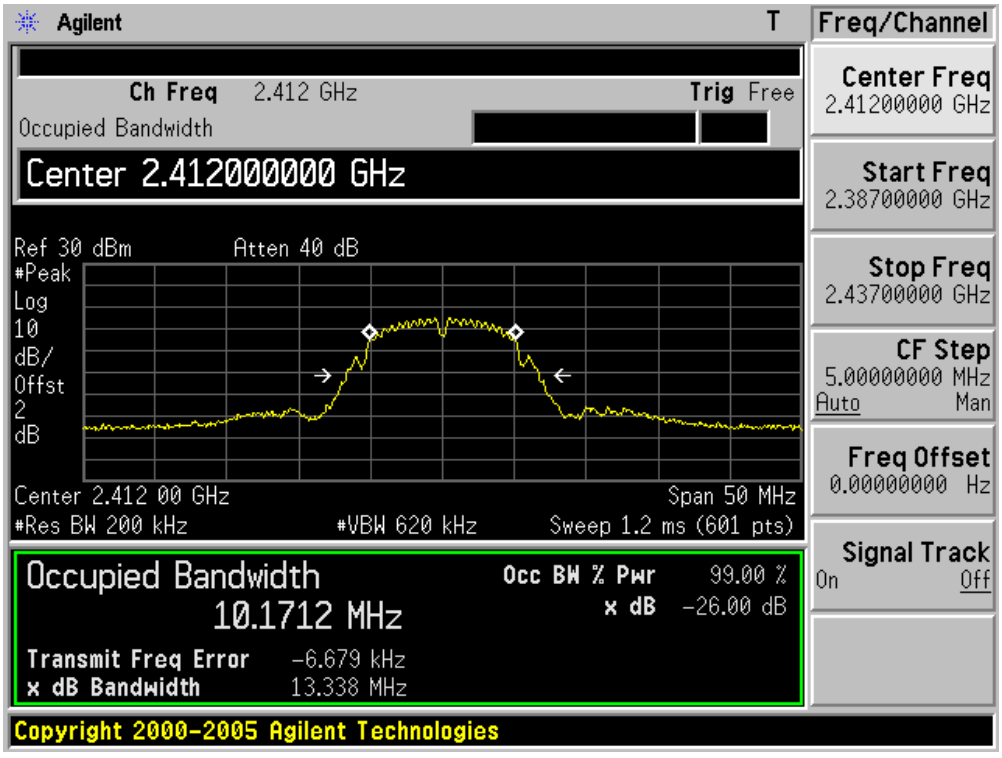
Channel 159 (5795MHz)



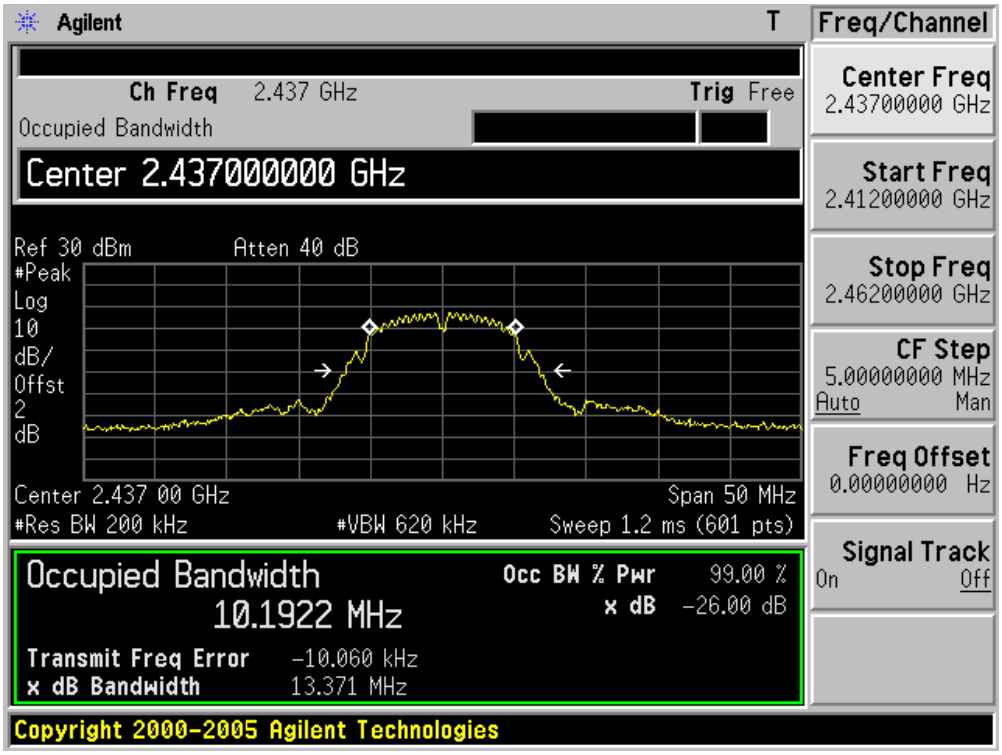
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	10171.2
06	2437	10192.2
11	2462	10219.1

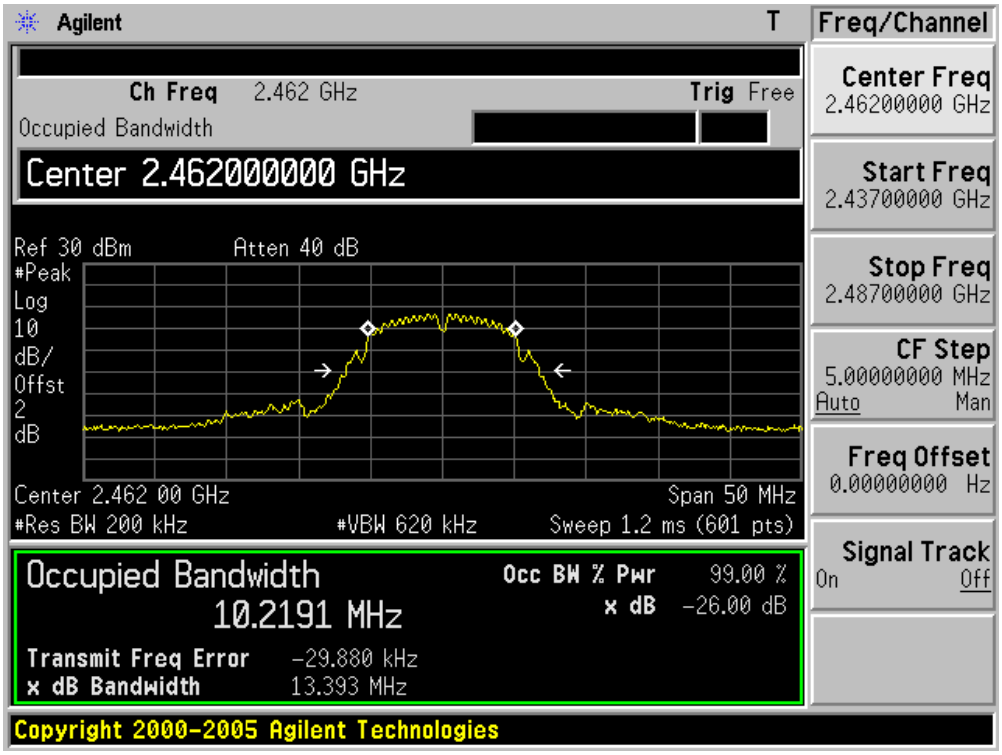
Channel 01 (2412MHz)



Channel 06 (2437MHz)



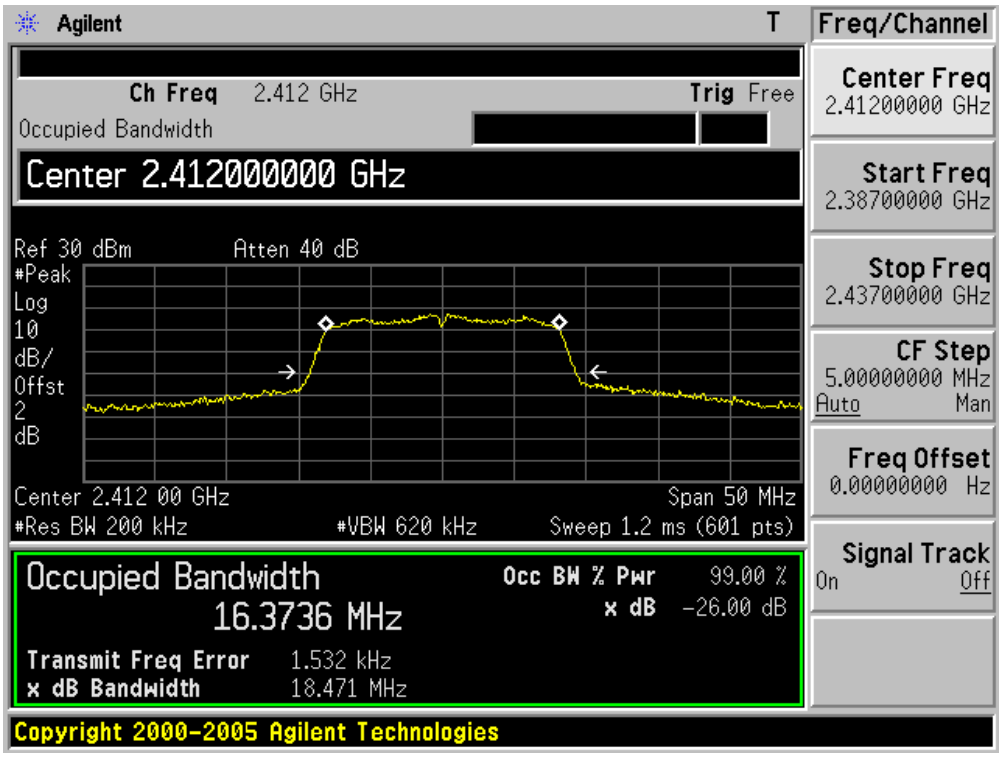
Channel 11 (2462MHz)



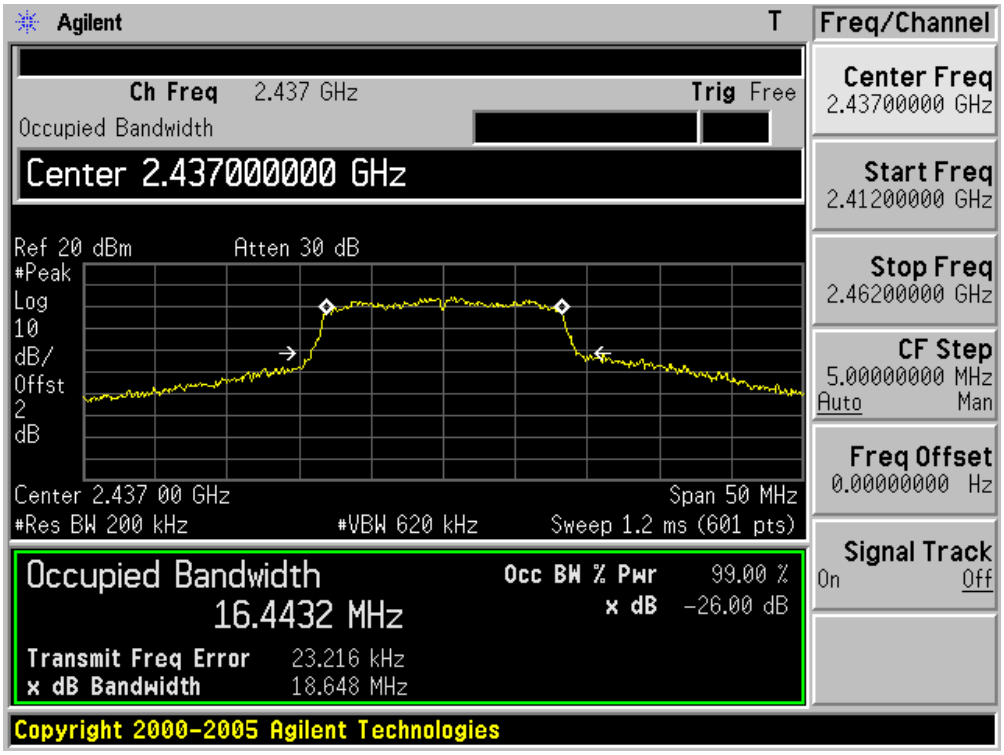
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	16373.6
06	2437	16443.2
11	2462	16392.7

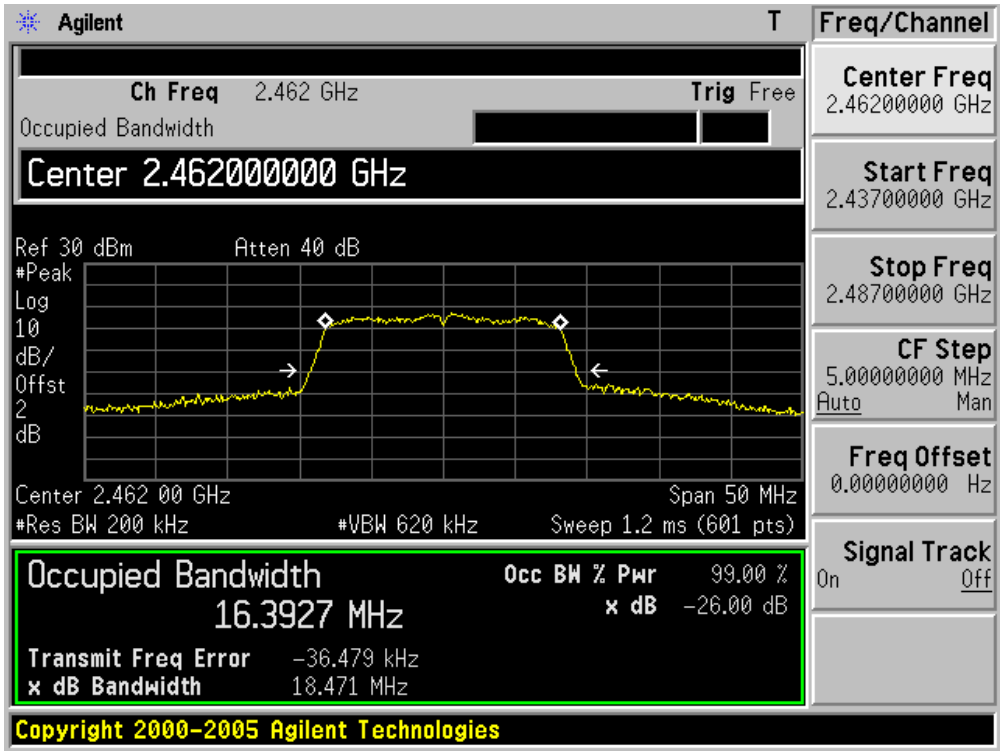
Channel 01 (2412MHz)



Channel 06 (2437MHz)



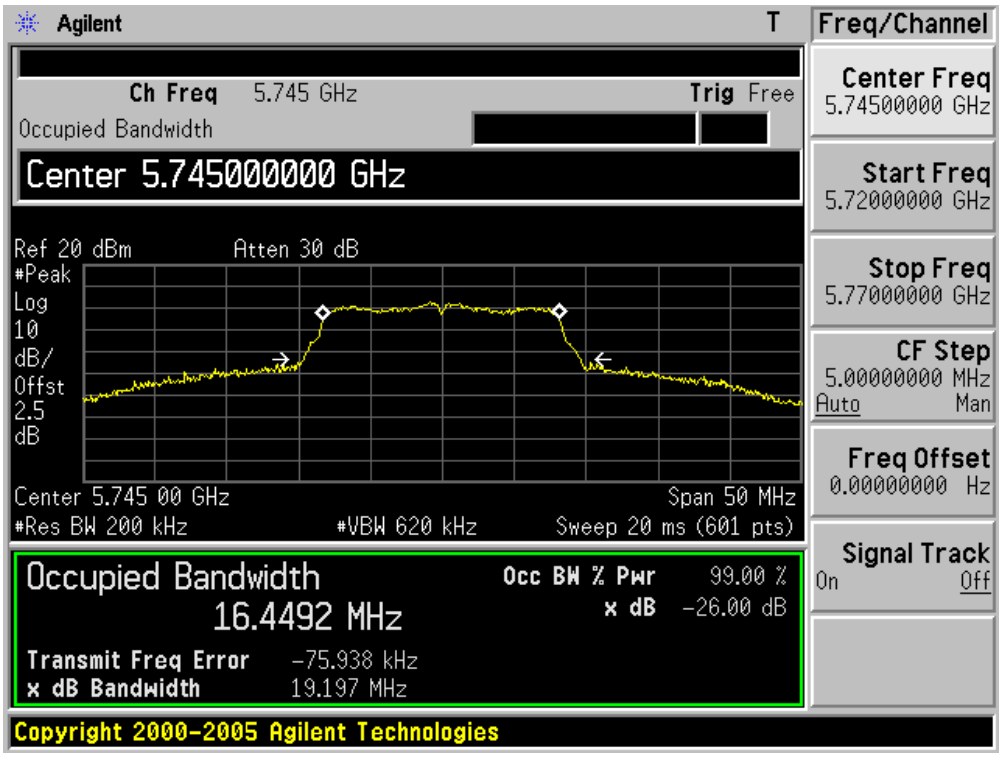
Channel 11 (2462MHz)



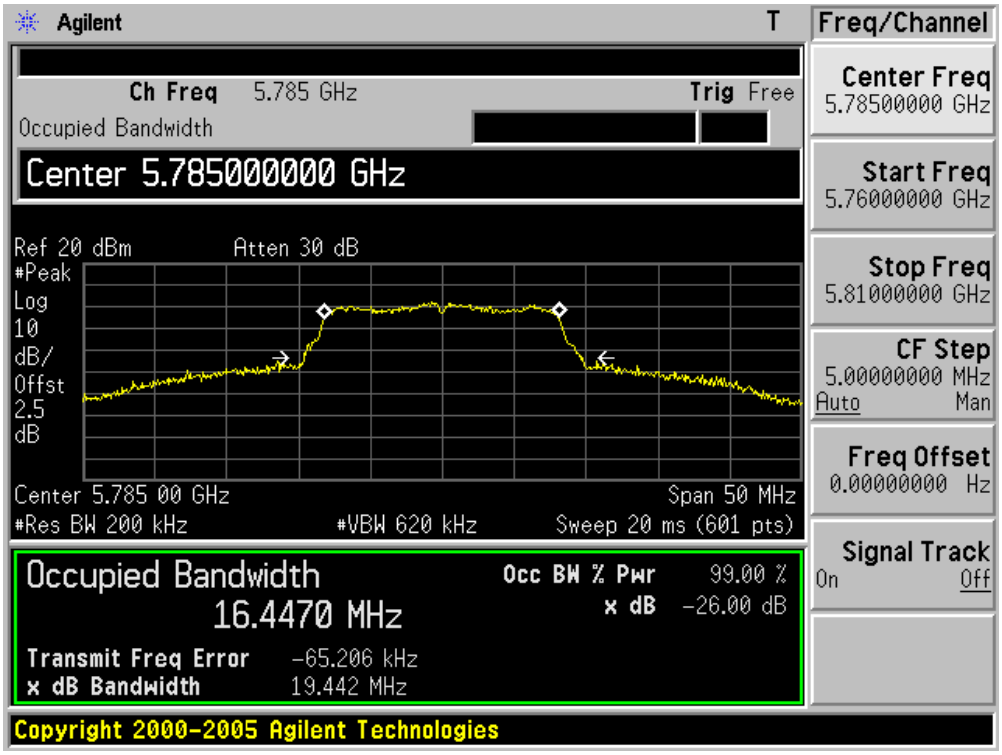
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
149	5745	16449.2
157	5785	16447.0
165	5825	16471.8

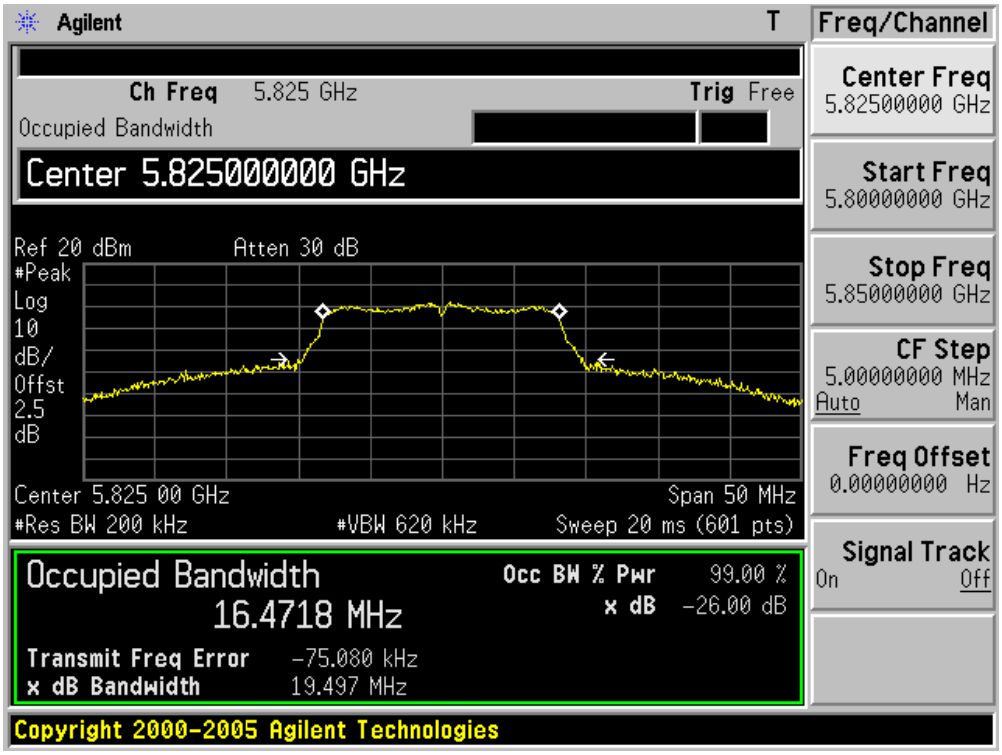
Channel 149 (5745MHz)



Channel 157 (5785MHz)



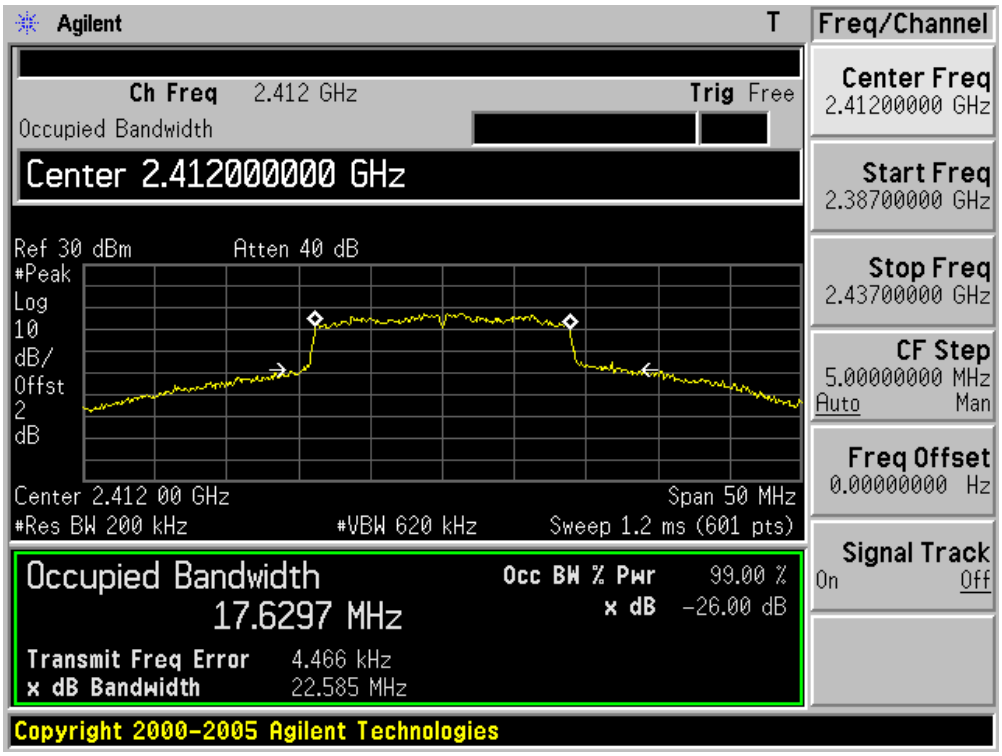
Channel 165 (5825MHz)



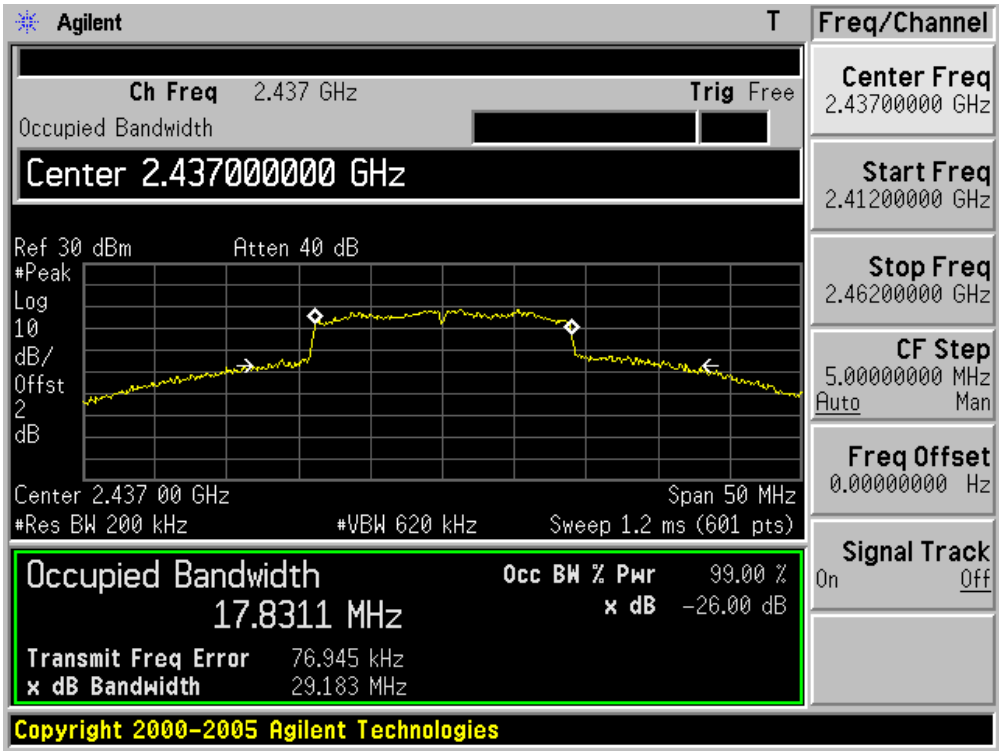
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	17629.7
06	2437	17831.1
11	2462	17537.8
149	5745	17589.2
157	5785	17587.9
165	5825	17563.1

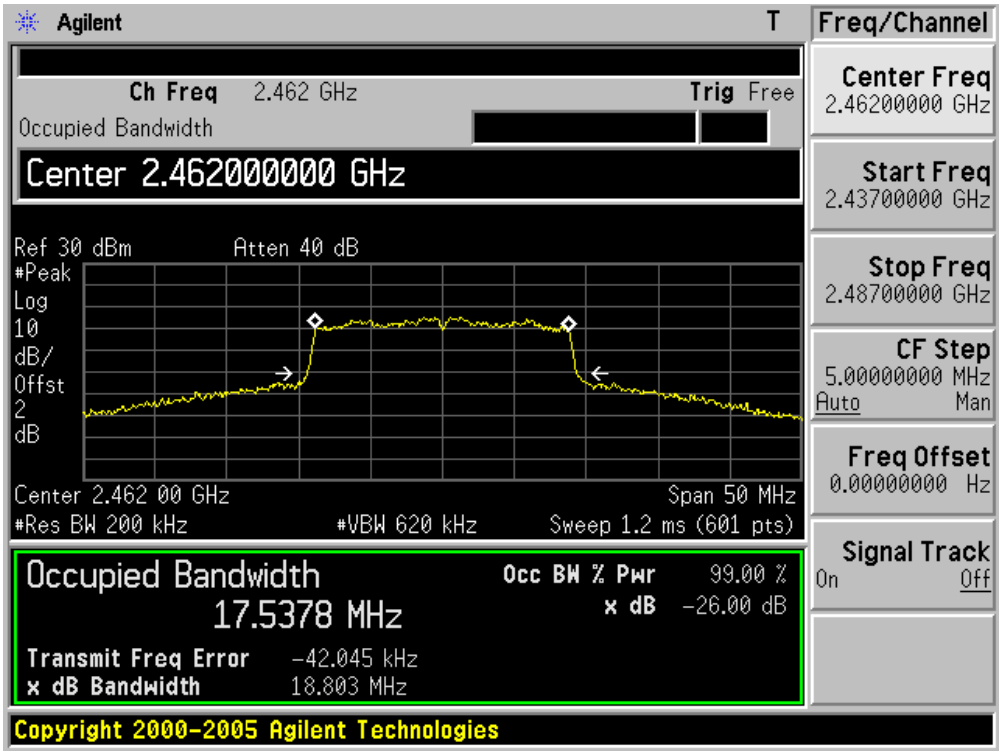
Channel 01 (2412MHz)



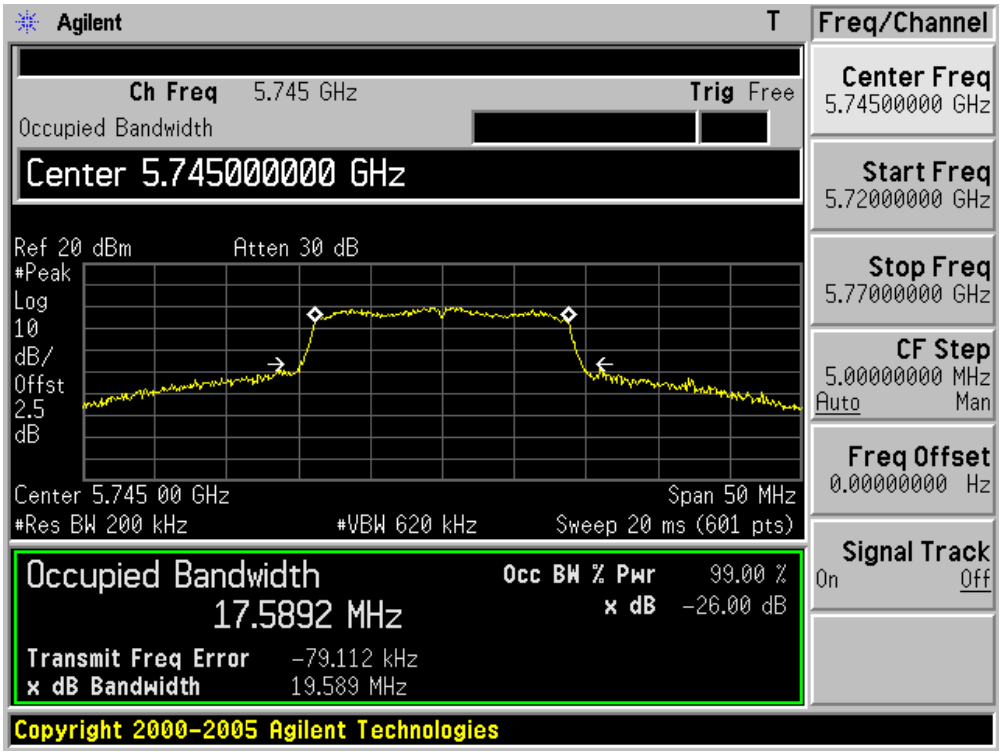
Channel 06 (2437MHz)



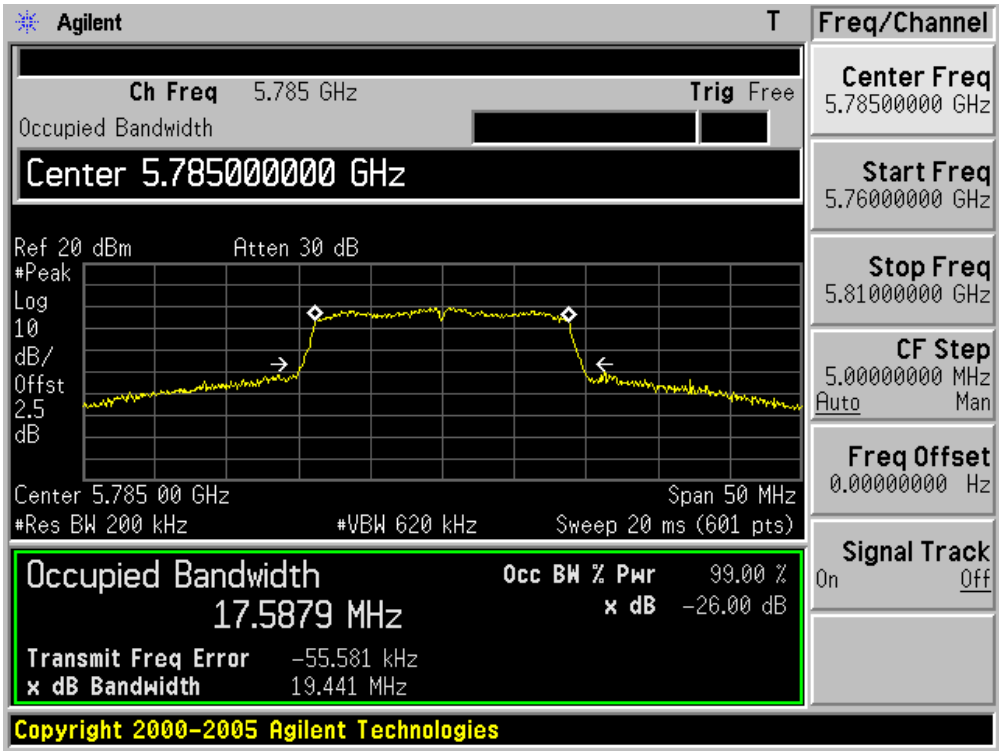
Channel 11 (2462MHz)



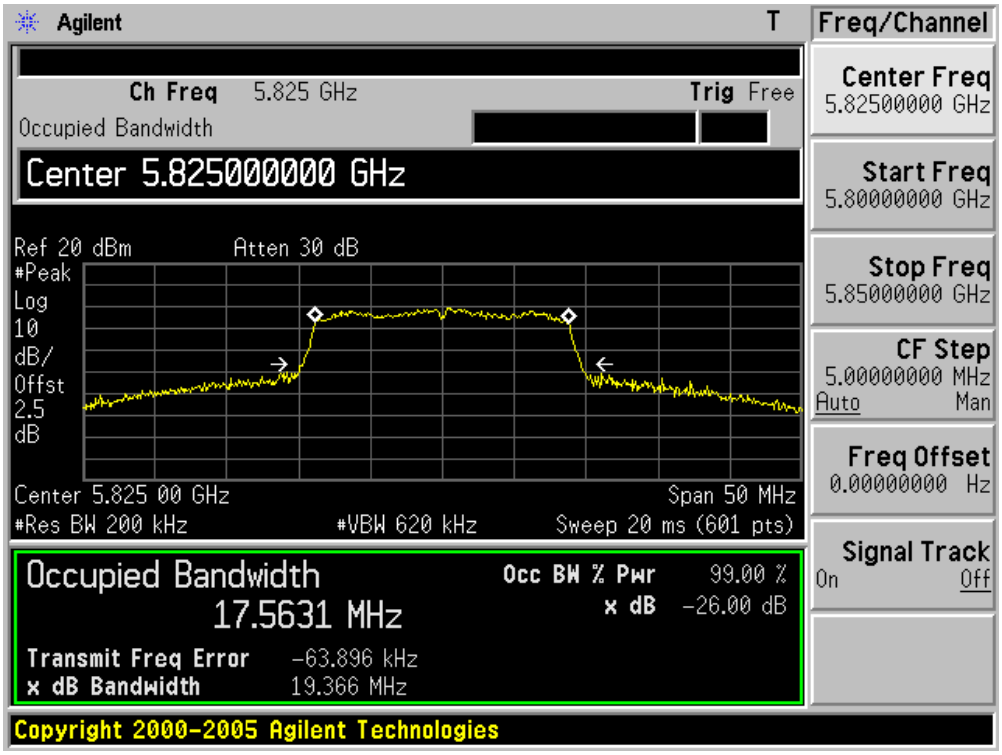
Channel 149 (5745MHz)



Channel 157 (5785MHz)



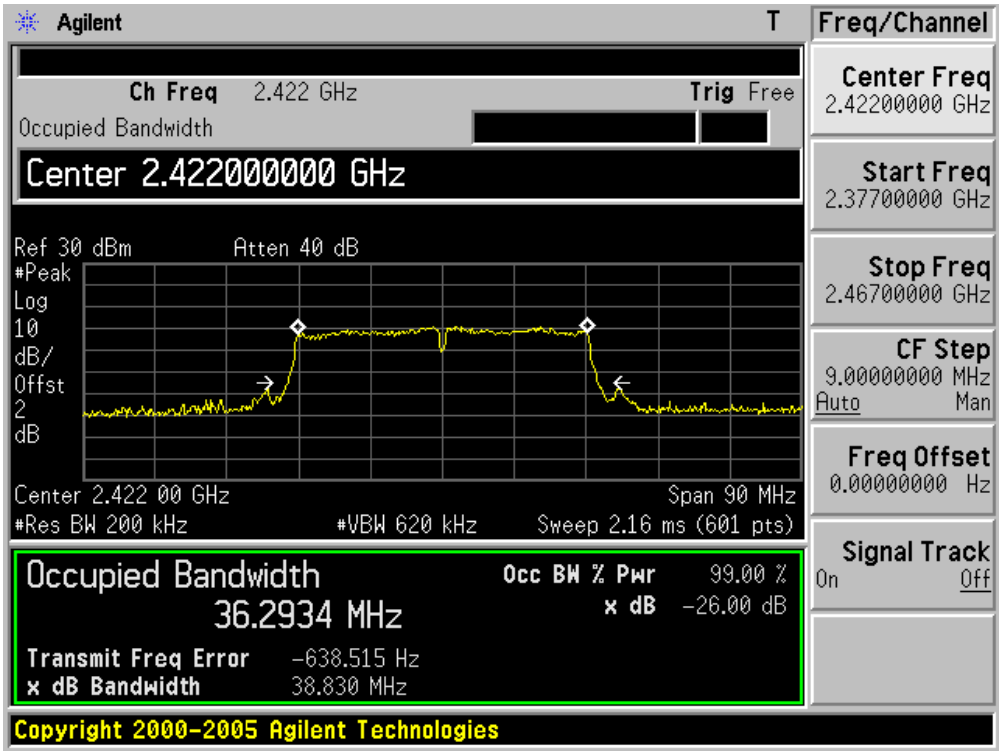
Channel 165 (5825MHz)



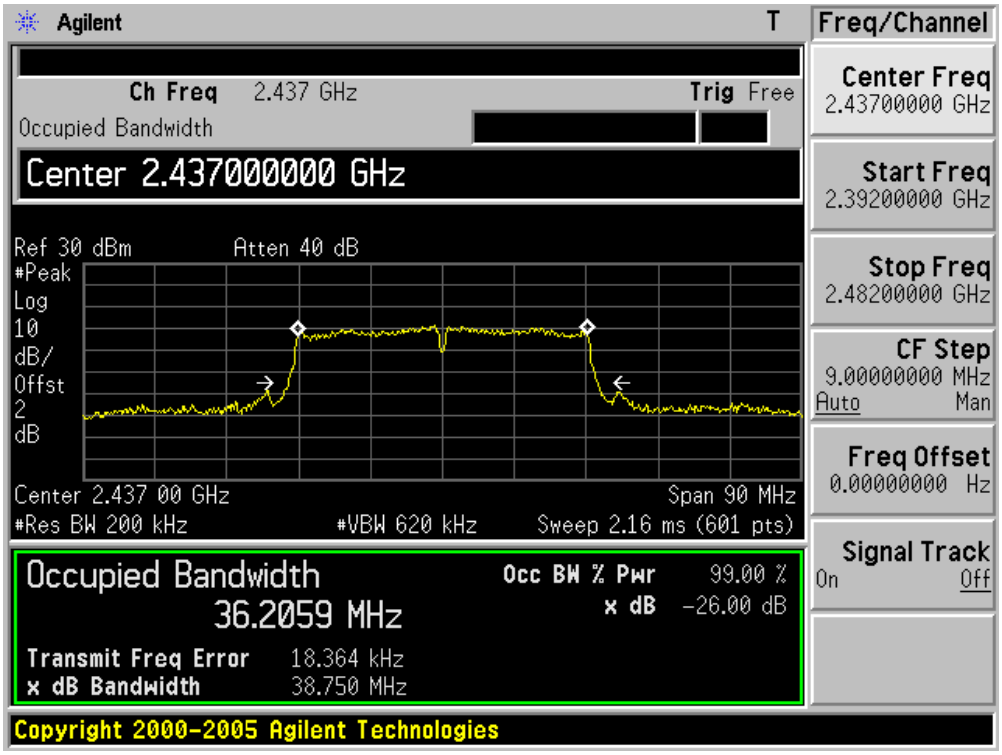
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 1)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
03	2422	36293.4
06	2437	36205.9
09	2452	36309.5
151	5755	36255.0
159	5795	36261.6

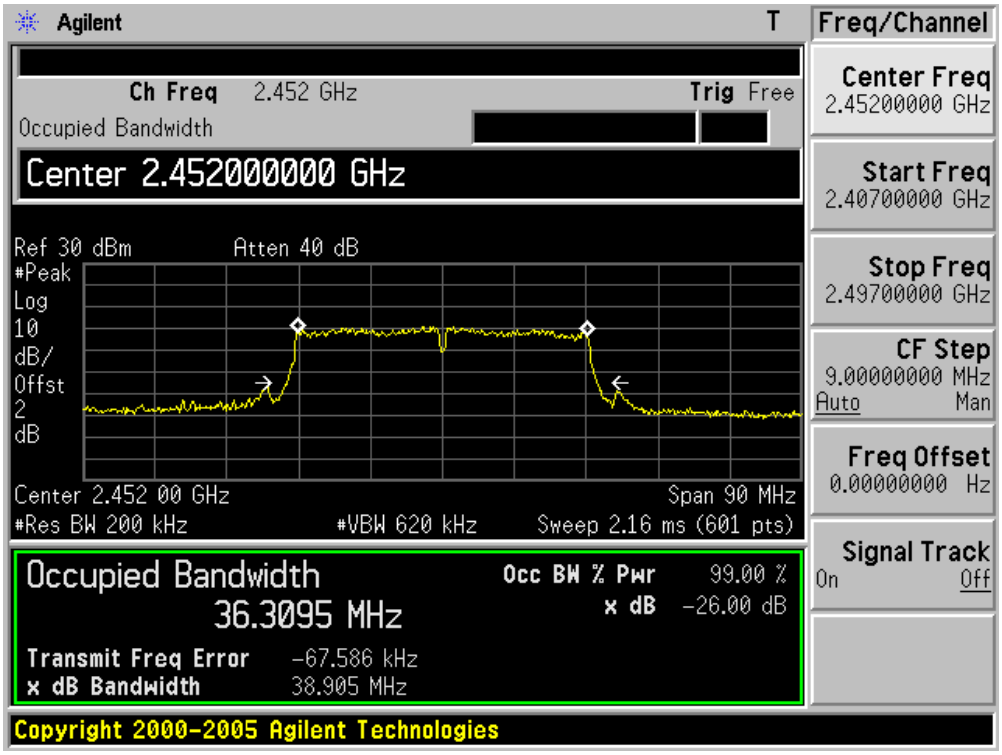
Channel 03 (2422MHz)



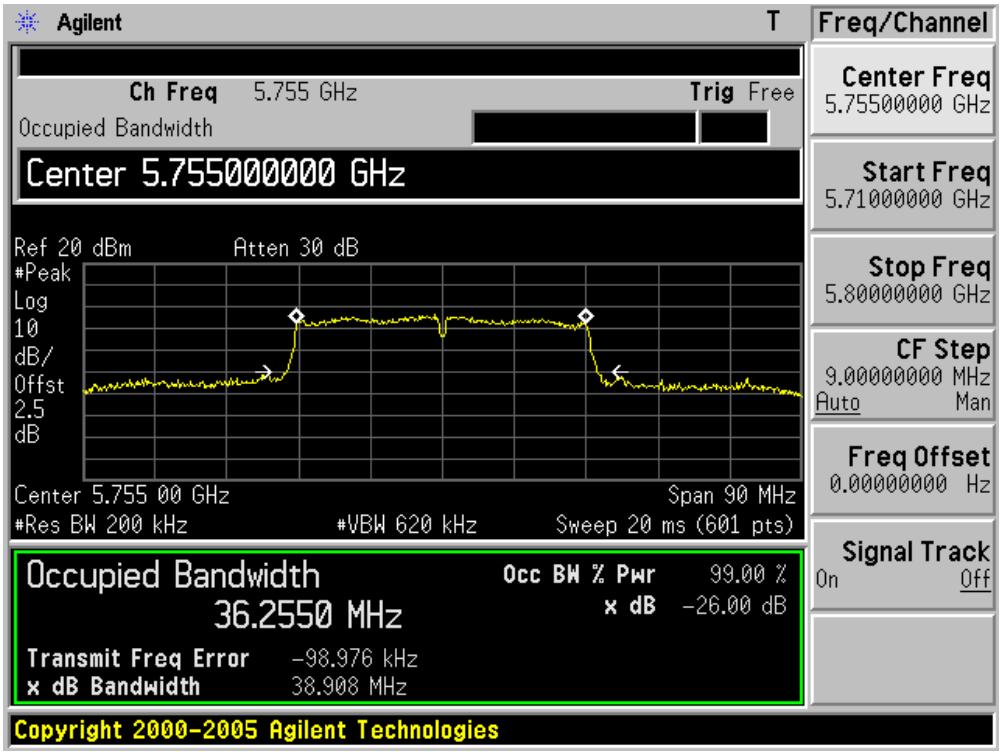
Channel 06 (2437MHz)



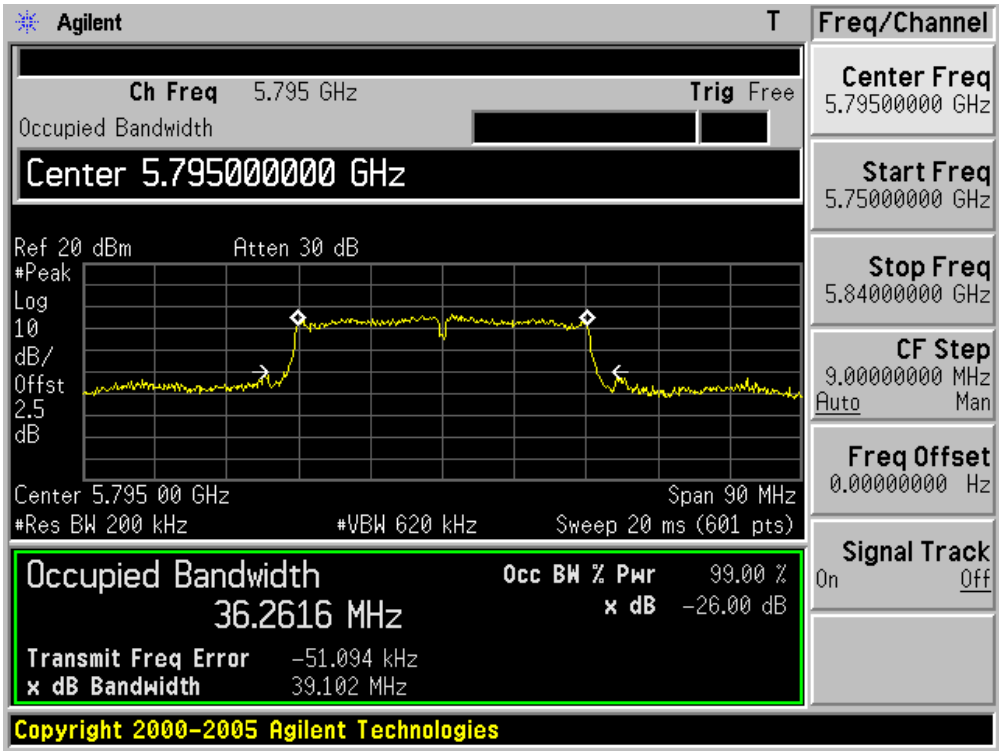
Channel 09 (2452MHz)



Channel 151 (5755MHz)



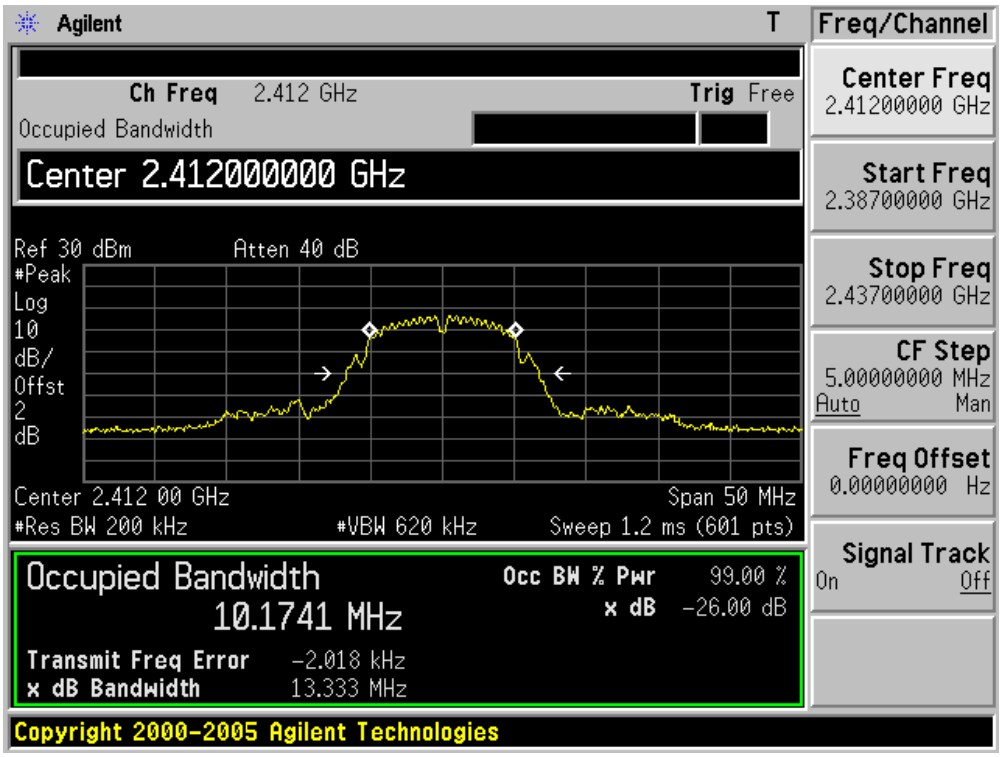
Channel 159 (5795MHz)



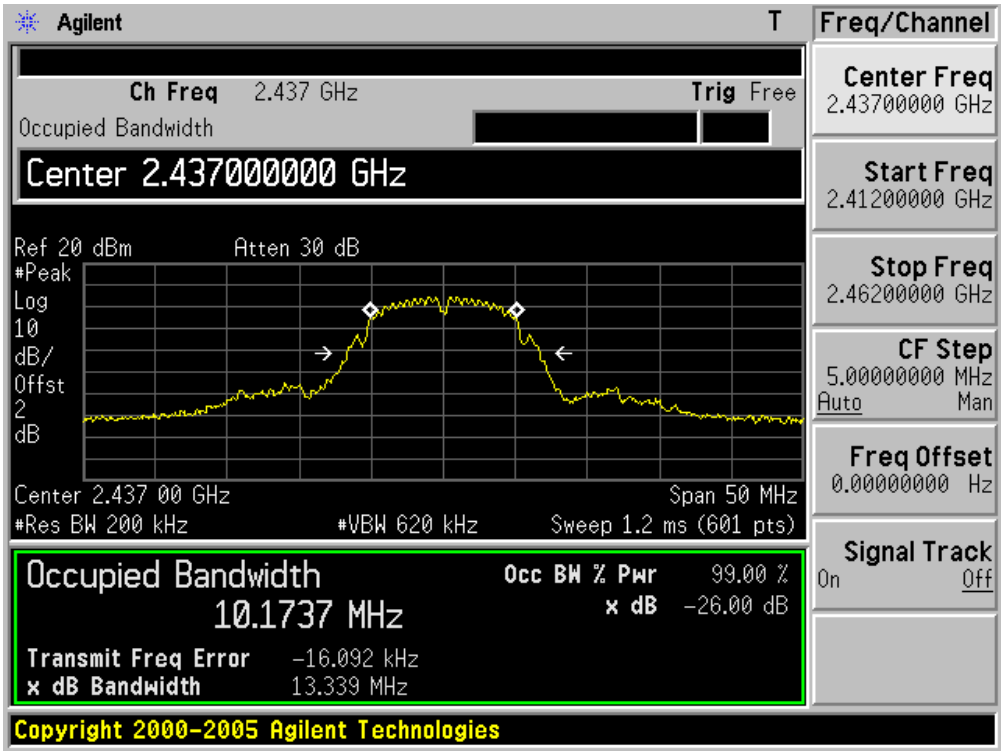
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 2)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	10174.1
06	2437	10173.7
11	2462	10185.1

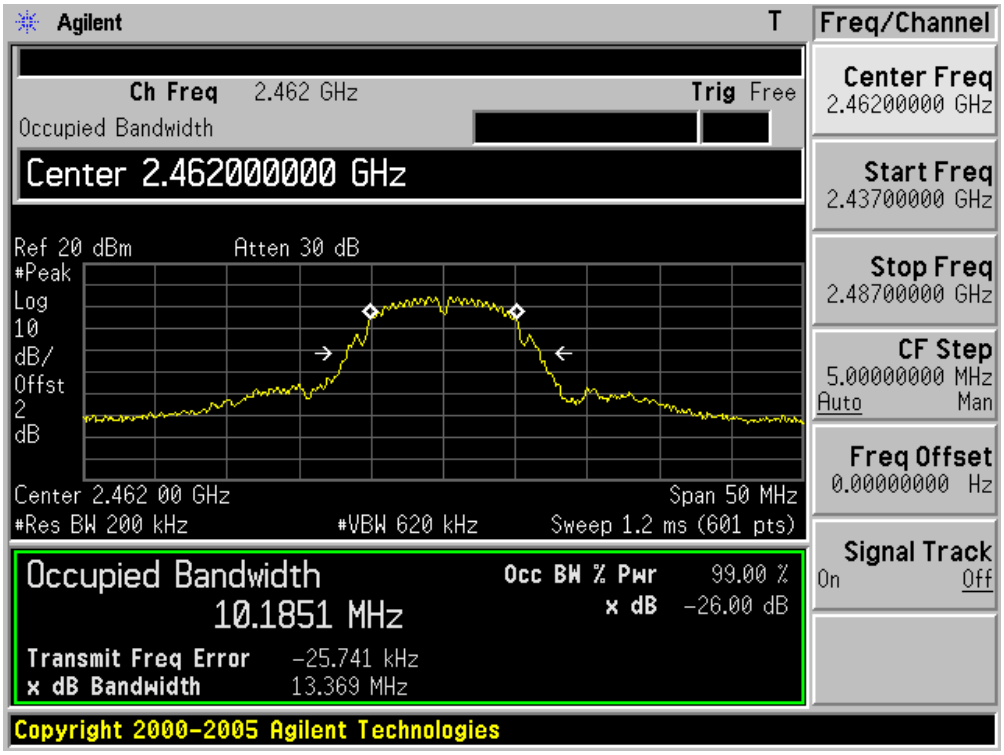
Channel 01 (2412MHz)



Channel 06 (2437MHz)



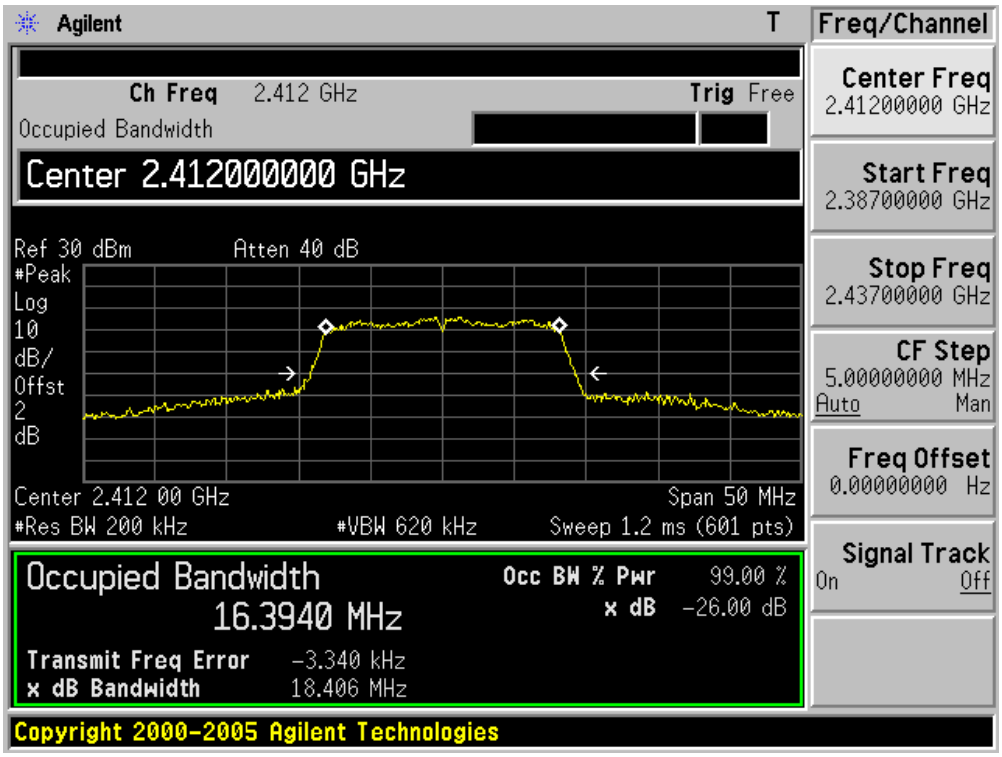
Channel 11 (2462MHz)



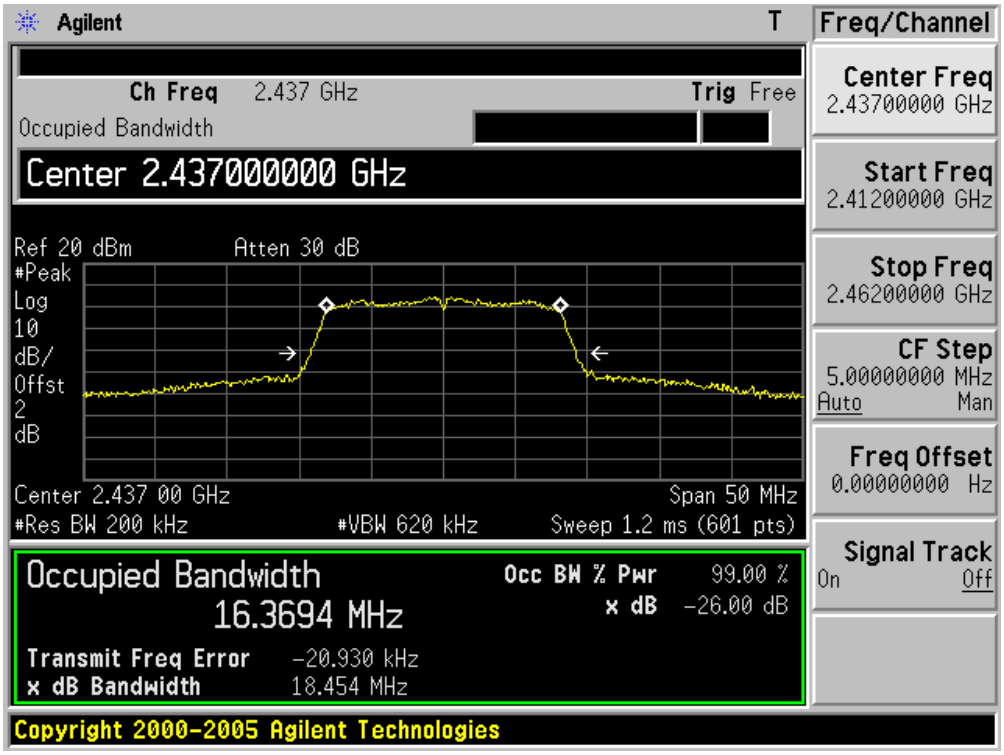
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 2)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	16394.0
06	2437	16369.4
11	2462	16397.4

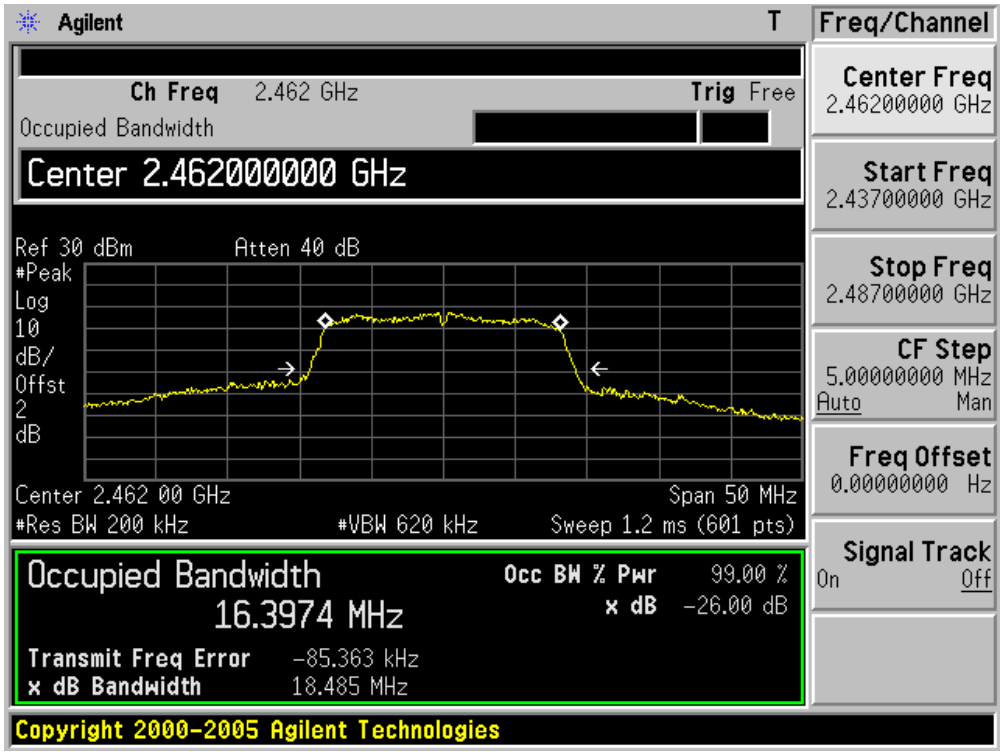
Channel 01 (2412MHz)



Channel 06 (2437MHz)



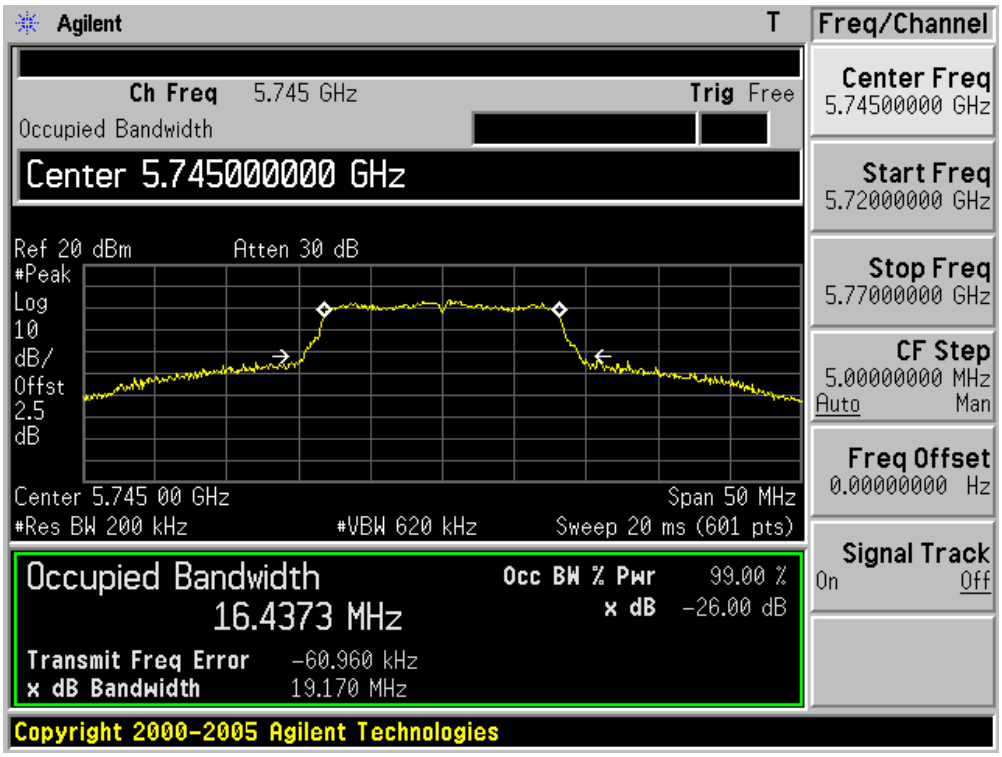
Channel 11 (2462MHz)



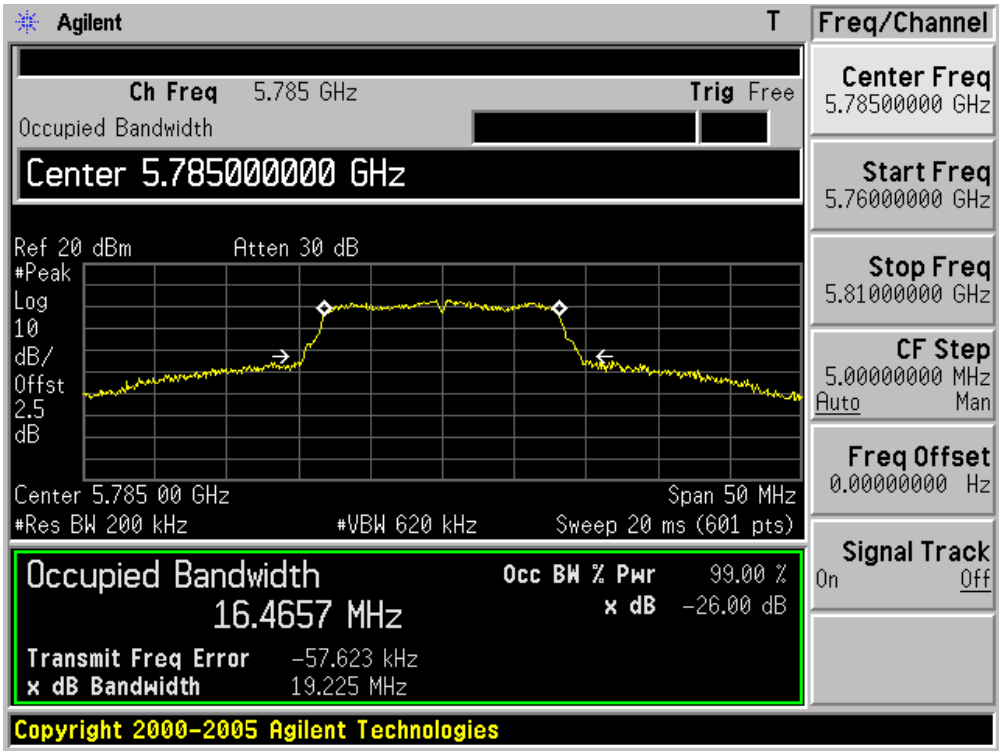
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 2)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
149	5745	16437.3
157	5785	16465.7
165	5825	16441.9

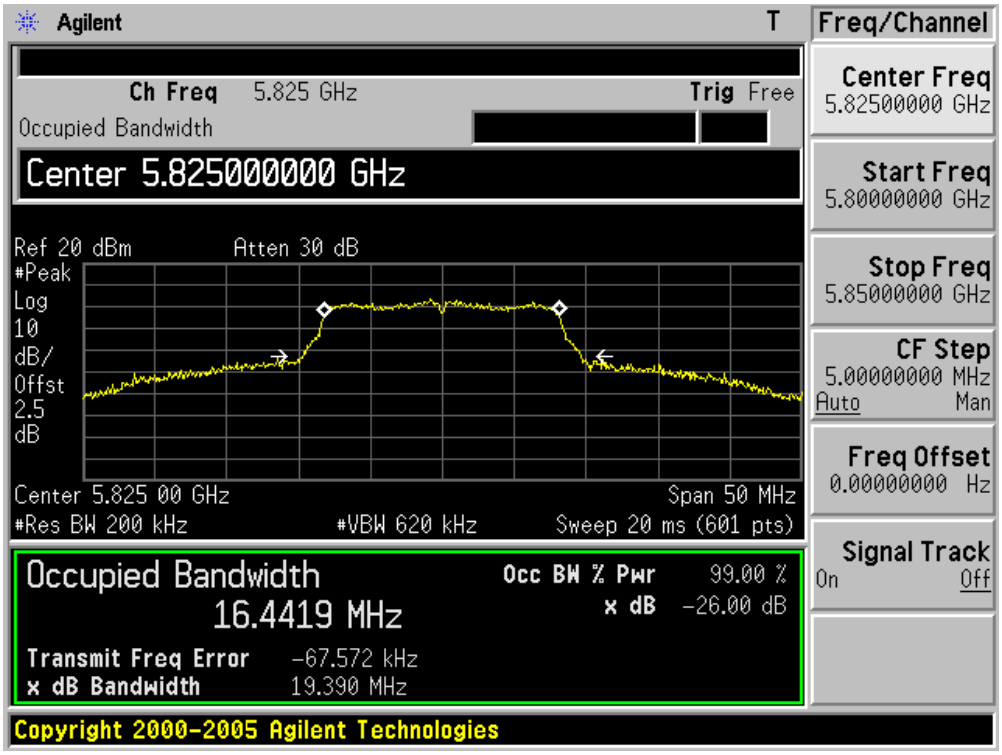
Channel 149 (5745MHz)



Channel 157 (5785MHz)



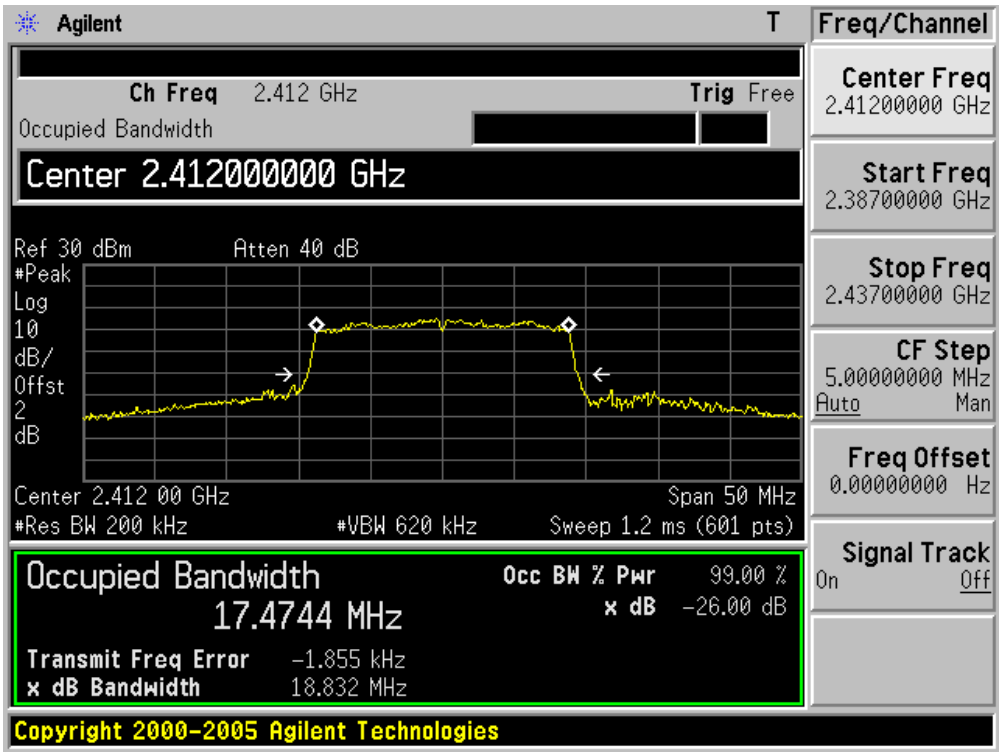
Channel 165 (5825MHz)



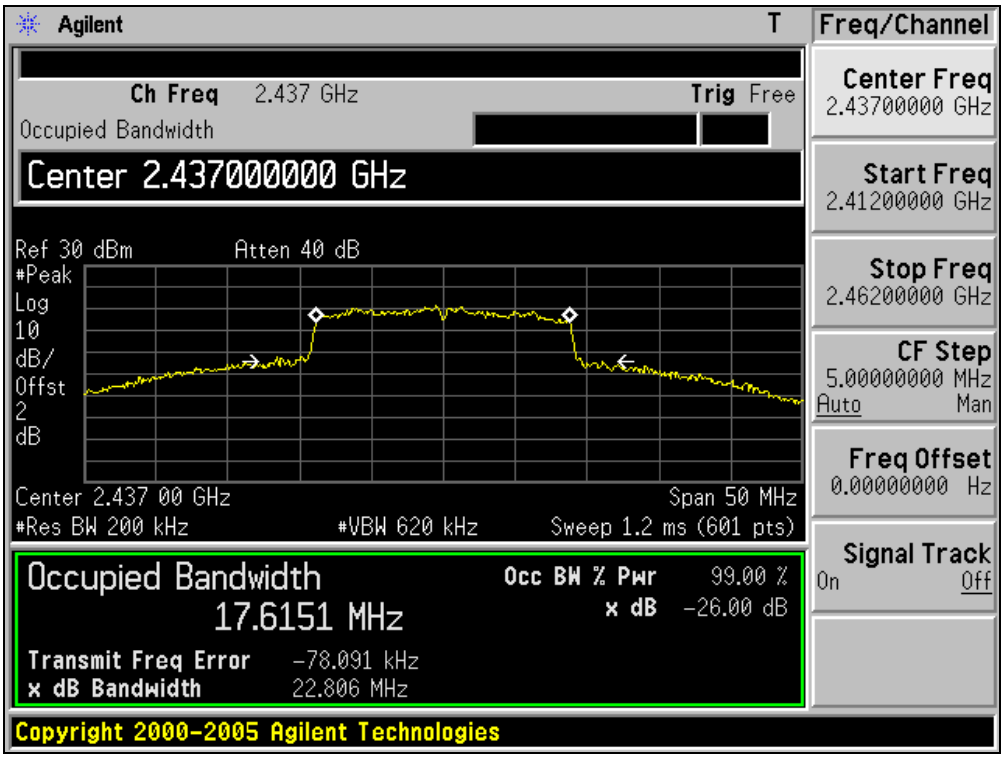
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 2)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
01	2412	17474.4
06	2437	17615.1
11	2462	17470.0
149	5745	17597.9
157	5785	17596.7
165	5825	17565.5

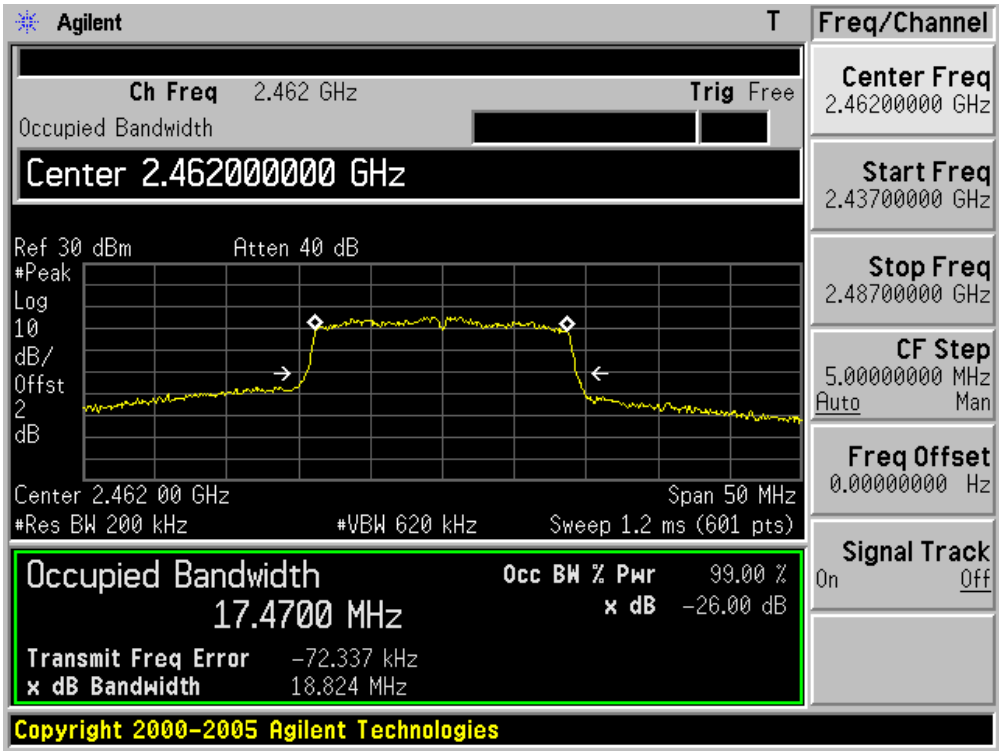
Channel 01 (2412MHz)



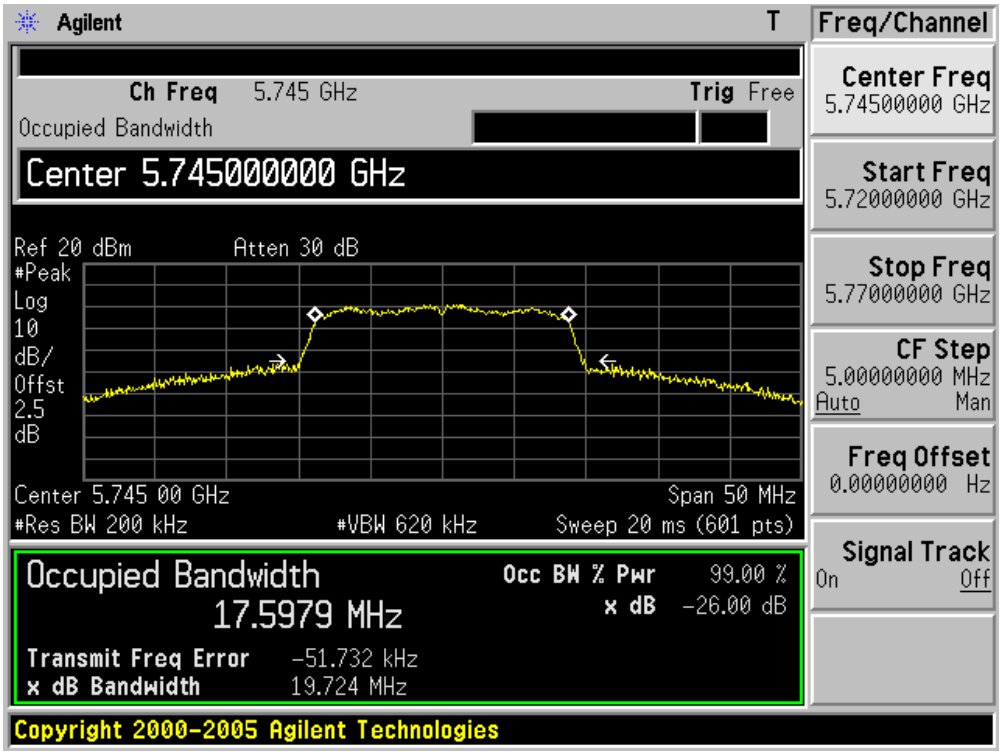
Channel 06 (2437MHz)



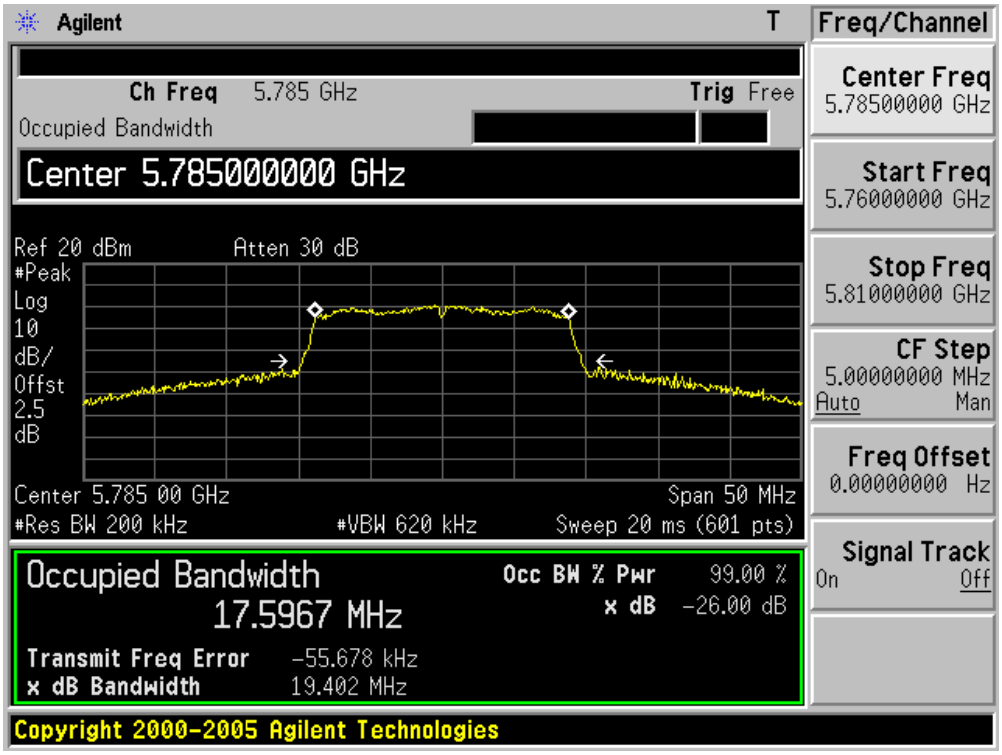
Channel 11 (2462MHz)



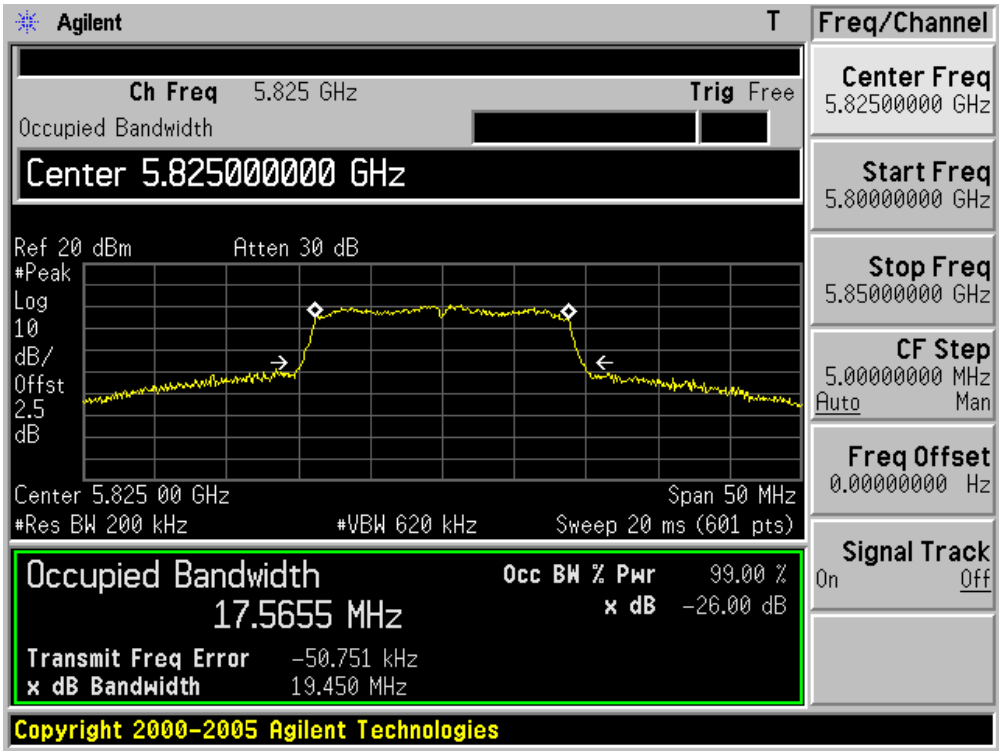
Channel 149 (5745MHz)



Channel 157 (5785MHz)



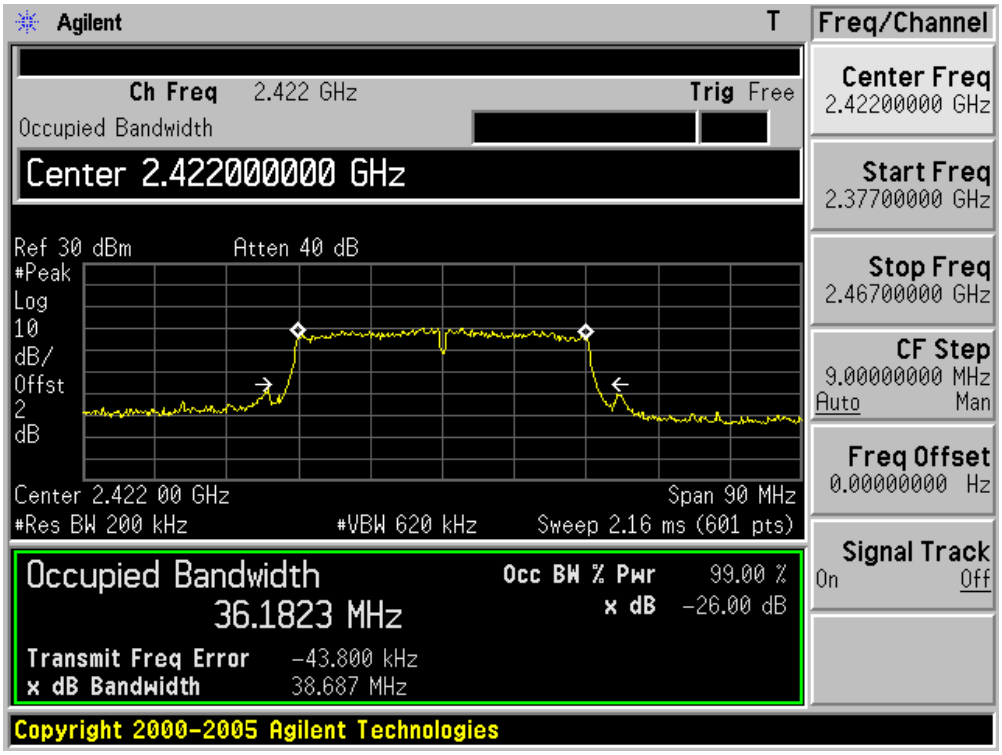
Channel 165 (5825MHz)



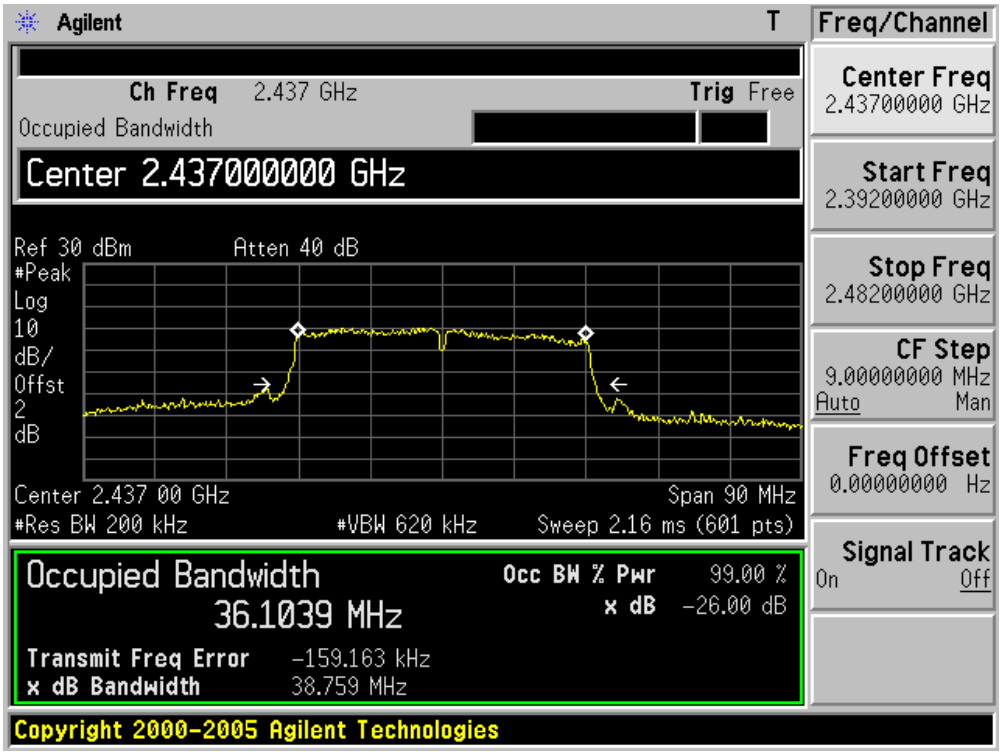
Product	:	IP-STB
Test Item	:	99% Occupied Bandwidth
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 2)

Channel No.	Frequency (MHz)	99% Bandwidth (kHz)
03	2422	36182.3
06	2437	36103.9
09	2452	36225.3
151	5755	36271.8
159	5795	36222.4

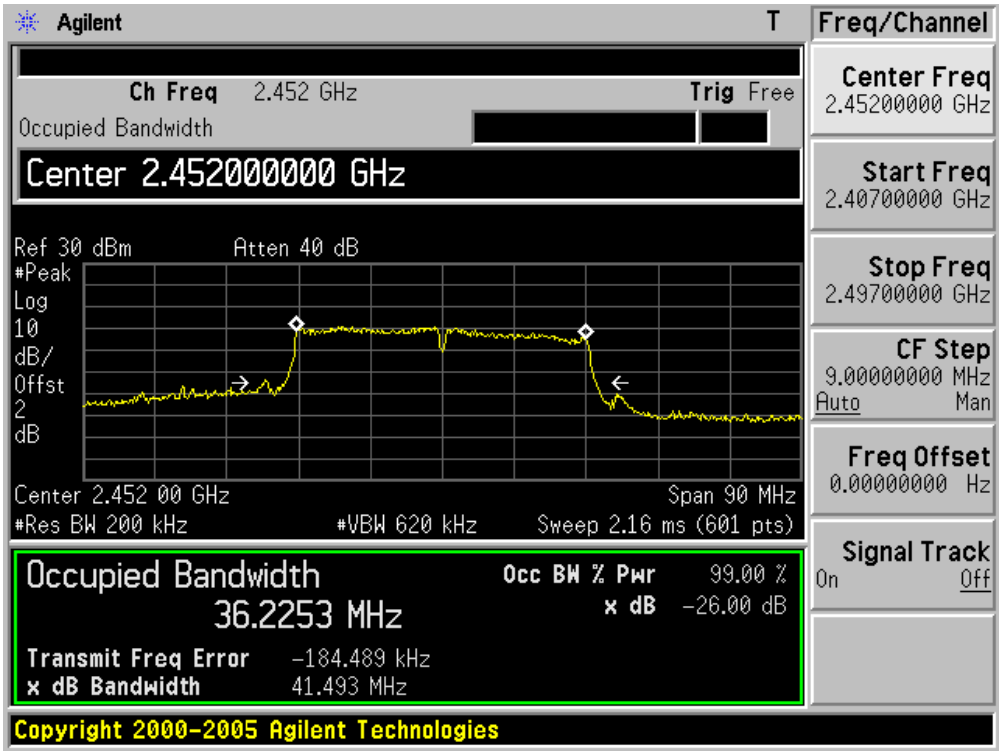
Channel 03 (2422MHz)



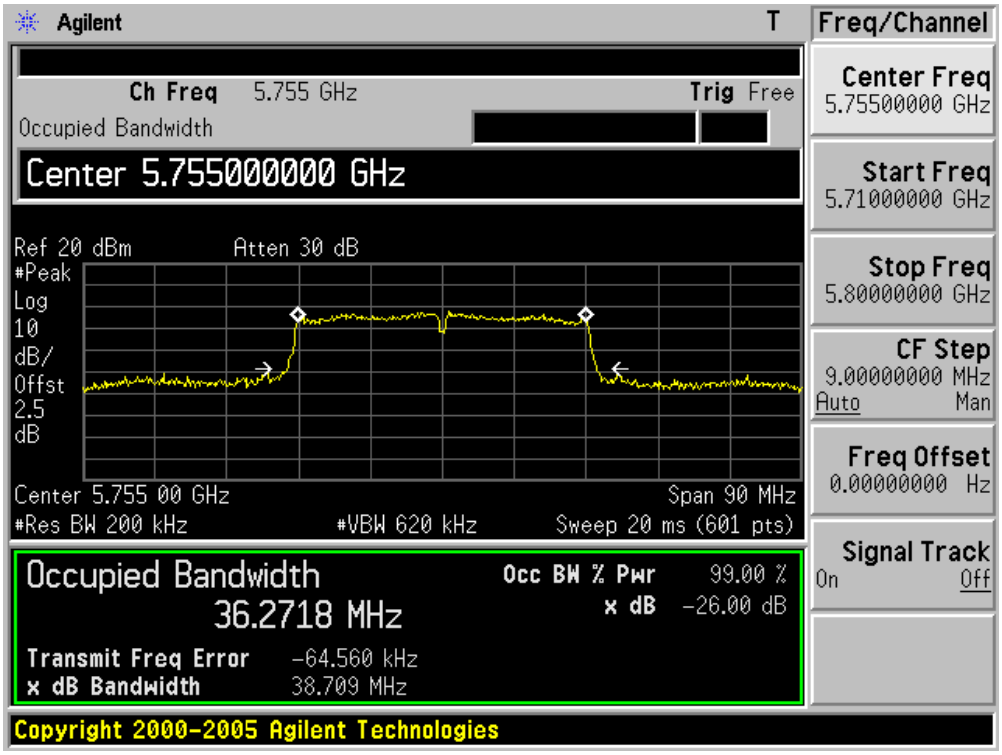
Channel 06 (2437MHz)



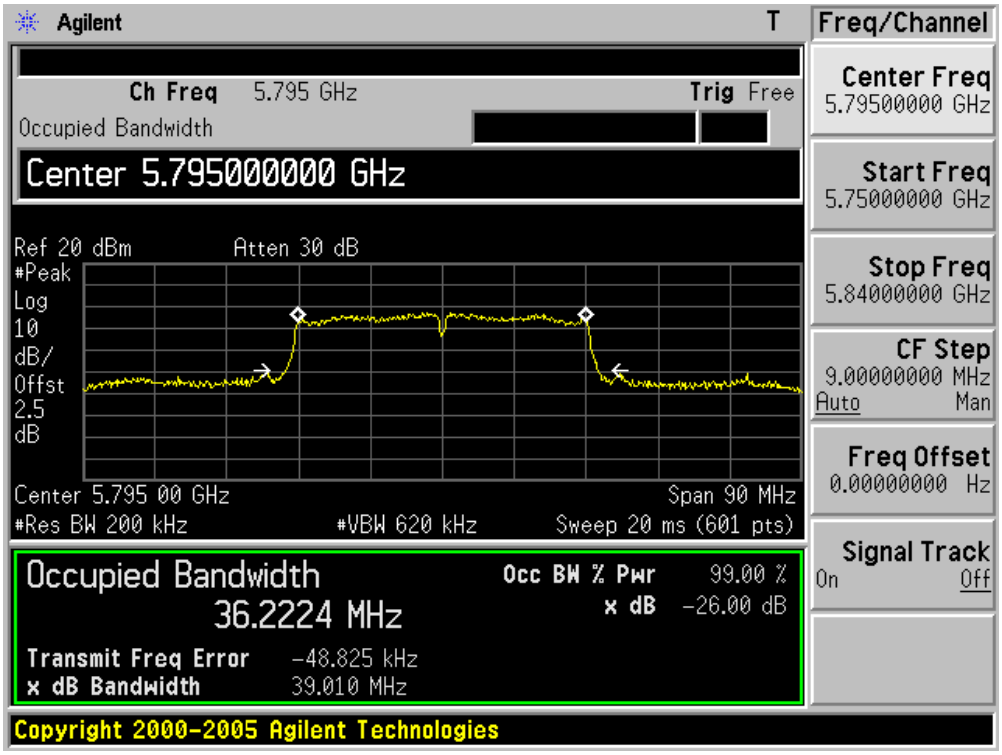
Channel 09 (2452MHz)



Channel 151 (5755MHz)



Channel 159 (5795MHz)



9. Power Output

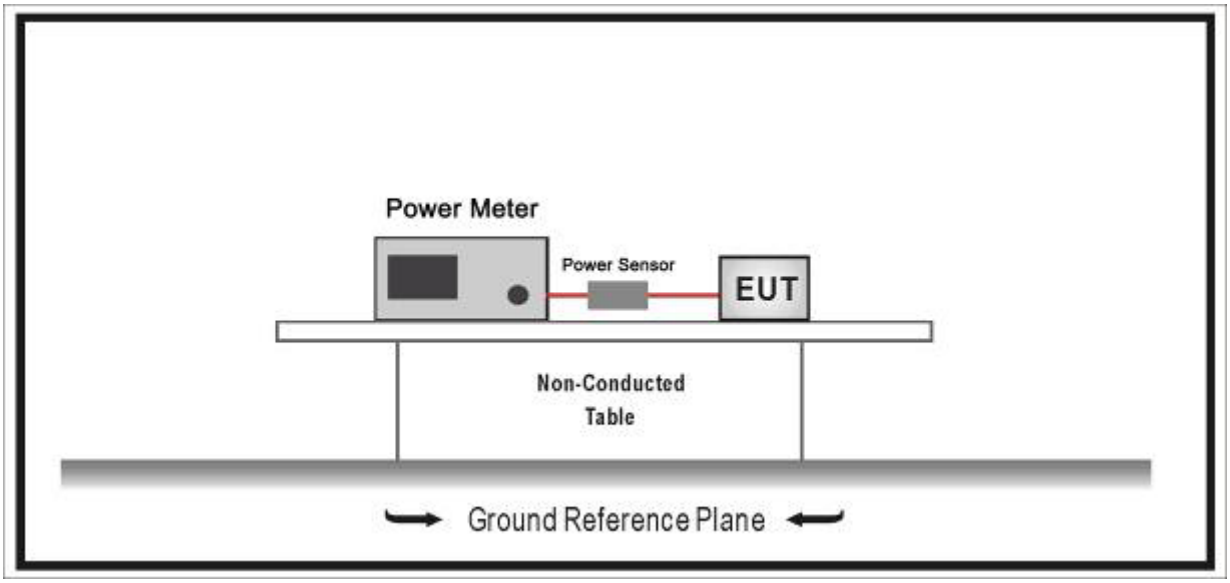
9.1. Test Equipment

Power Output / TR-8

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2013.01.12
Power Sensor	Anritsu	MA2411B	0846014	2013.01.12
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 maximum peak power shall be less 1 Watt (30dBm).

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

9.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

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

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

9.6. 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)						
		802.11b	802.11g	802.11a	20MHz Bandwidth		40MHz Bandwidth	
					800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	6	6.5	7.2	13.5	15.0
1	1	2	9	9	13.0	14.4	27.0	30.0
2	1	5.5	12	12	19.5	21.7	40.5	45.0
3	1	11	18	18	26.0	28.9	54.0	60.0
4	1	---	24	24	39.0	43.3	81.0	90.0
5	1	---	36	36	52.0	57.8	108.0	120.0
6	1	---	48	48	58.5	65.0	121.5	135.0
7	1	---	54	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)
802.11b(Chain 1)	20	2437	6	1	18.26
				5.5	18.06
				11	18.02
802.11g(Chain 1)	20	2437	6	6	23.65
				24	23.72
				54	24.90
802.11a(Chain 1)	20	5785	157	6	18.72
				24	18.52
				54	18.78
802.11n(Chain 1)	20	2437	6	MCS0	23.01
				MCS4	23.04
				MCS7	23.10
		5785	157	MCS0	17.90
				MCS4	17.86
				MCS7	17.93
802.11n(Chain 1)	40	2437	6	MCS0	22.17
				MCS4	22.15
				MCS7	22.54
		5755	151	MCS0	17.28
				MCS4	17.25
				MCS7	17.30

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
1	2412	17.53	N/A	17.53	30.00	Pass	19.53
6	2437	18.26	N/A	18.26	30.00	Pass	20.26
11	2462	17.79	N/A	17.79	30.00	Pass	19.79

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 2)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
1	2412	N/A	18.56	18.56	30.00	Pass	20.56
6	2437	N/A	18.60	18.60	30.00	Pass	20.60
11	2462	N/A	18.35	18.35	30.00	Pass	20.35

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
1	2412	23.46	N/A	23.46	30.00	Pass	25.46
6	2437	23.96	N/A	23.96	30.00	Pass	25.96
11	2462	24.66	N/A	24.66	30.00	Pass	26.66

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 2)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
1	2412	N/A	24.93	24.93	30.00	Pass	26.93
6	2437	N/A	25.23	25.23	30.00	Pass	27.23
11	2462	N/A	25.51	25.51	30.00	Pass	27.51

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
149	5745	18.23	N/A	18.23	30.00	Pass	19.23
157	5785	18.78	N/A	18.78	30.00	Pass	19.78
165	5825	18.41	N/A	18.41	30.00	Pass	19.41

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 2)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
149	5745	N/A	19.12	19.12	30.00	Pass	20.12
157	5785	N/A	18.98	18.98	30.00	Pass	19.98
165	5825	N/A	19.18	19.18	30.00	Pass	20.18

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 4: 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 1	Chain 2				
1	2412	22.77	N/A	22.77	30.00	Pass	24.77
6	2437	23.10	N/A	23.10	30.00	Pass	25.10
11	2462	22.71	N/A	22.71	30.00	Pass	24.71
149	5745	17.80	N/A	17.80	30.00	Pass	19.80
157	5785	17.93	N/A	17.93	30.00	Pass	18.93
165	5825	18.20	N/A	18.20	30.00	Pass	19.20

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 2)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
1	2412	N/A	24.81	24.81	30.00	Pass	26.81
6	2437	N/A	25.92	25.92	30.00	Pass	27.92
11	2462	N/A	24.67	24.67	30.00	Pass	26.67
149	5745	N/A	19.11	19.11	30.00	Pass	21.11
157	5785	N/A	19.25	19.25	30.00	Pass	20.25
165	5825	N/A	20.07	20.07	30.00	Pass	21.07

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 4: Transmit by 802.11n(20MHz) (Chain 1+2)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)			Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2	Chain 2				
1	2412	20.91	23.68	N/A	25.52	30.00	Pass	27.52
6	2437	23.02	24.66	N/A	26.93	30.00	Pass	28.93
11	2462	21.74	23.06	N/A	25.46	30.00	Pass	27.46
149	5745	16.21	18.93	N/A	20.79	30.00	Pass	22.79
157	5785	17.63	18.45	N/A	21.07	30.00	Pass	22.07
165	5825	16.46	19.72	N/A	21.40	30.00	Pass	22.40

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 5: 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 1	Chain 2				
3	2422	22.85	N/A	22.85	30.00	Pass	24.85
6	2437	22.54	N/A	22.54	30.00	Pass	24.54
9	2452	22.84	N/A	22.84	30.00	Pass	24.84
151	5755	17.30	N/A	17.30	30.00	Pass	18.30
159	5795	16.32	N/A	16.32	30.00	Pass	17.32

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 2)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
3	2422	N/A	23.27	23.27	30.00	Pass	25.27
6	2437	N/A	22.21	22.21	30.00	Pass	24.21
9	2452	N/A	23.14	23.14	30.00	Pass	25.14
151	5755	N/A	19.37	19.37	30.00	Pass	20.37
159	5795	N/A	19.23	19.23	30.00	Pass	20.23

Max.EIRP=Total Power + Antenna Gain

Product	:	IP-STB
Test Item	:	Power Output
Test Site	:	TR8
Test Mode	:	Mode 5: Transmit by 802.11n(40MHz) (Chain 1+2)

Channel No.	Frequency (MHz)	Measurement Power Output (dBm)		Total Power (dBm)	Limit (dBm)	Result	Max.EIRP (dBm)
		Chain 1	Chain 2				
3	2422	20.34	21.17	23.79	30.00	Pass	25.79
6	2437	20.26	20.52	23.40	30.00	Pass	25.40
9	2452	20.40	21.39	23.93	30.00	Pass	25.93
151	5755	16.81	19.30	21.24	30.00	Pass	22.24
159	5795	18.25	18.97	21.64	30.00	Pass	22.64

Max.EIRP=Total Power + Antenna Gain

10. Power Spectral Density

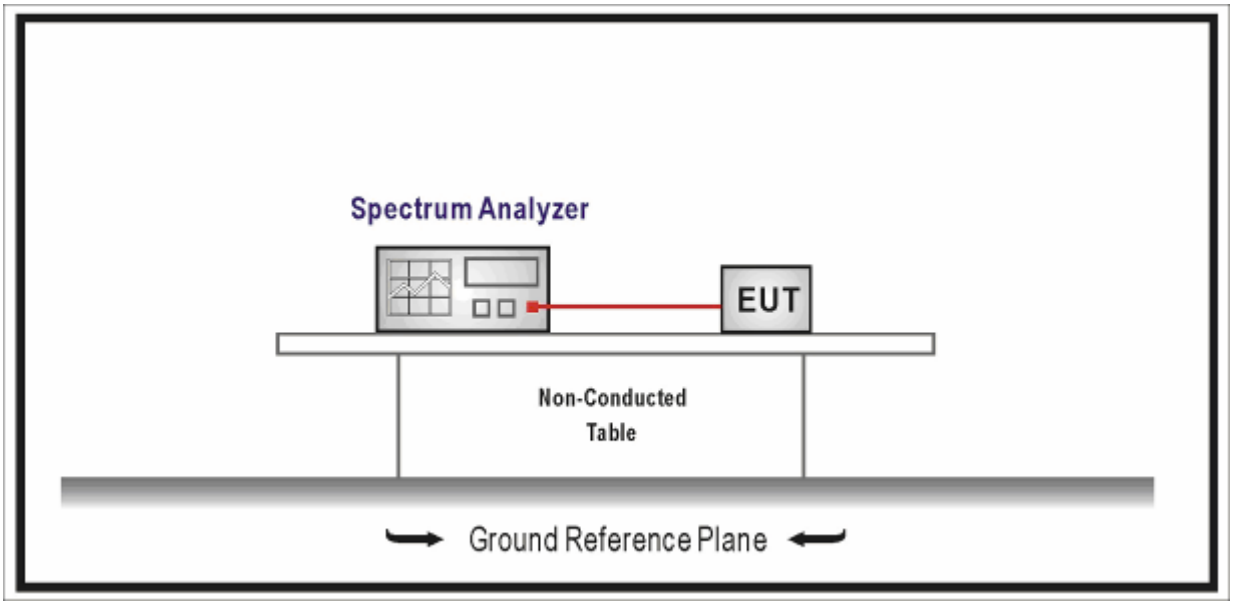
10.1. Test Equipment

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.

10.2. Test Setup



10.3. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiated to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

10.4. Test Procedure

The EUT was tested according to ANSI C63.10: 2009 and KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
Set RBW= 100 kHz, VBW≥300KHz, SPAN to 5-30 % greater than the EBW, Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100kHz = -15.2 dB).

10.5. Uncertainty

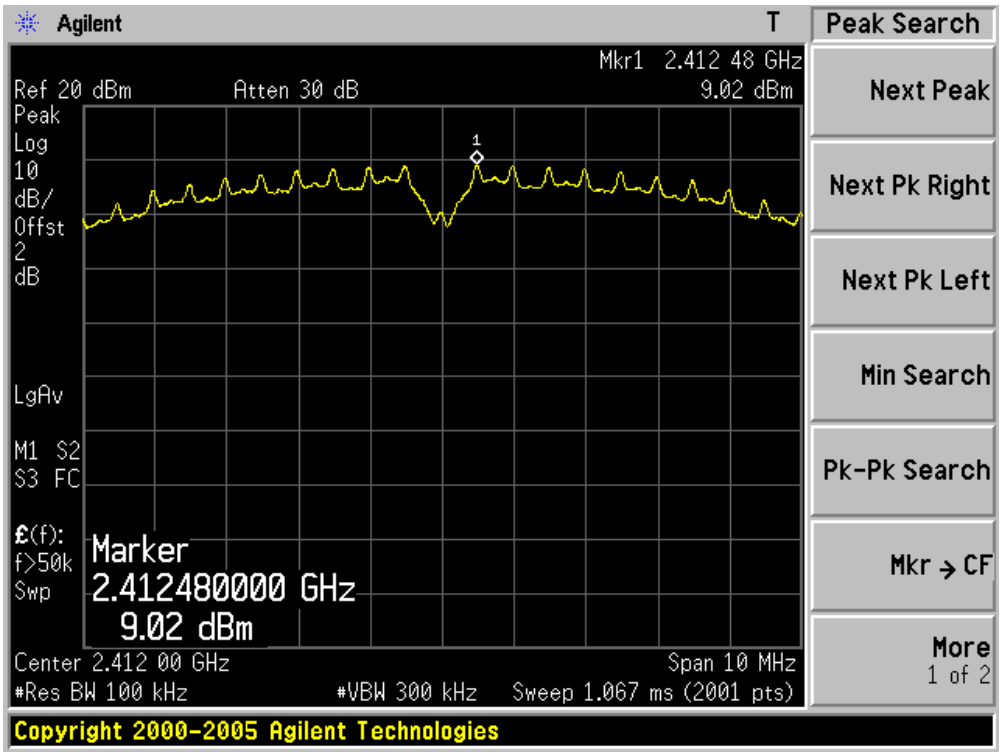
The measurement uncertainty is defined as ± 1.27 dB

10.6. Test Result

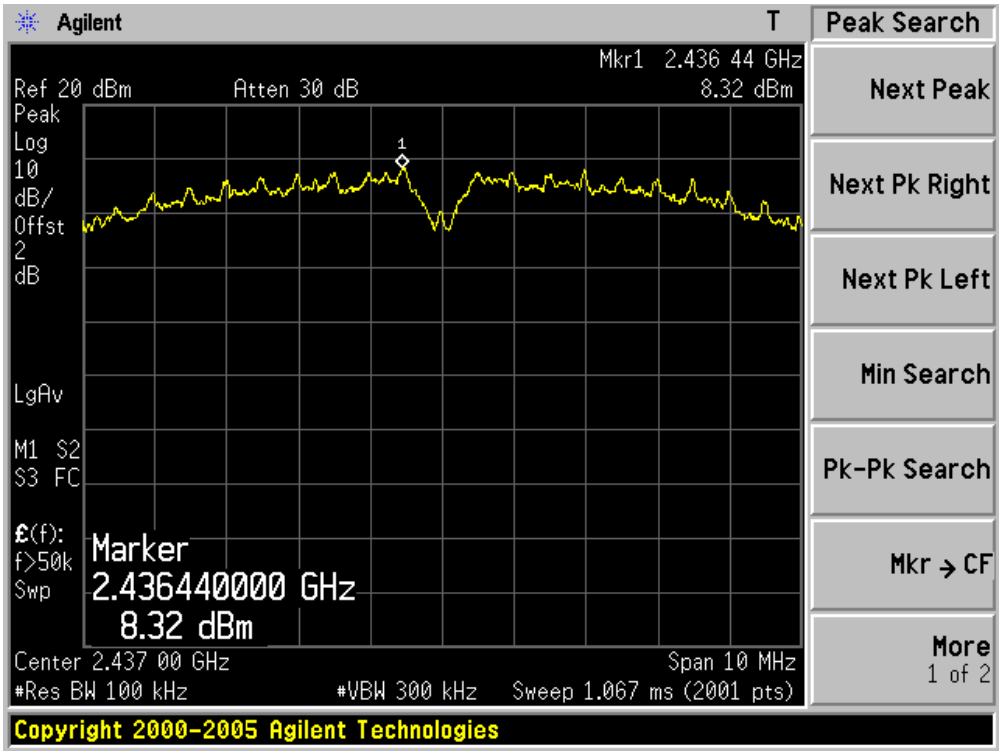
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
01	2412	9.02	N/A	-15.2	-6.18	8	Pass
06	2437	8.32	N/A	-15.2	-6.88	8	Pass
11	2462	6.43	N/A	-15.2	-8.77	8	Pass

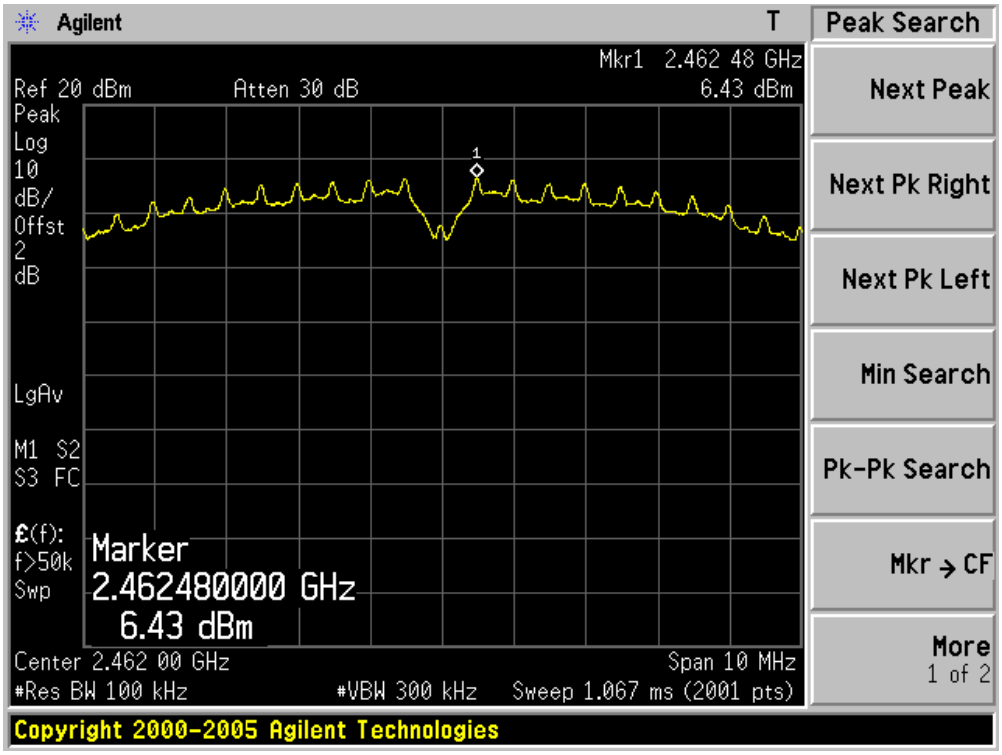
Channel 01 (2412MHz)



Channel 06 (2437MHz)



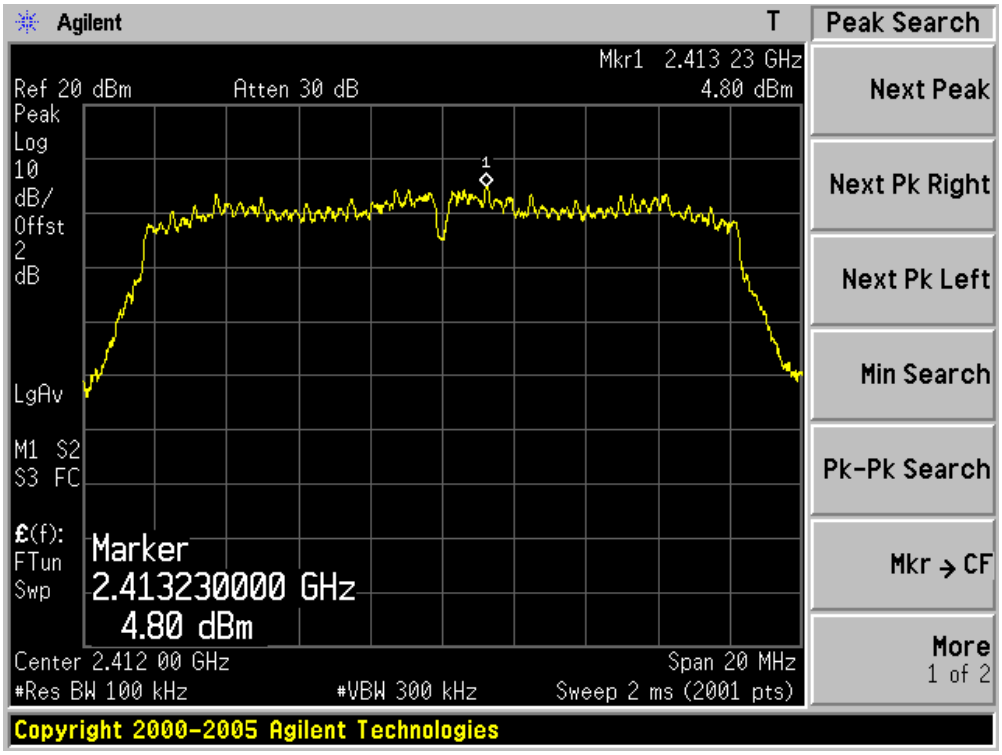
Channel 11 (2462MHz)



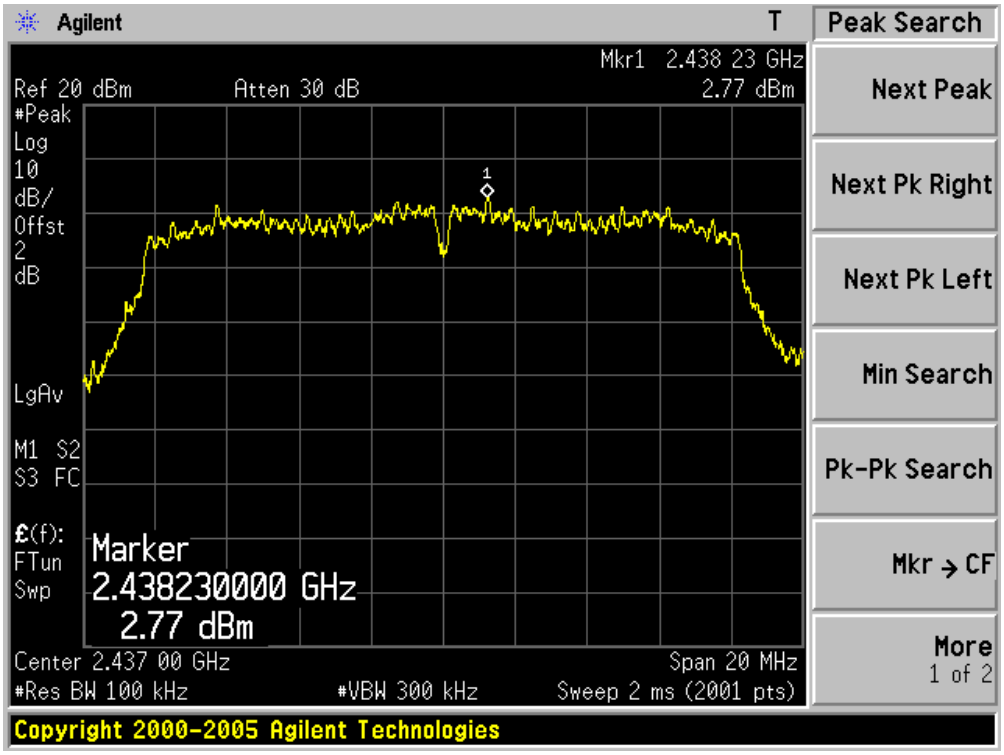
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
01	2412	4.80	N/A	-15.2	-10.40	8	Pass
06	2437	2.77	N/A	-15.2	-12.43	8	Pass
11	2462	5.57	N/A	-15.2	-9.63	8	Pass

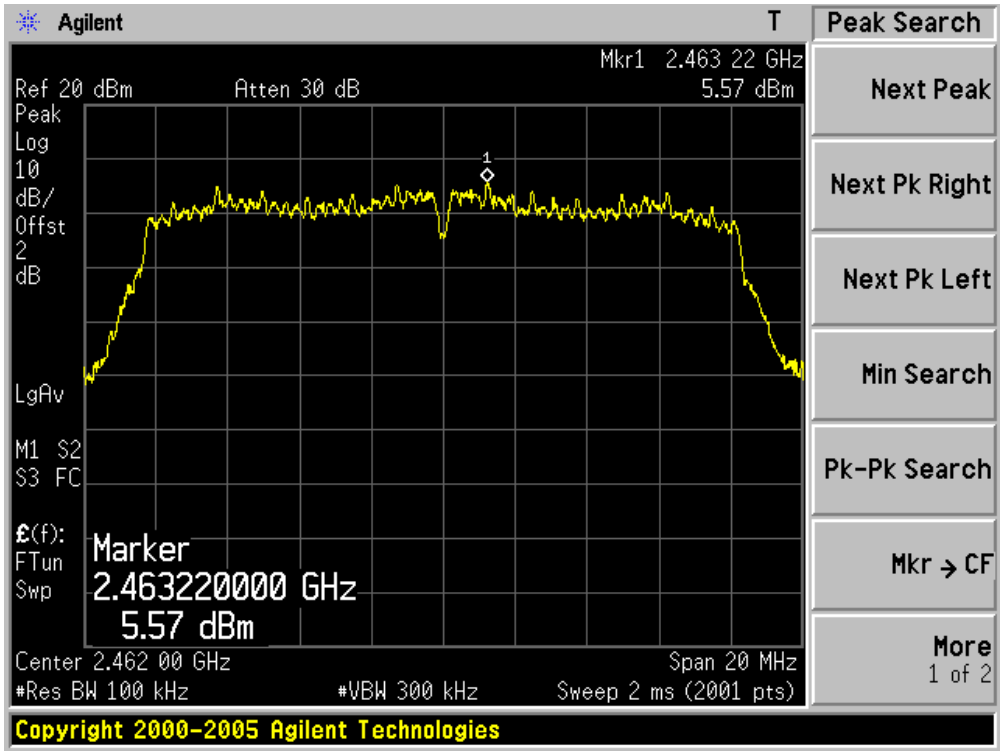
Channel 01 (2412MHz)



Channel 06 (2437MHz)



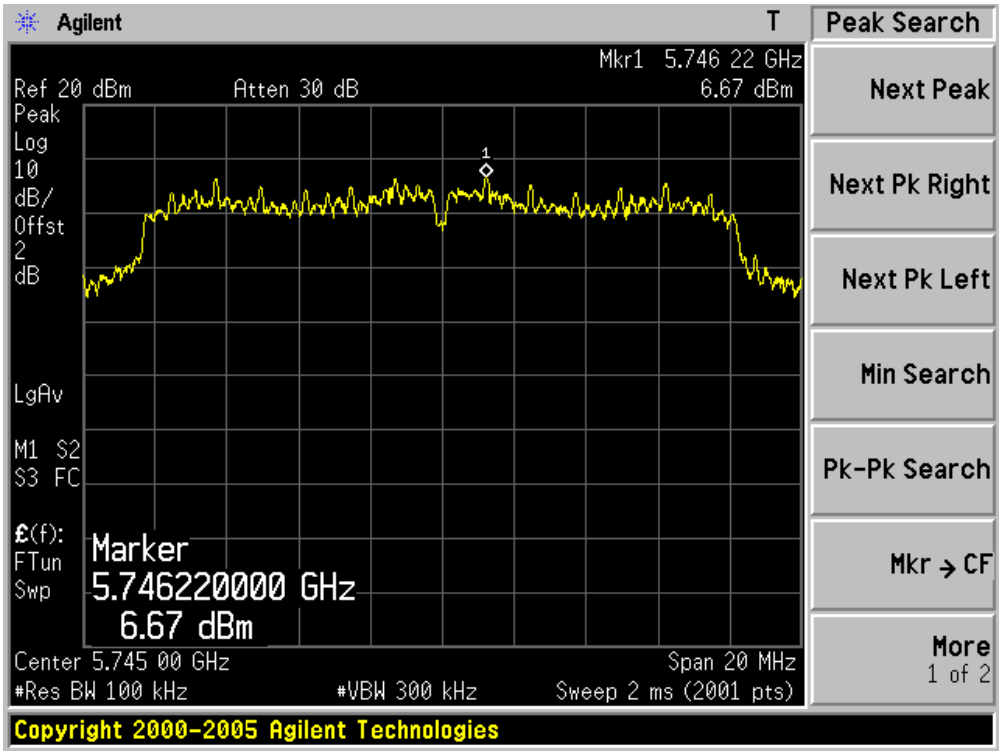
Channel 11 (2462MHz)



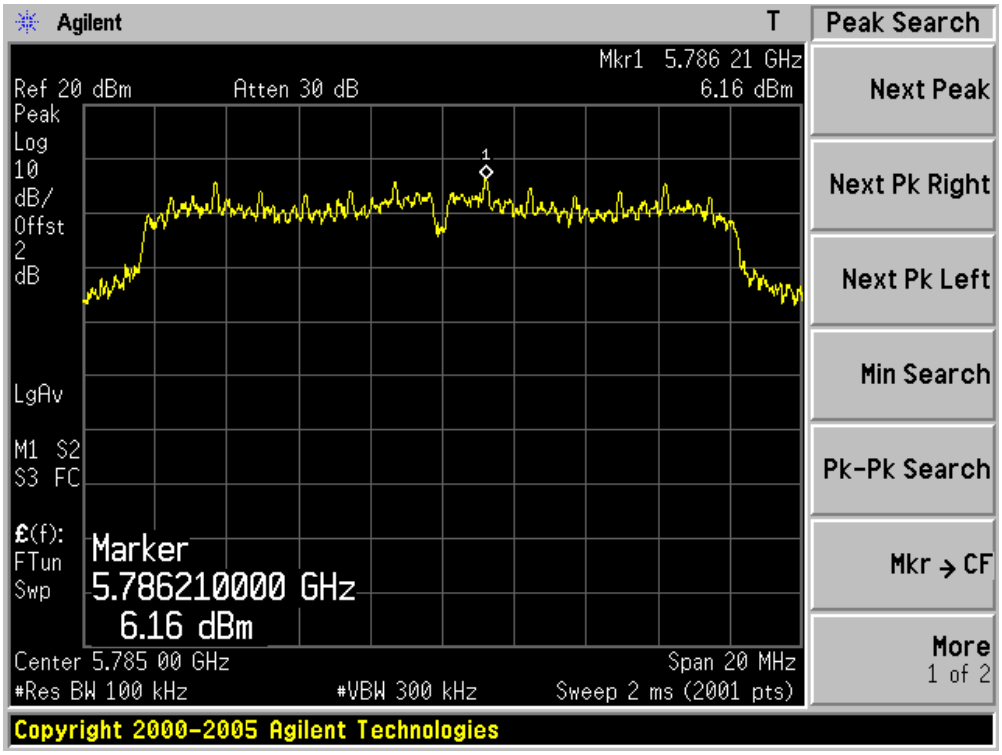
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
149	5745	6.67	N/A	-15.2	-8.53	8	Pass
157	5785	6.16	N/A	-15.2	-9.04	8	Pass
165	5825	6.32	N/A	-15.2	-8.88	8	Pass

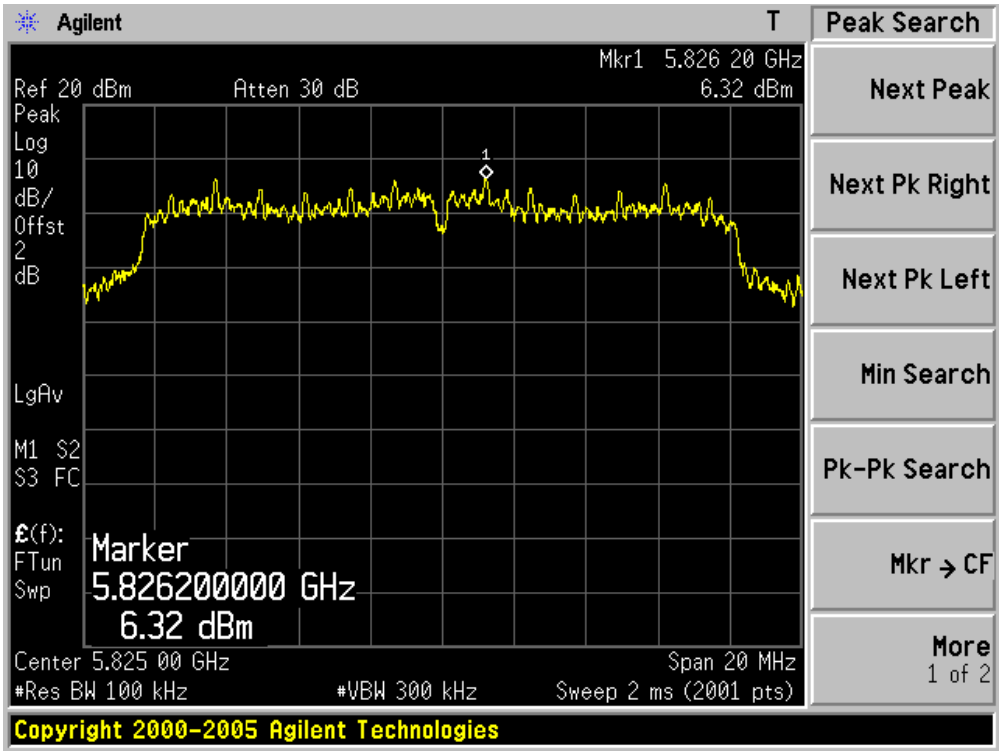
Channel 149 (5745MHz)



Channel 157 (5785MHz)



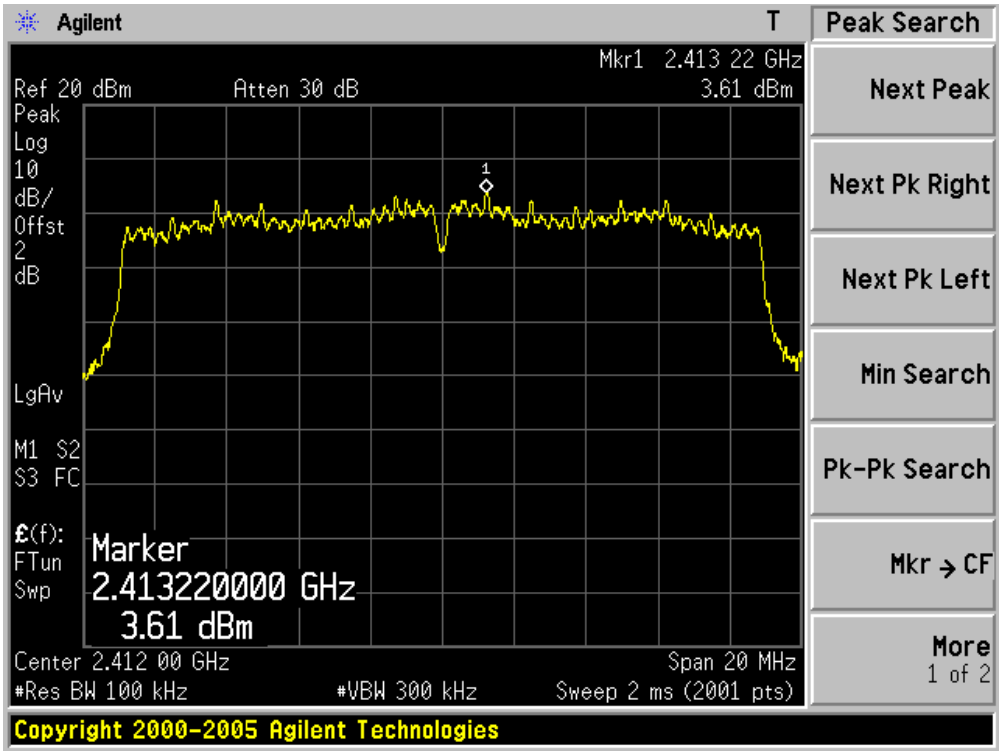
Channel 165 (5825MHz)



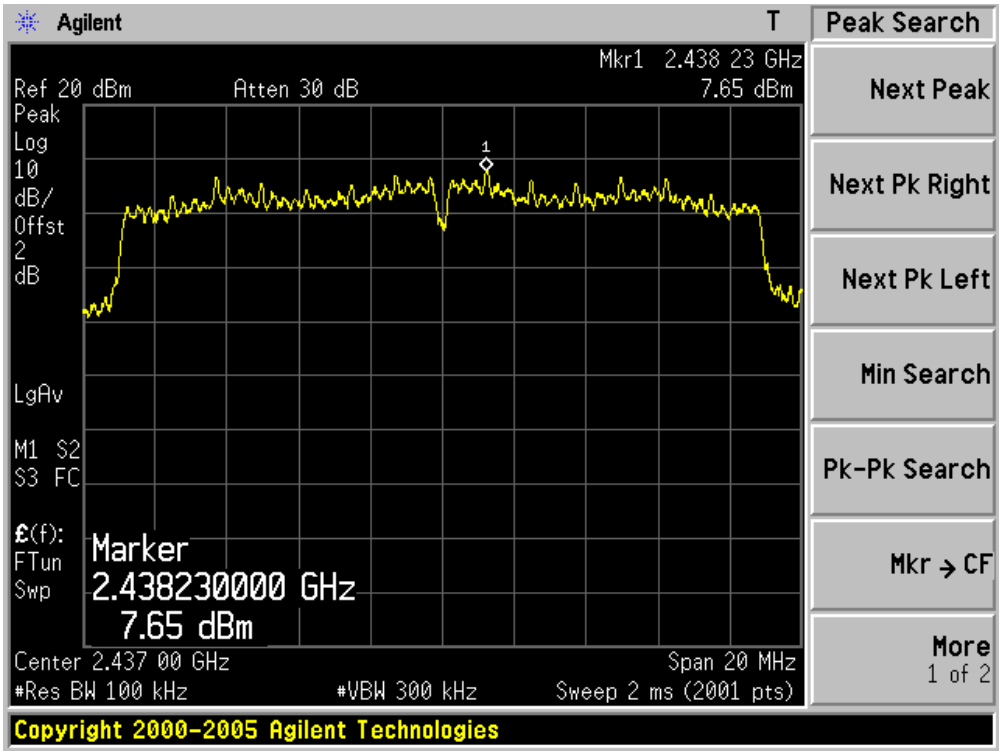
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
01	2412	3.61	N/A	-15.2	-11.59	8	Pass
06	2437	7.65	N/A	-15.2	-7.55	8	Pass
11	2462	4.12	N/A	-15.2	-11.08	8	Pass
149	5745	1.63	N/A	-15.2	-13.57	8	Pass
157	5785	2.29	N/A	-15.2	-12.91	8	Pass
165	5825	1.88	N/A	-15.2	-13.32	8	Pass

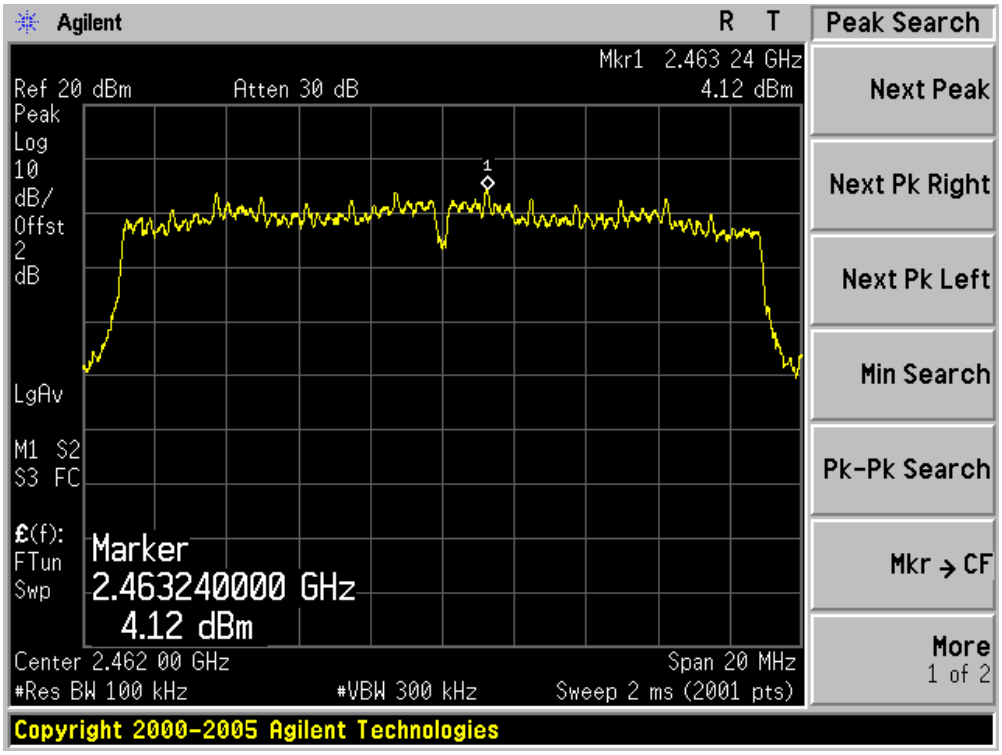
Channel 01 (2412MHz)



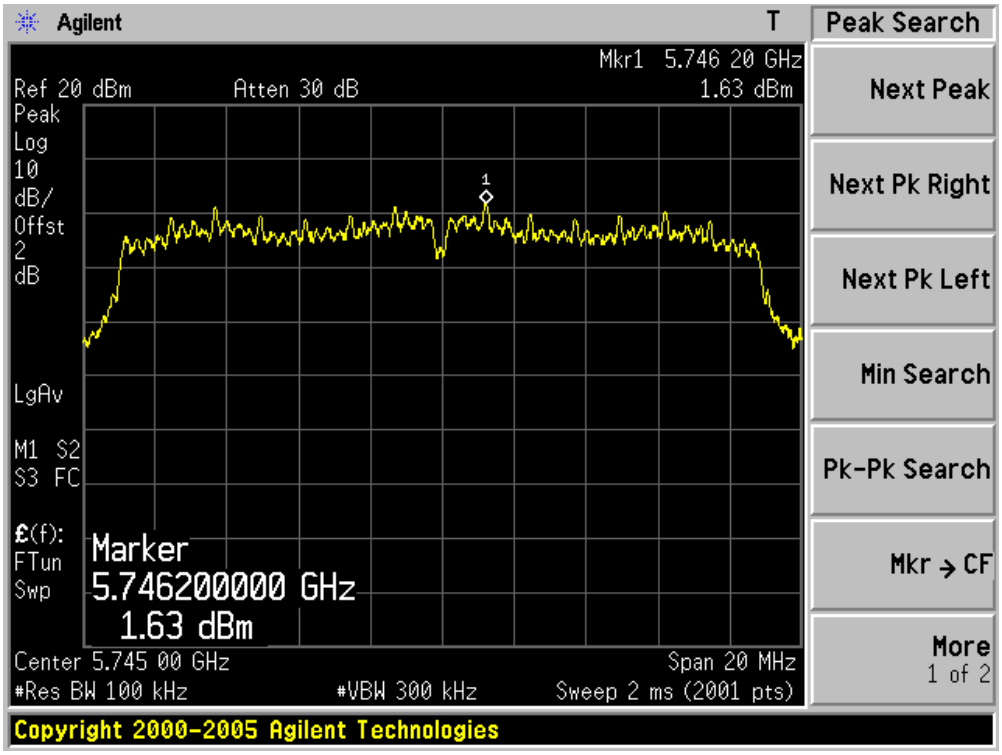
Channel 06 (2437MHz)



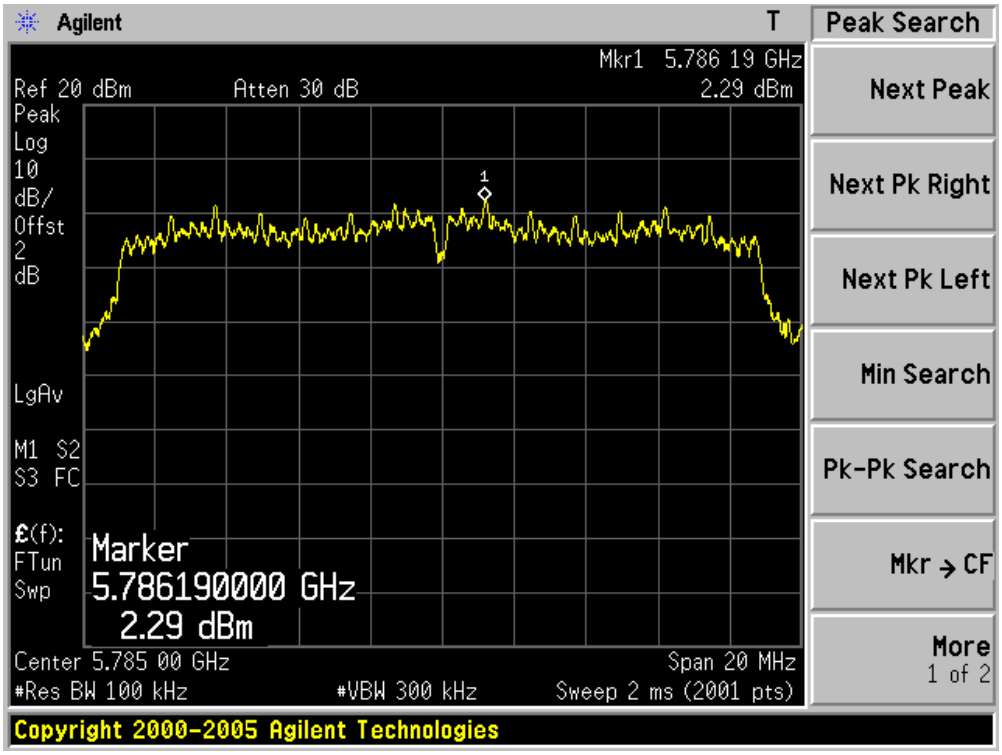
Channel 11 (2462MHz)



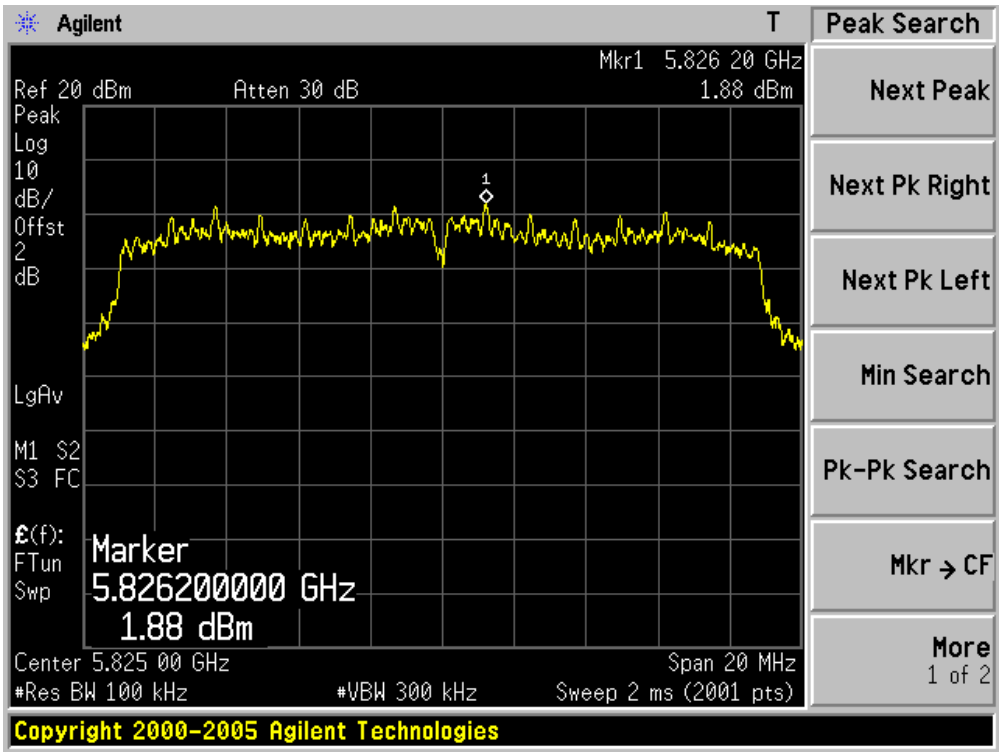
Channel 149 (5745MHz)



Channel 157 (5785MHz)



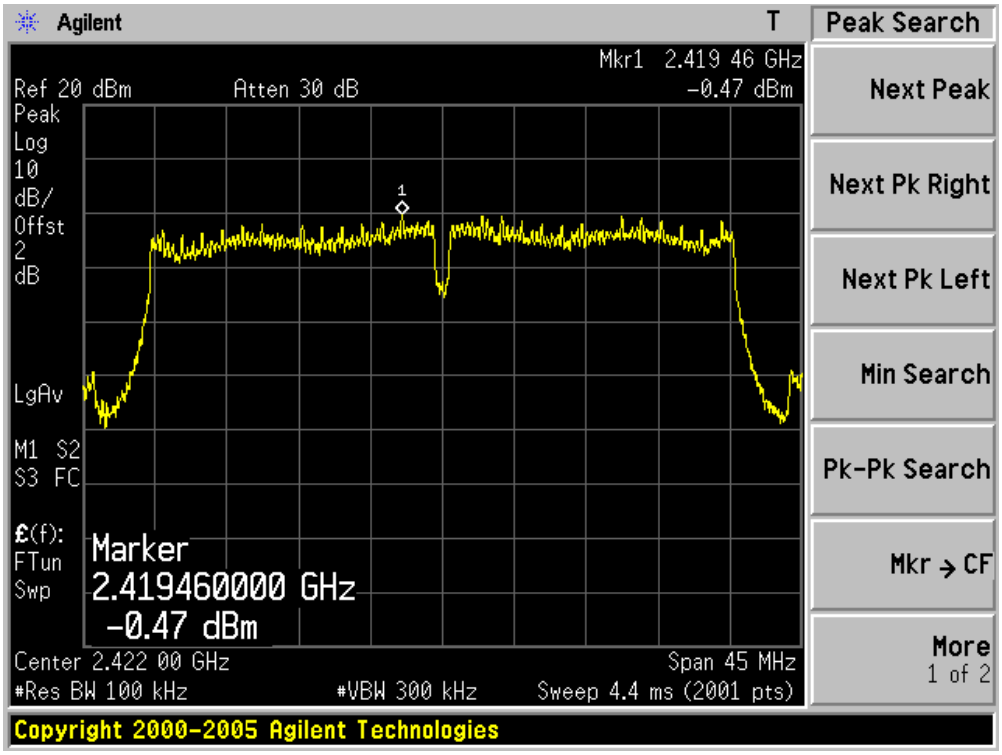
Channel 165 (5825MHz)



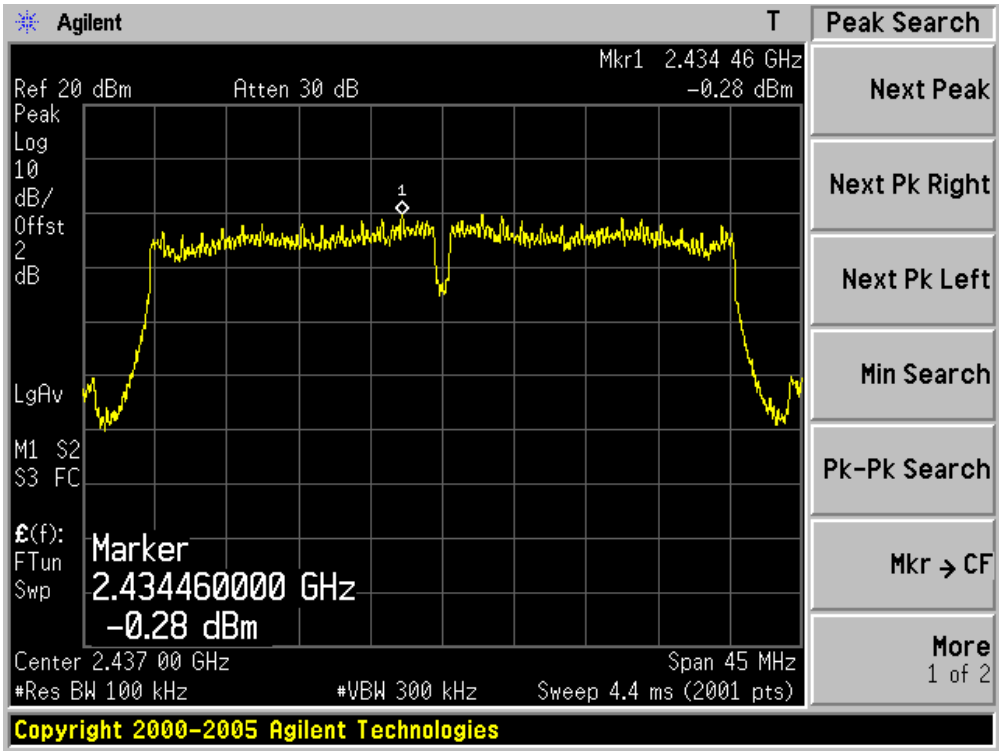
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 1)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
03	2422	-0.47	N/A	-15.2	-15.67	8	Pass
06	2437	-0.28	N/A	-15.2	-15.48	8	Pass
09	2452	0.05	N/A	-15.2	-15.15	8	Pass
151	5745	-1.39	N/A	-15.2	-16.59	8	Pass
159	5785	-1.32	N/A	-15.2	-16.52	8	Pass

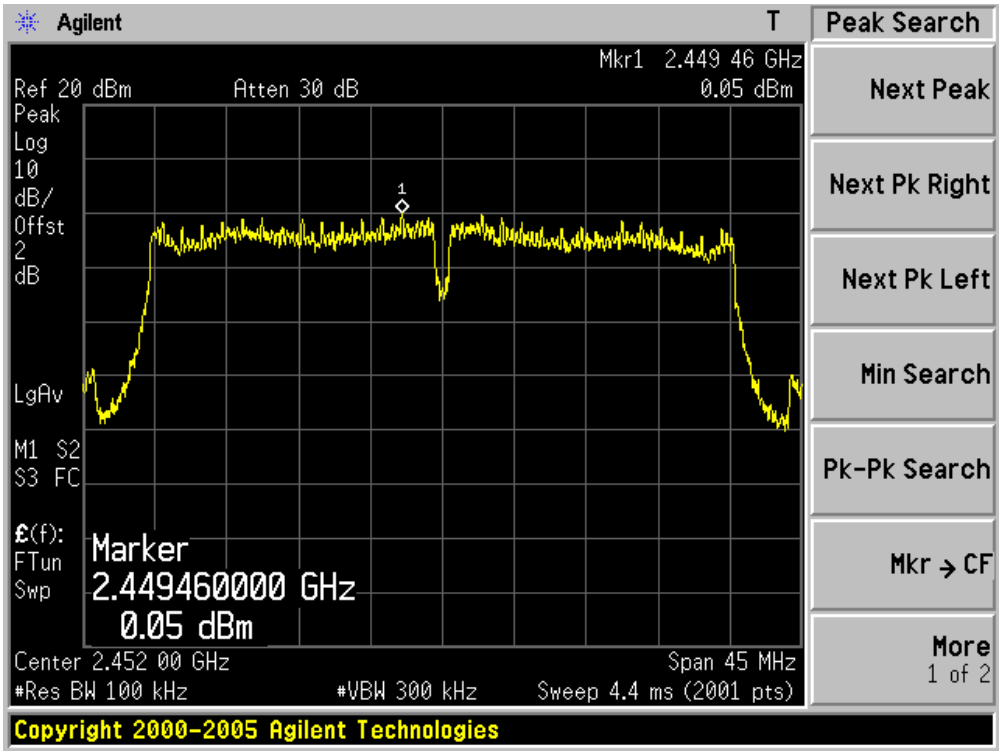
Channel 03 (2422MHz)



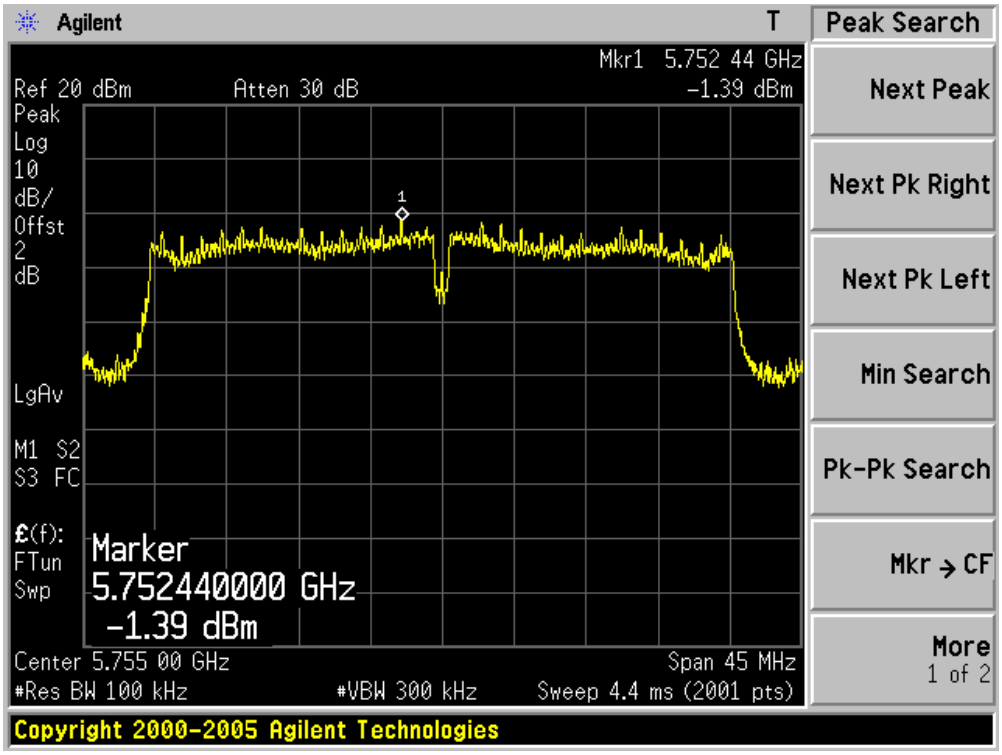
Channel 06 (2437MHz)



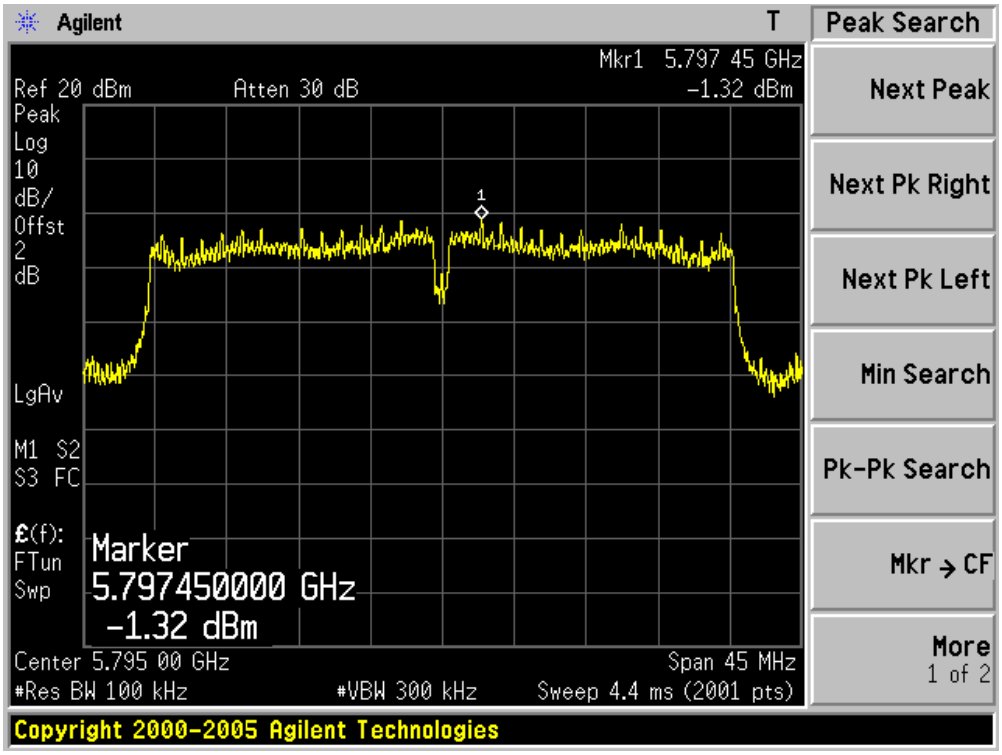
Channel 09 (2452MHz)



Channel 151 (5755MHz)



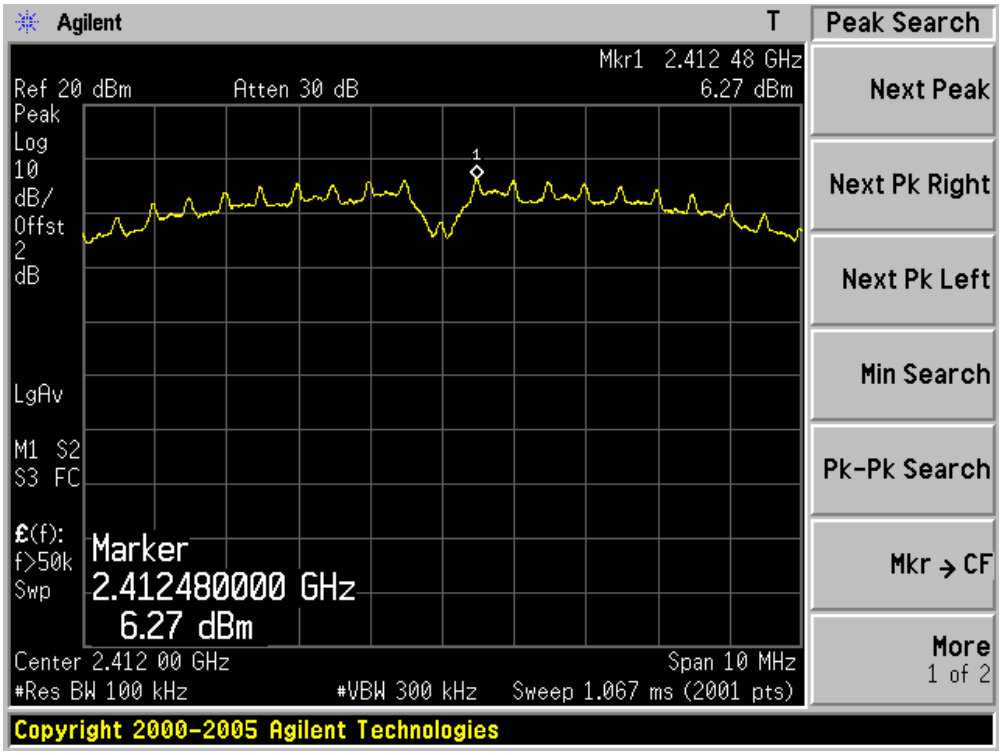
Channel 159 (5795MHz)



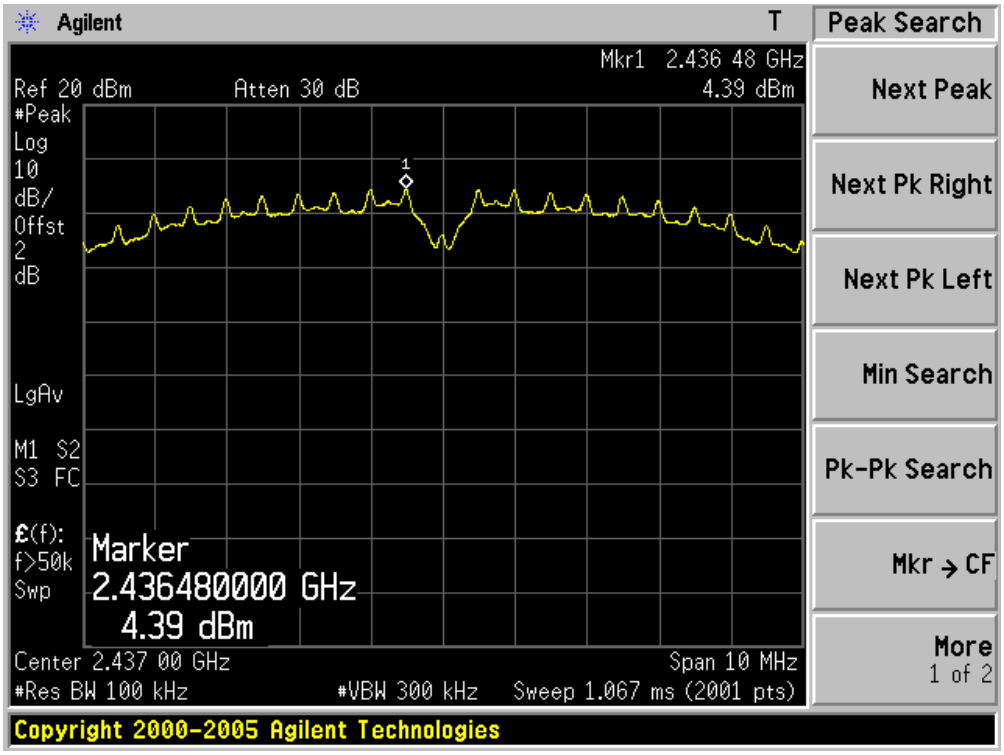
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 1: Transmit by 802.11b (Chain 2)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
01	2412	N/A	6.27	-15.2	-8.93	8	Pass
06	2437	N/A	4.39	-15.2	-10.81	8	Pass
11	2462	N/A	3.78	-15.2	-11.42	8	Pass

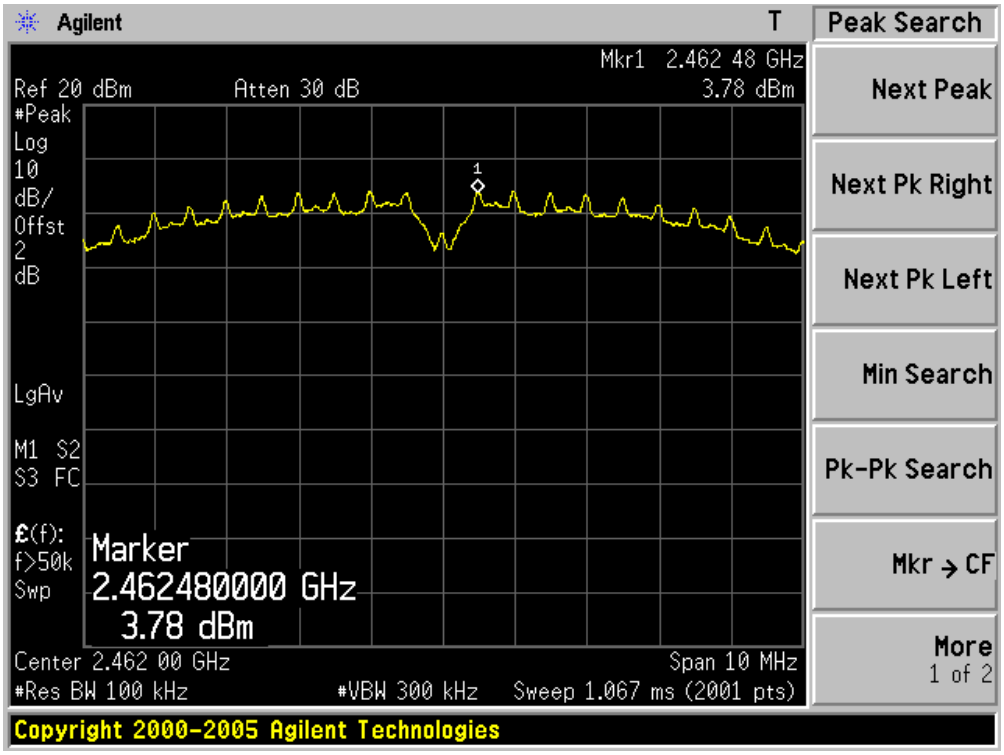
Channel 01 (2412MHz)



Channel 06 (2437MHz)



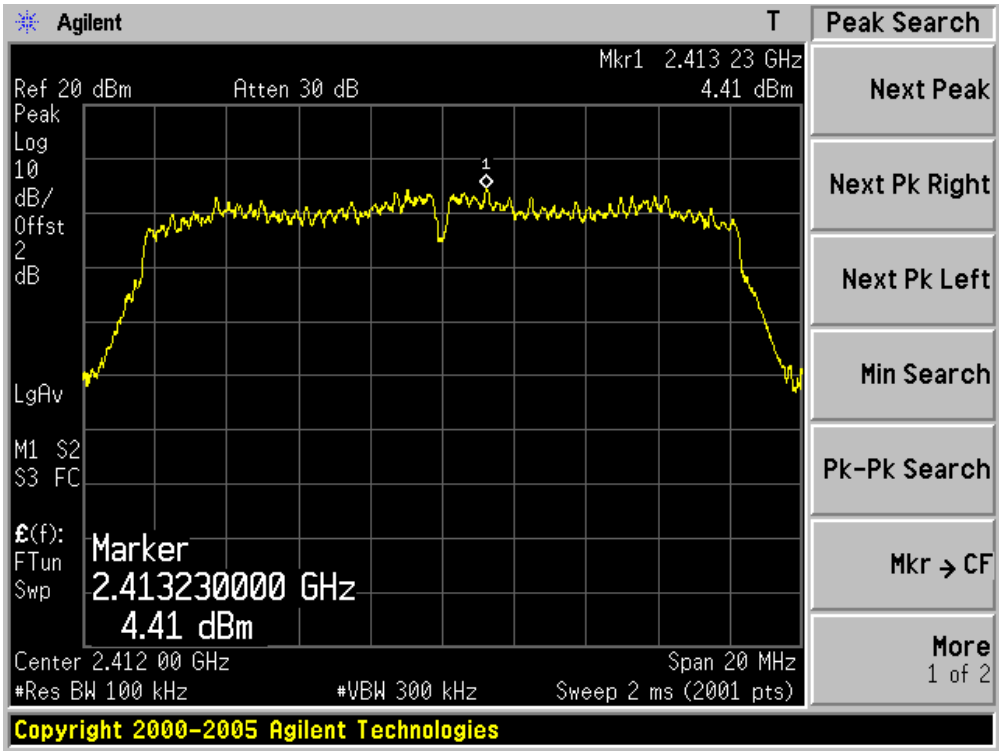
Channel 11 (2462MHz)



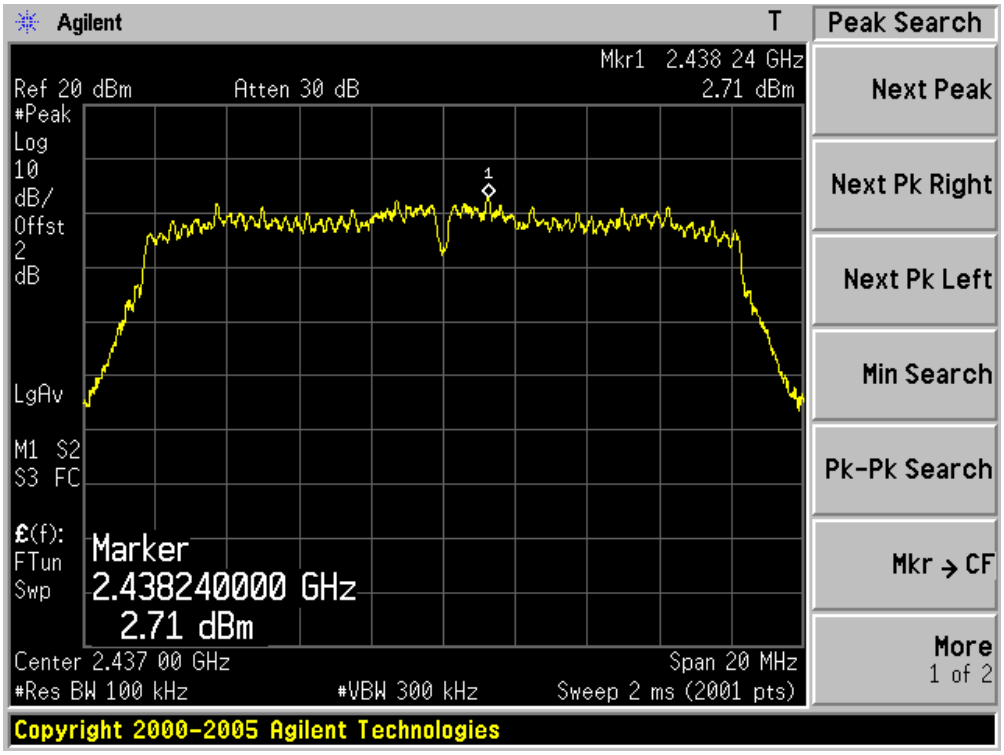
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 2: Transmit by 802.11g (Chain 2)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
01	2412	N/A	4.41	-15.2	-10.79	8	Pass
06	2437	N/A	2.71	-15.2	-12.49	8	Pass
11	2462	N/A	5.36	-15.2	-9.84	8	Pass

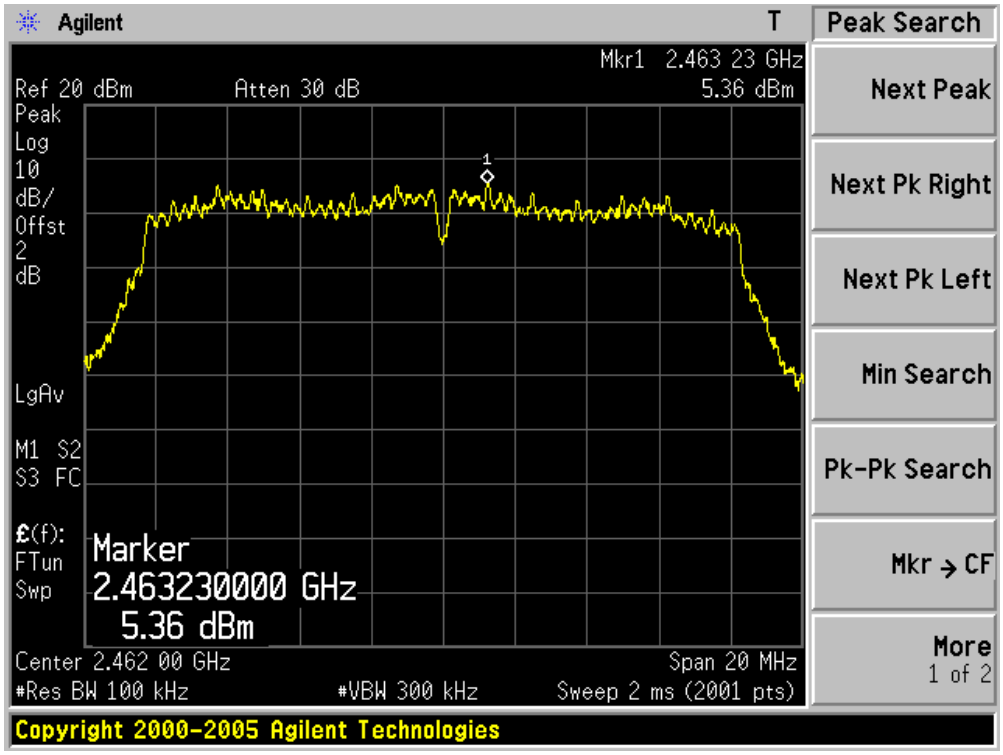
Channel 01 (2412MHz)



Channel 06 (2437MHz)



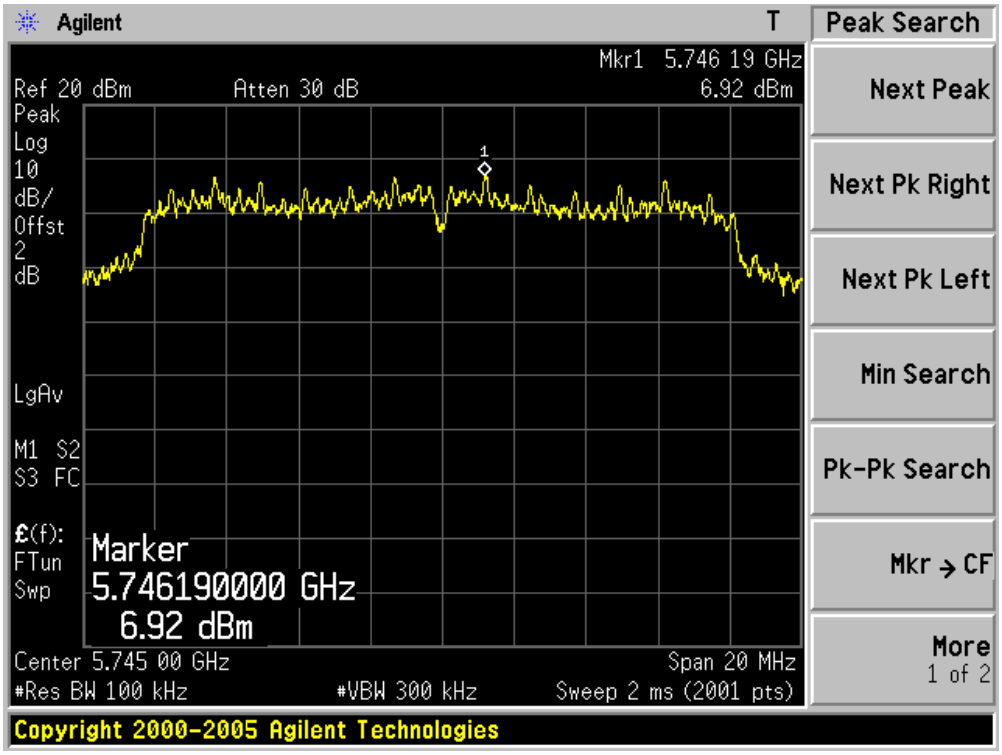
Channel 11 (2462MHz)



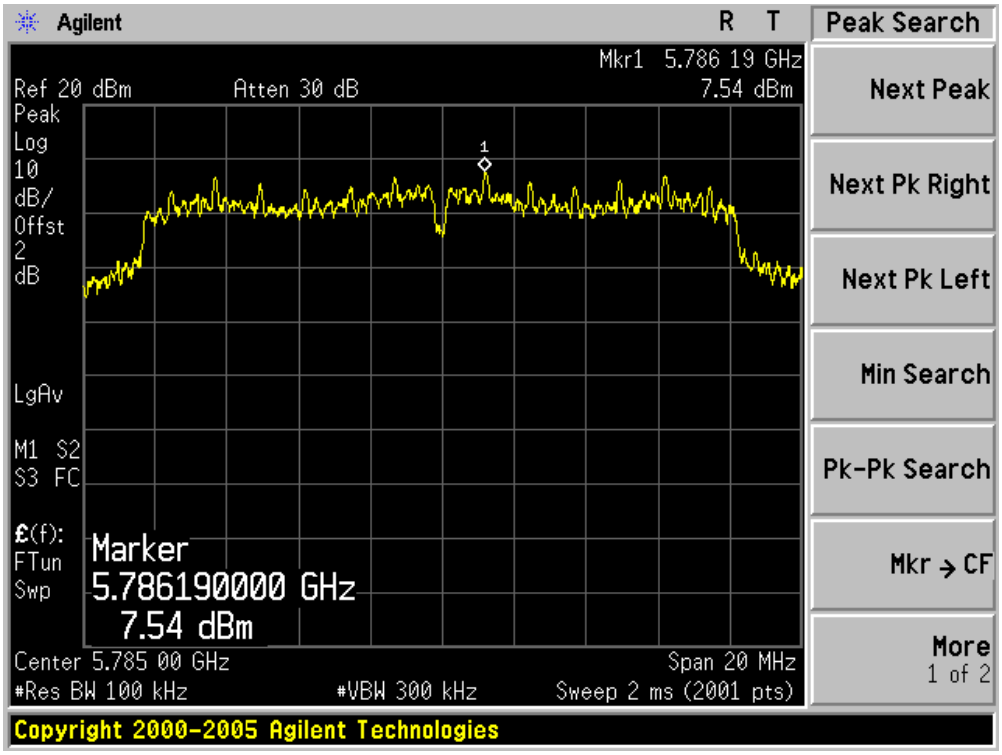
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 3: Transmit by 802.11a (Chain 2)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
149	5745	N/A	6.92	-15.2	-8.28	8	Pass
157	5785	N/A	7.54	-15.2	-7.66	8	Pass
165	5825	N/A	9.06	-15.2	-6.14	8	Pass

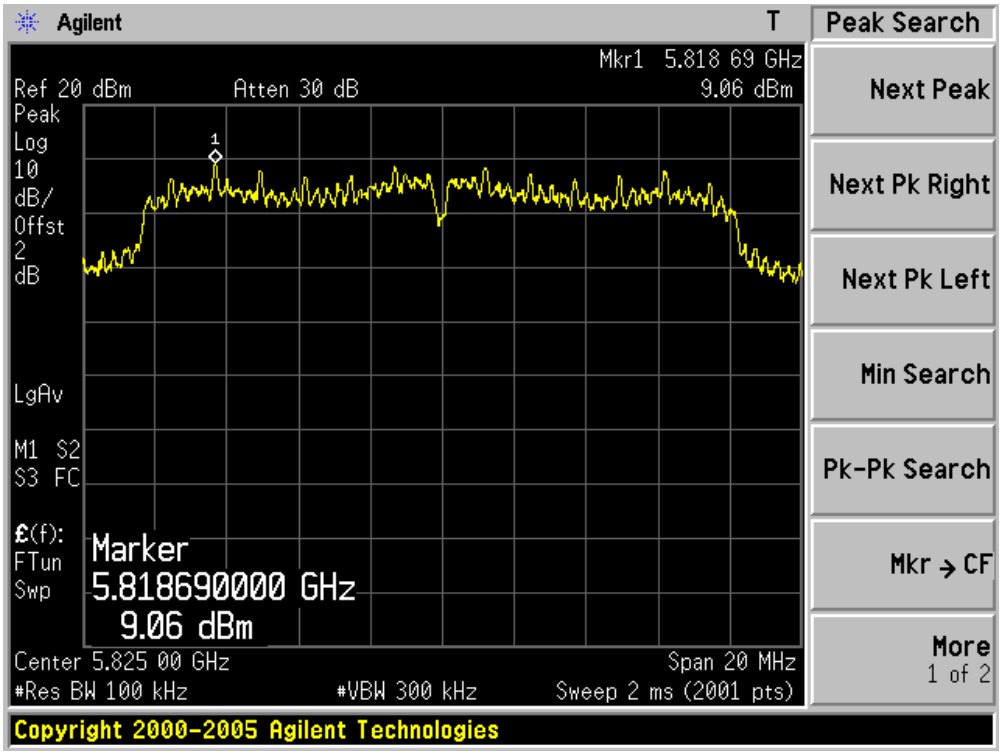
Channel 149 (5745MHz)



Channel 157 (5785MHz)



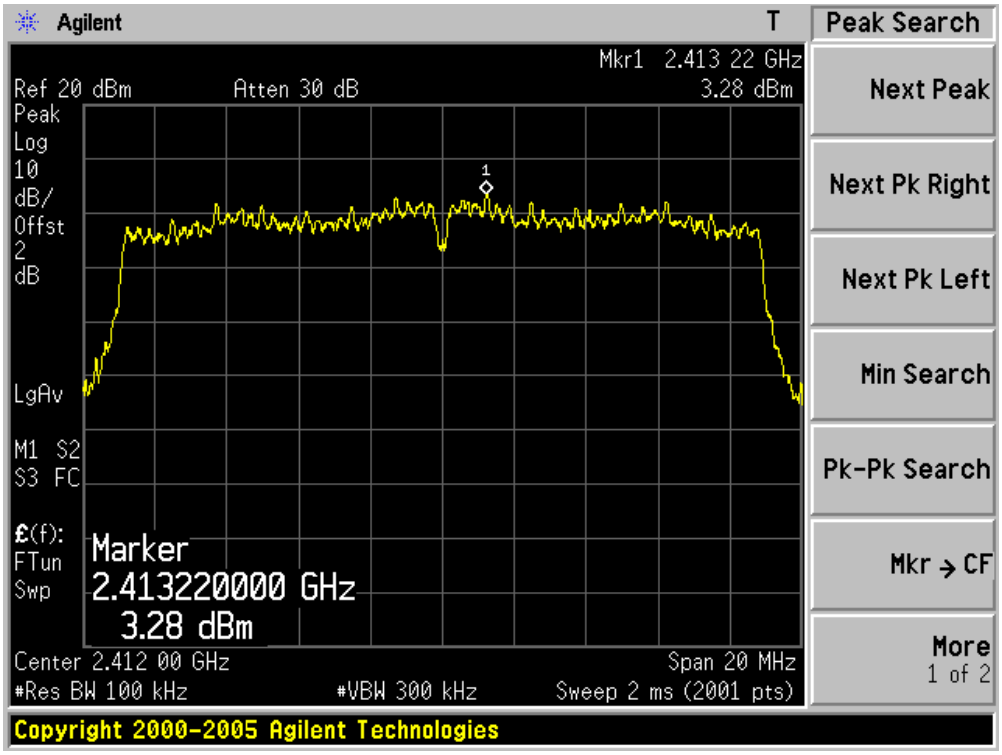
Channel 165 (5825MHz)



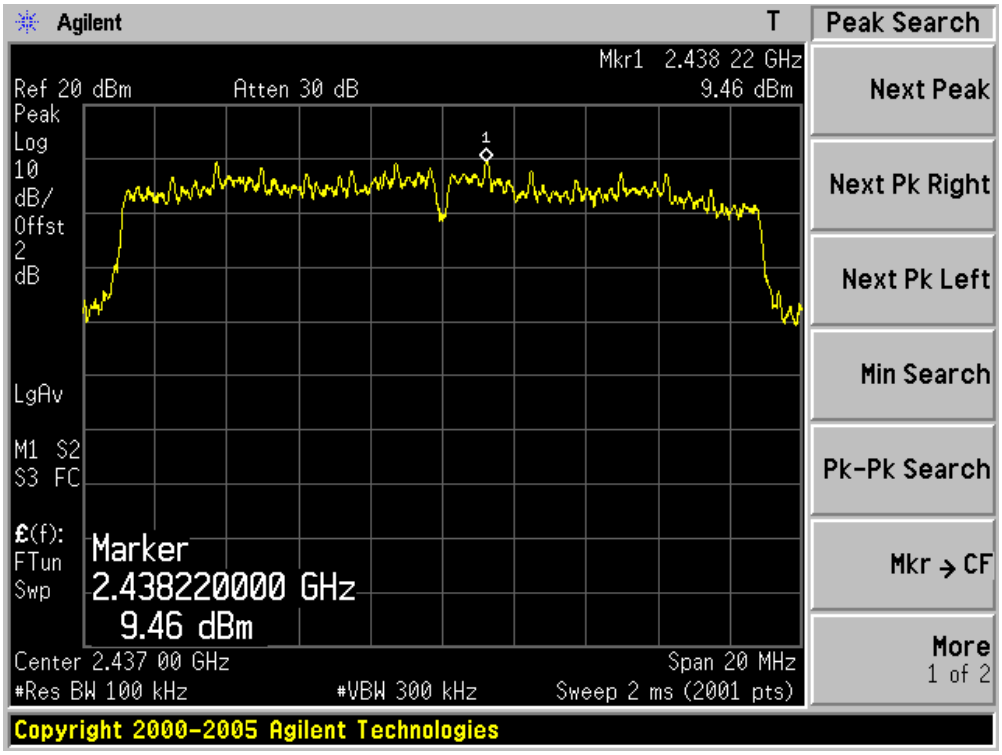
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 2)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
01	2412	N/A	3.28	-15.2	-11.92	8	Pass
06	2437	N/A	9.46	-15.2	-5.74	8	Pass
11	2462	N/A	3.85	-15.2	-11.35	8	Pass
149	5745	N/A	0.67	-15.2	-14.53	8	Pass
157	5785	N/A	1.88	-15.2	-13.32	8	Pass
165	5825	N/A	3.90	-15.2	-11.30	8	Pass

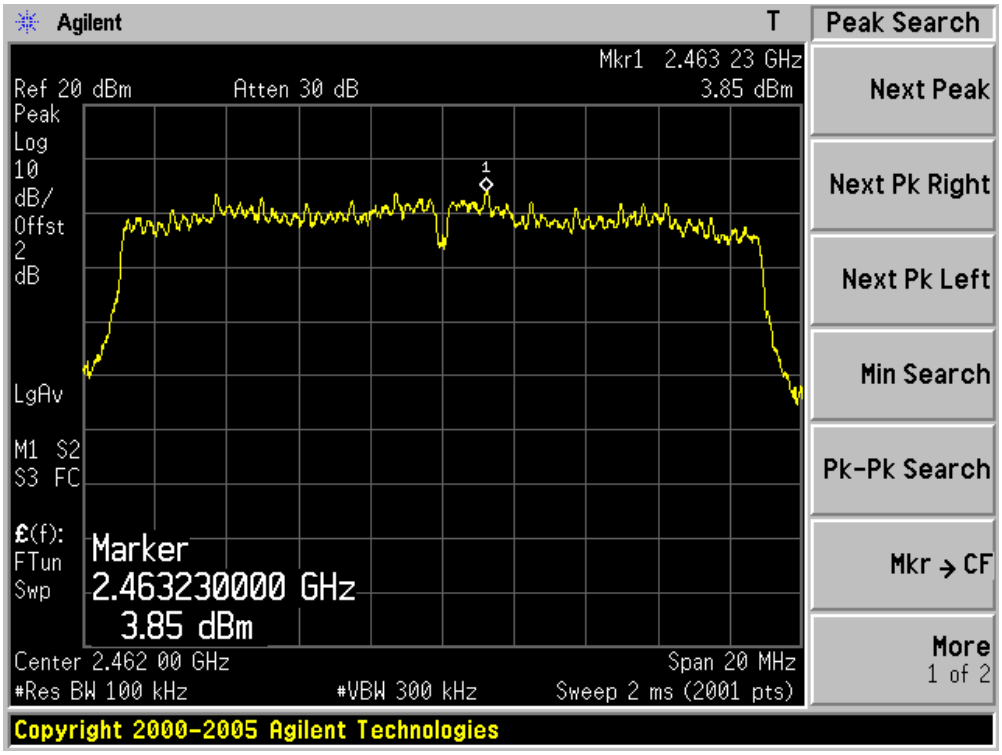
Channel 01 (2412MHz)



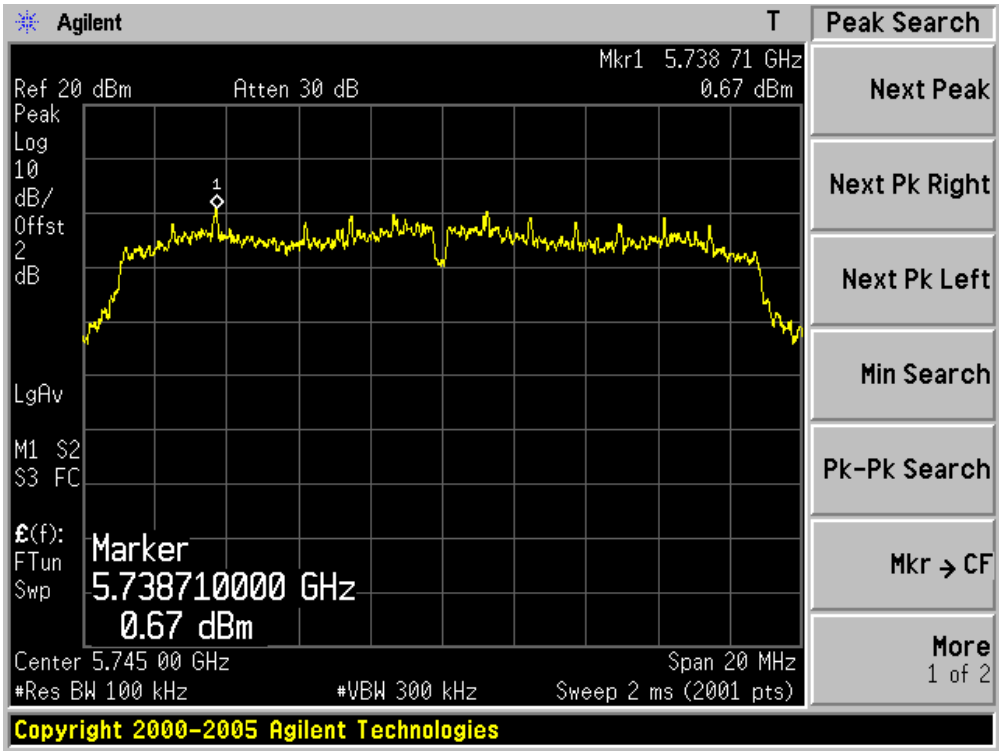
Channel 06 (2437MHz)



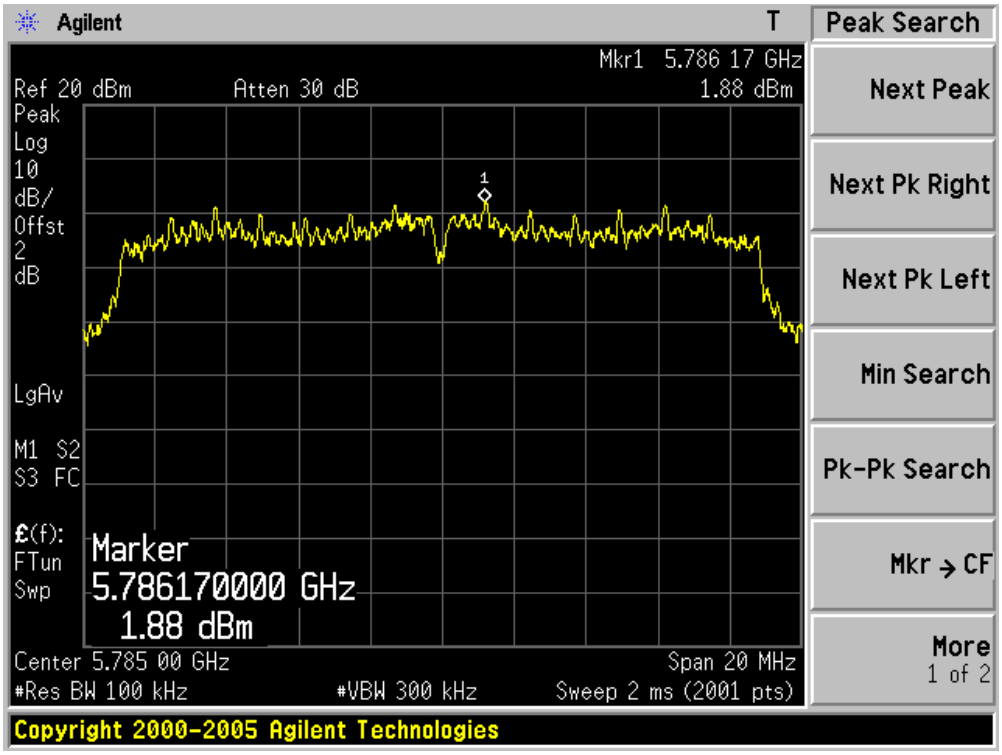
Channel 11 (2462MHz)



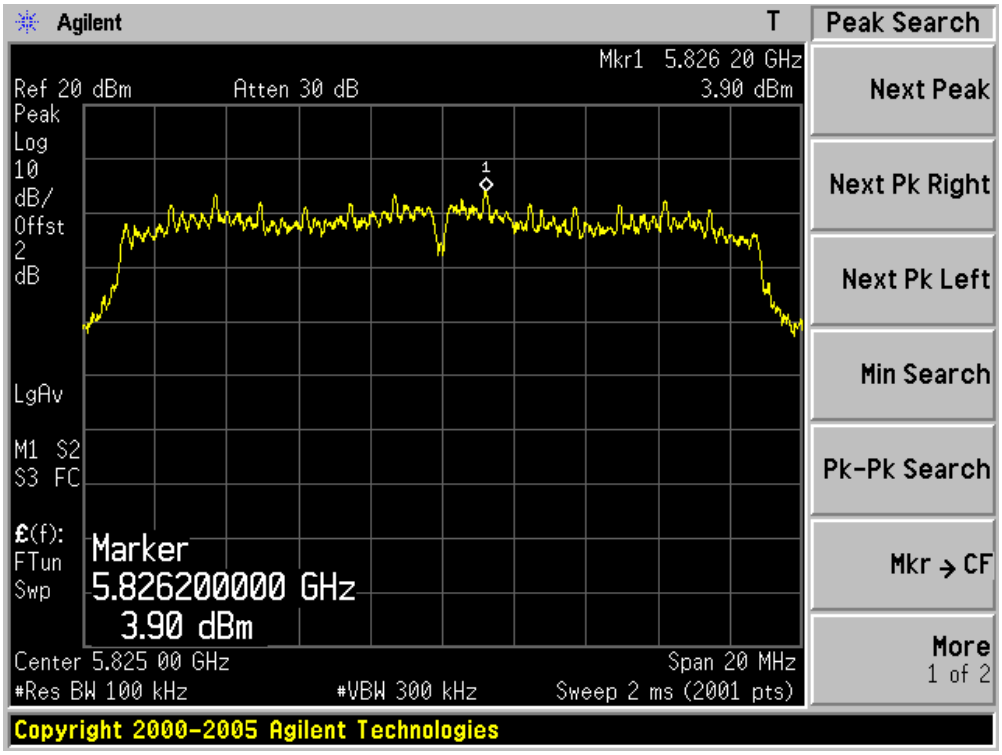
Channel 149 (5745MHz)



Channel 157 (5785MHz)



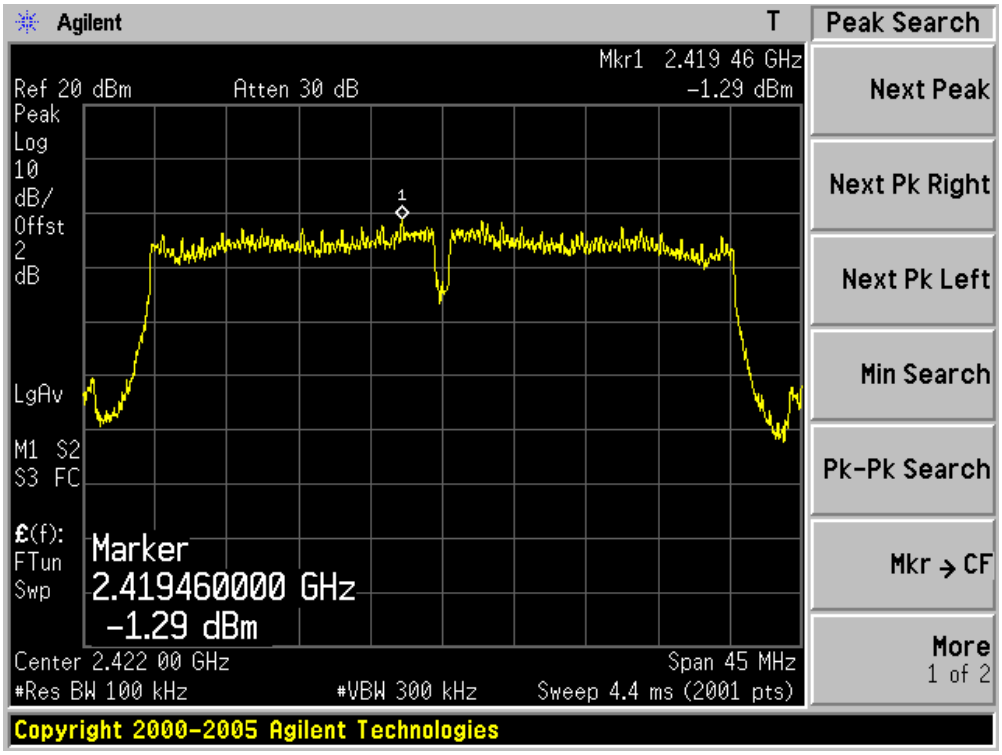
Channel 165 (5825MHz)



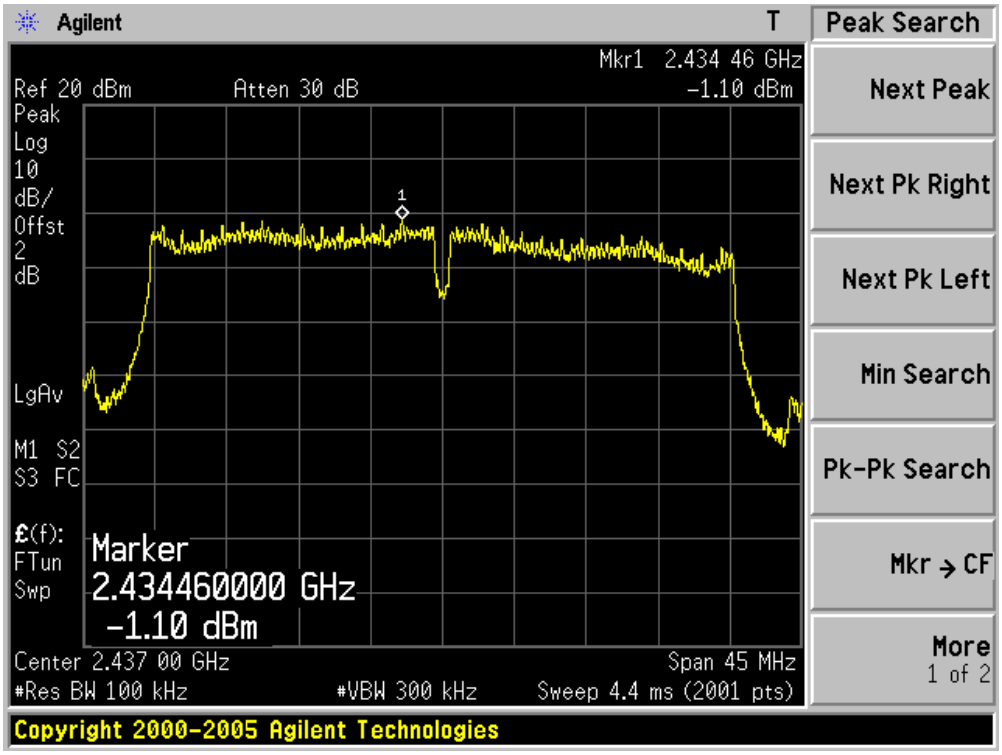
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 2)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
03	2422	N/A	-1.29	-15.2	-16.49	8	Pass
06	2437	N/A	-1.10	-15.2	-16.3	8	Pass
09	2452	N/A	-0.71	-15.2	-15.91	8	Pass
151	5755	N/A	-2.10	-15.2	-17.30	8	Pass
159	5795	N/A	0.18	-15.2	-15.02	8	Pass

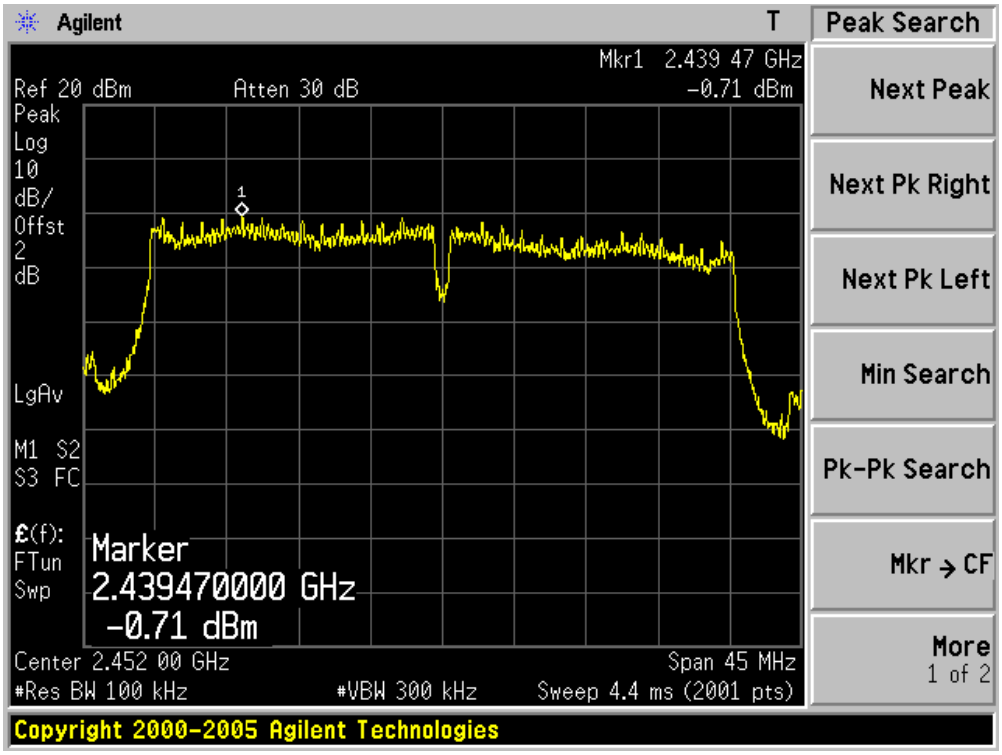
Channel 03 (2422MHz)



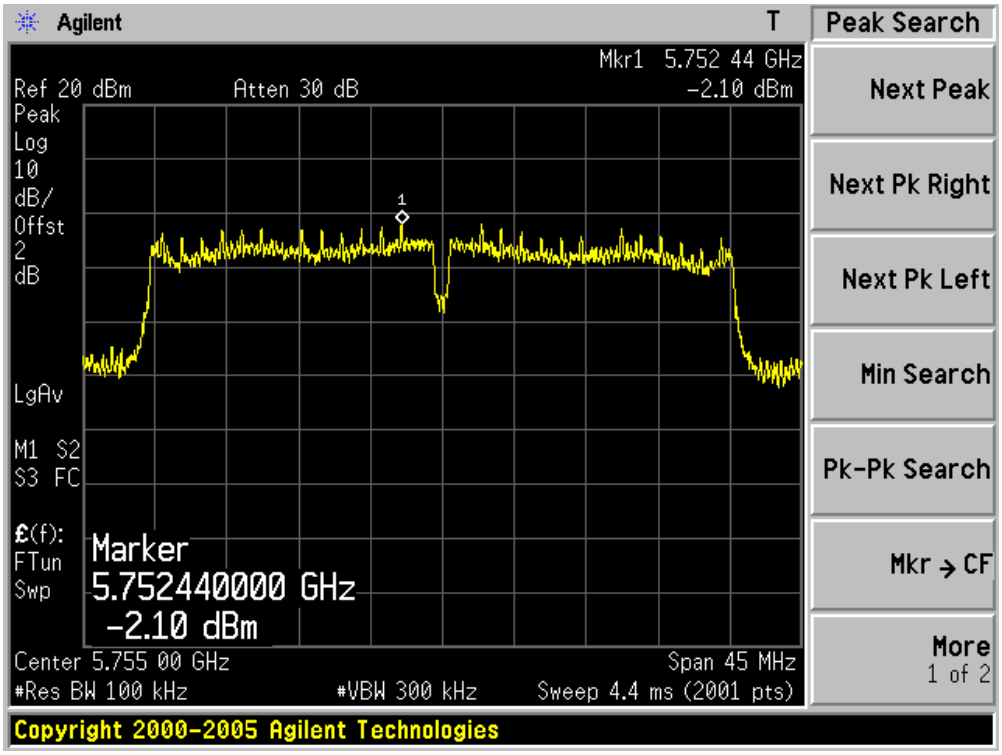
Channel 06 (2437MHz)



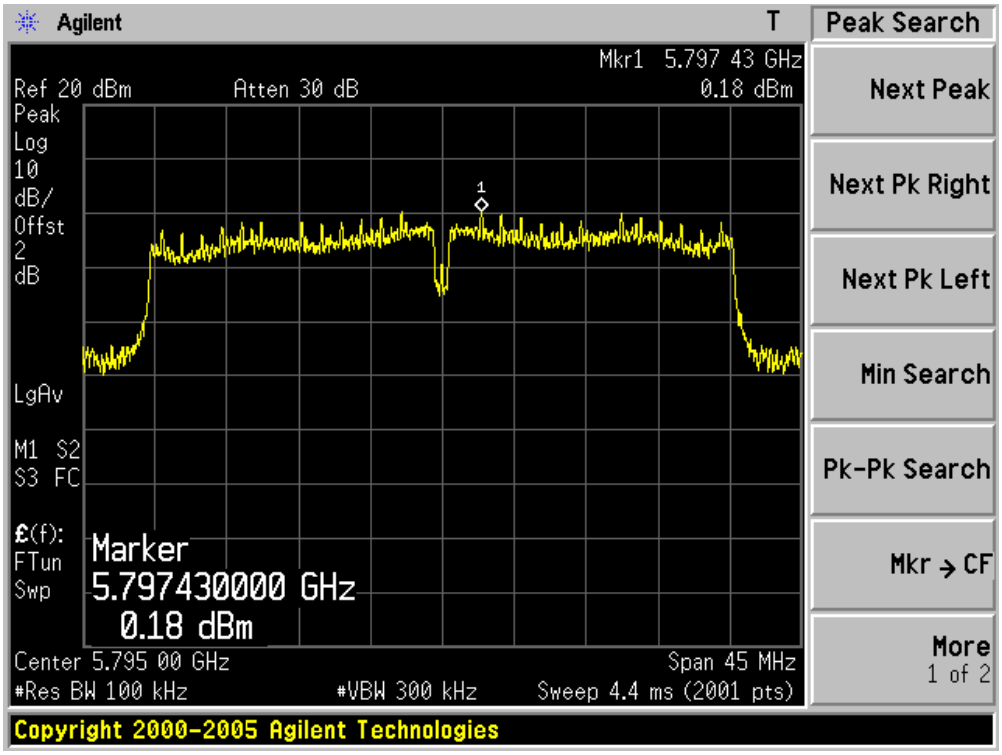
Channel 09 (2452MHz)



Channel 151 (5755MHz)



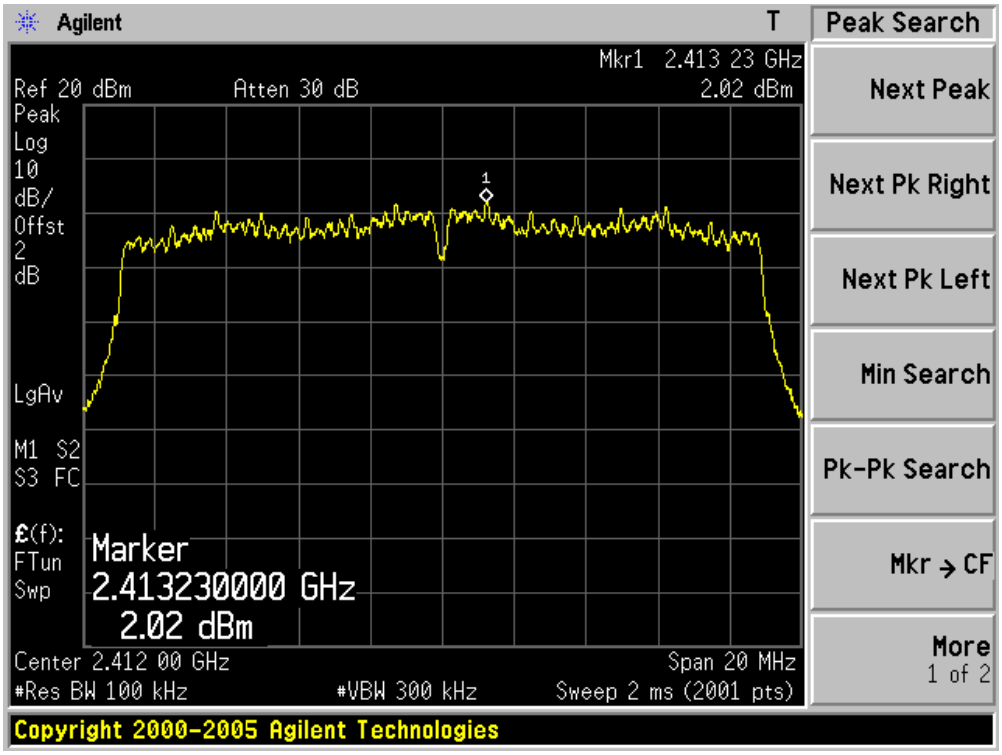
Channel 159 (5795MHz)



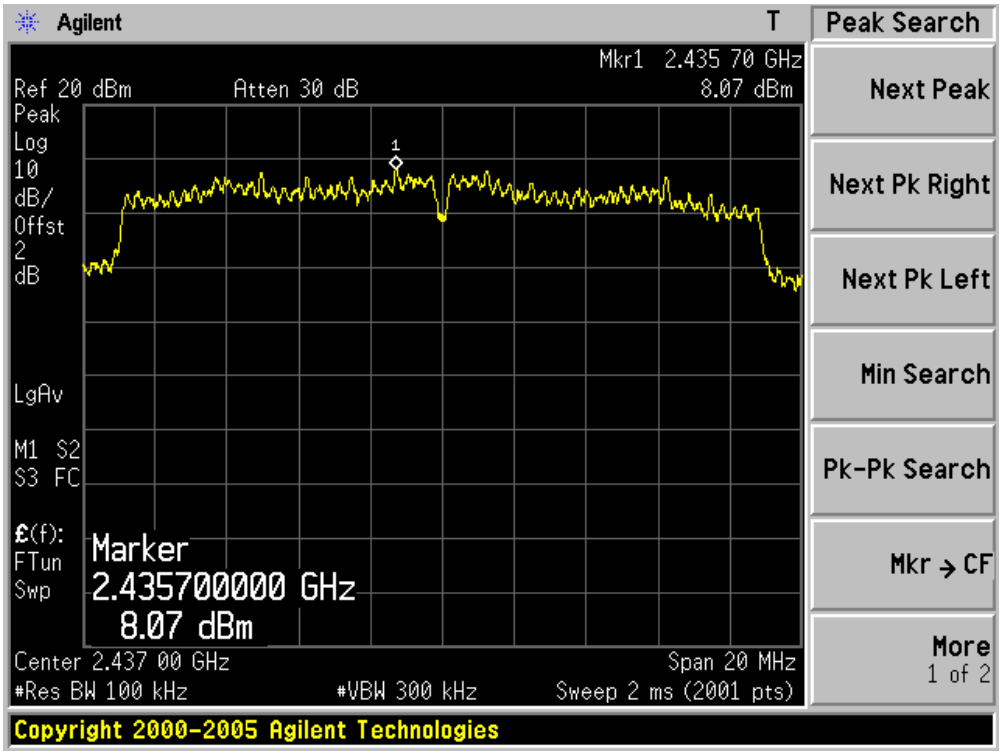
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz) (Chain 1+2)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
01	2412	2.02	1.85	-15.2	-10.25	8	Pass
06	2437	8.07	6.91	-15.2	-4.66	8	Pass
11	2462	2.92	2.65	-15.2	-9.40	8	Pass
149	5745	2.23	0.93	-15.2	-10.56	8	Pass
157	5785	2.08	1.69	-15.2	-10.30	8	Pass
165	5825	1.74	2.98	-15.2	-9.79	8	Pass

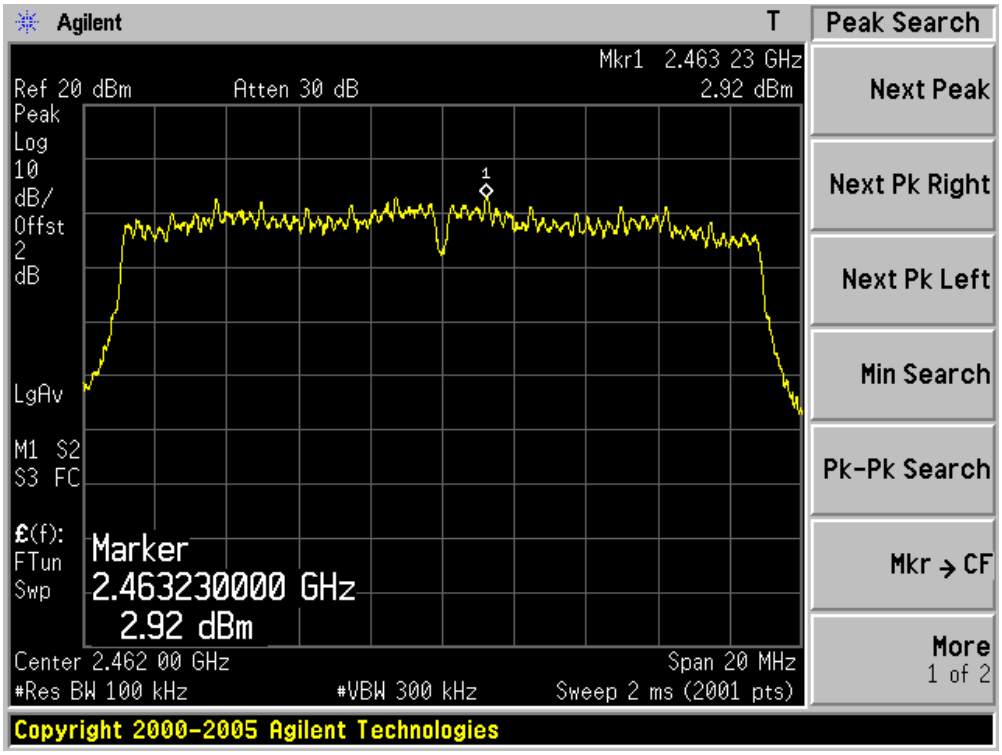
Channel 01 (2412MHz) – Chain 1



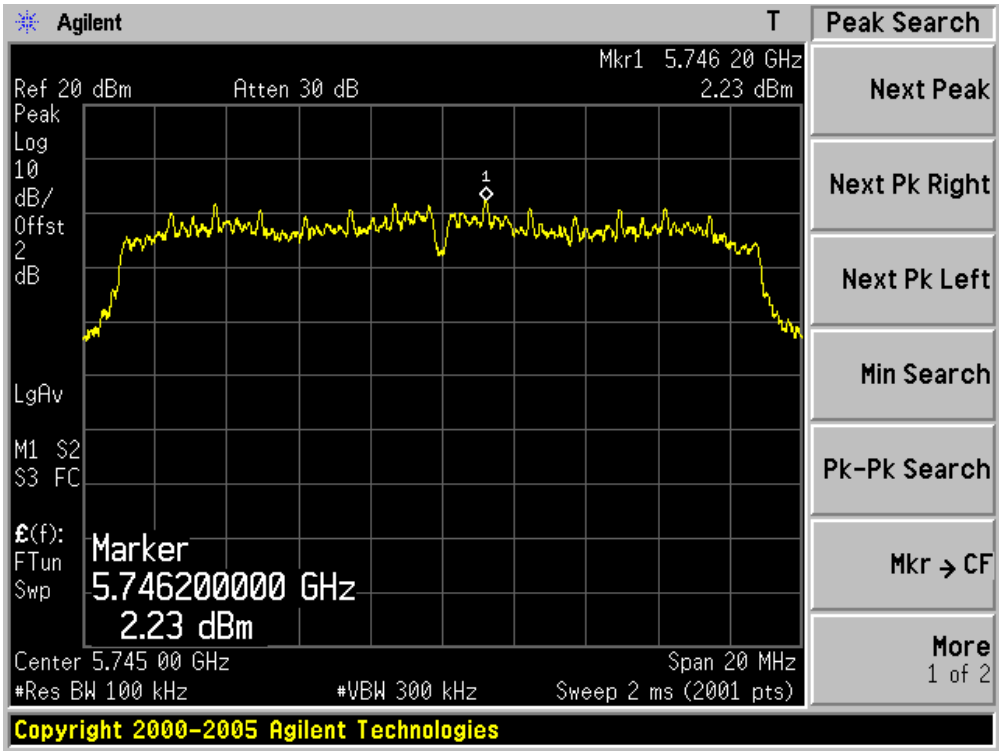
Channel 06 (2437MHz) – Chain 1



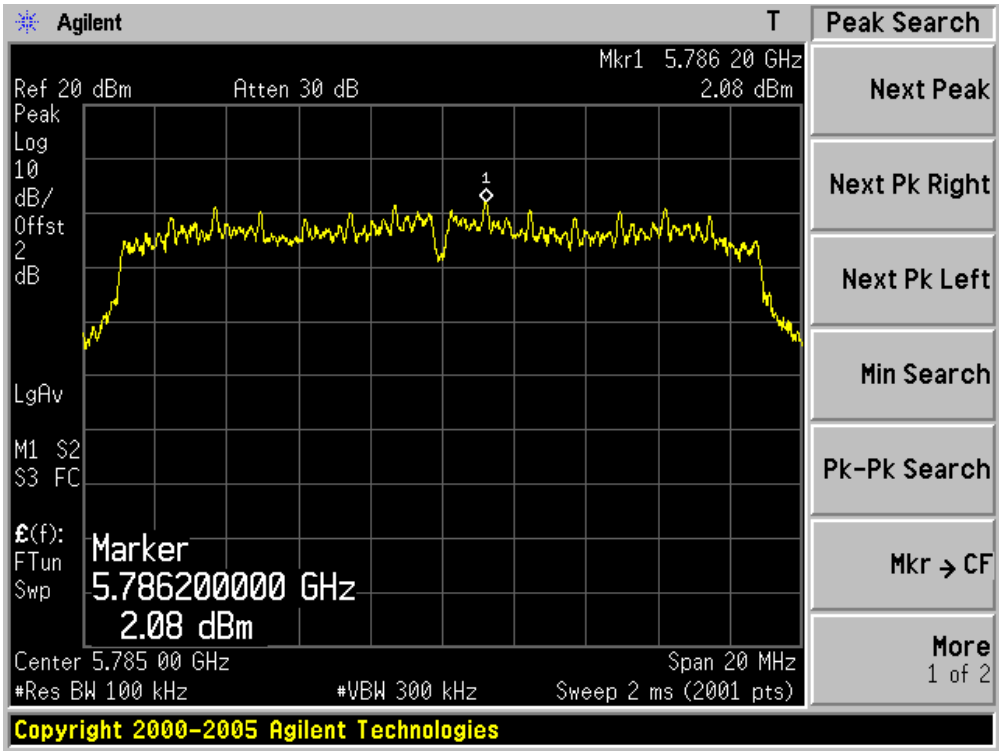
Channel 11 (2462MHz) – Chain 1



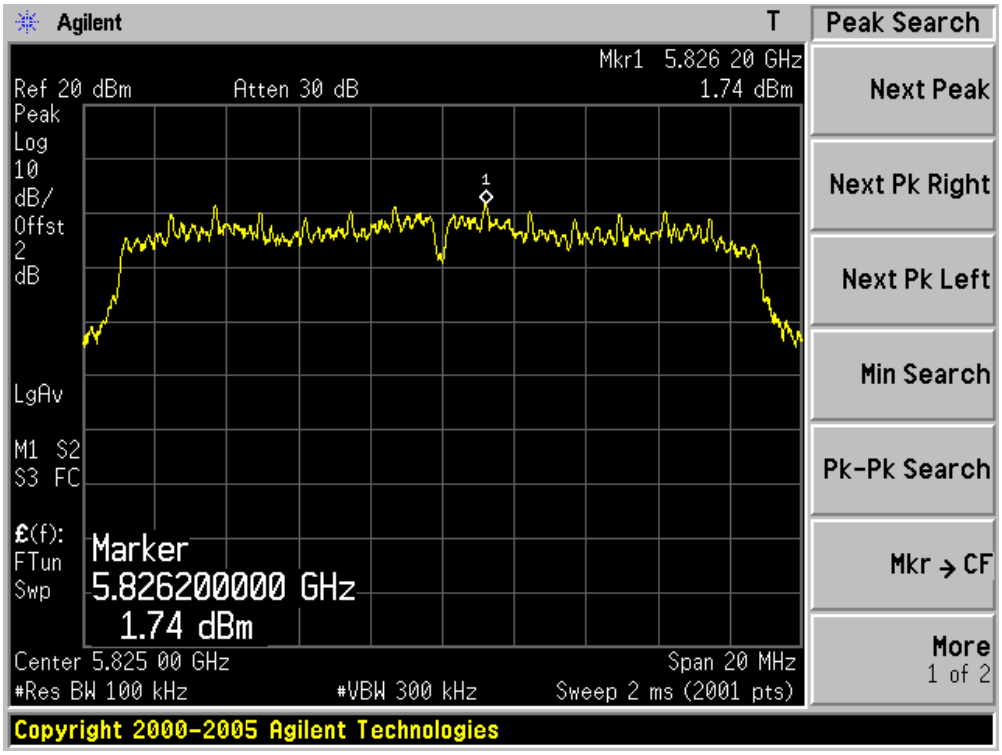
Channel 149 (5745MHz) – Chain 1



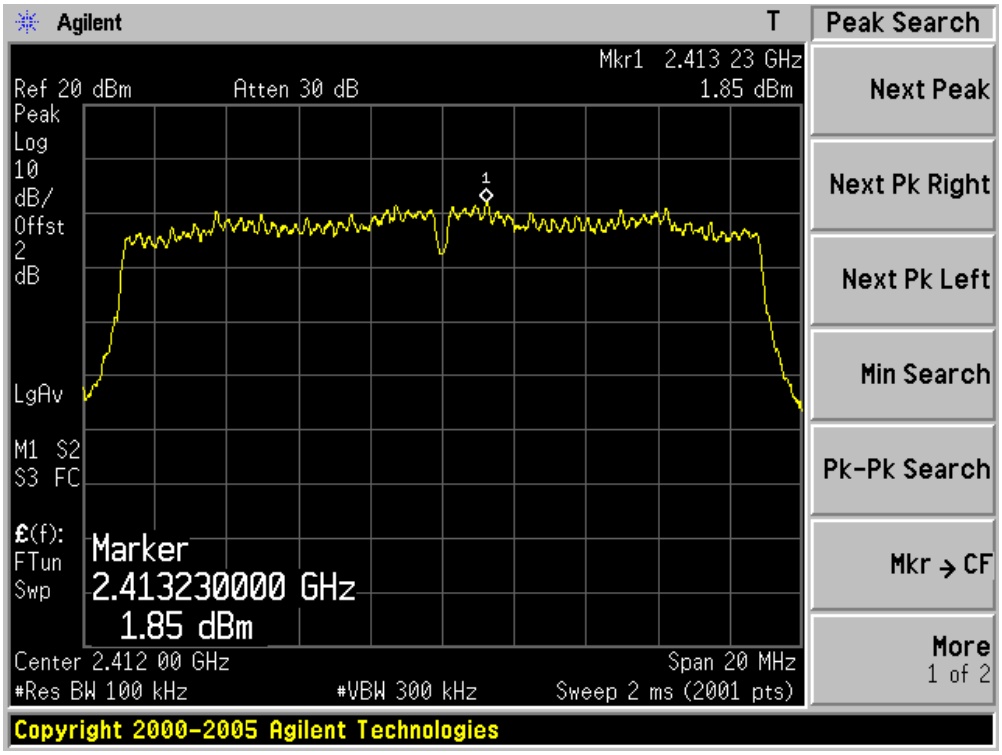
Channel 157 (5785MHz) – Chain 1



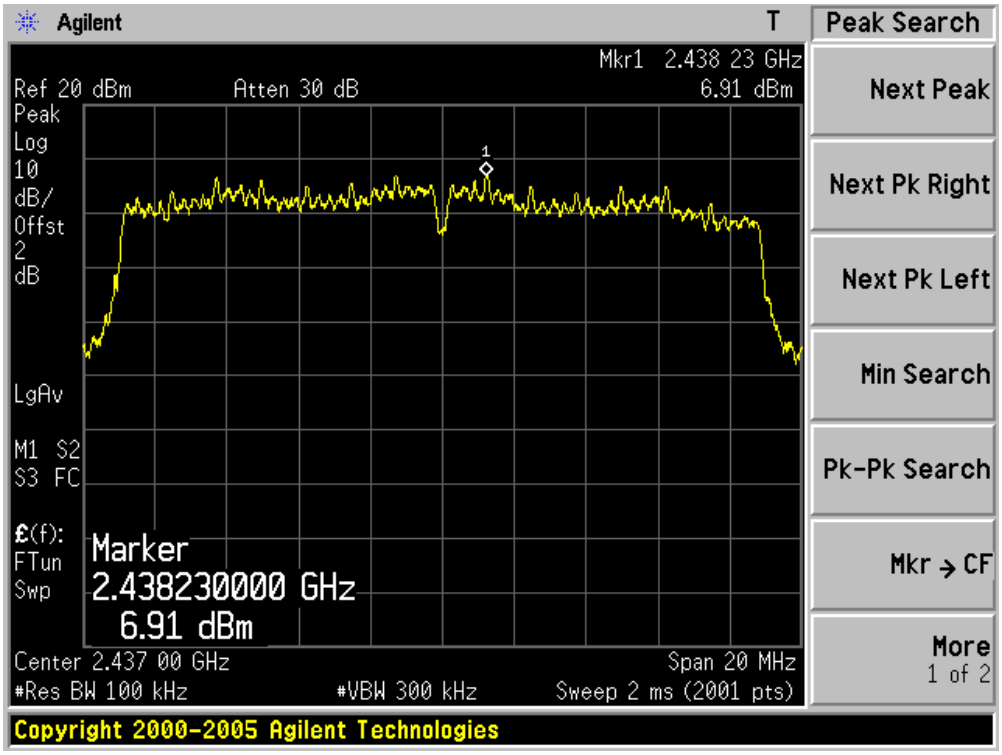
Channel 165 (5825MHz) – Chain 1



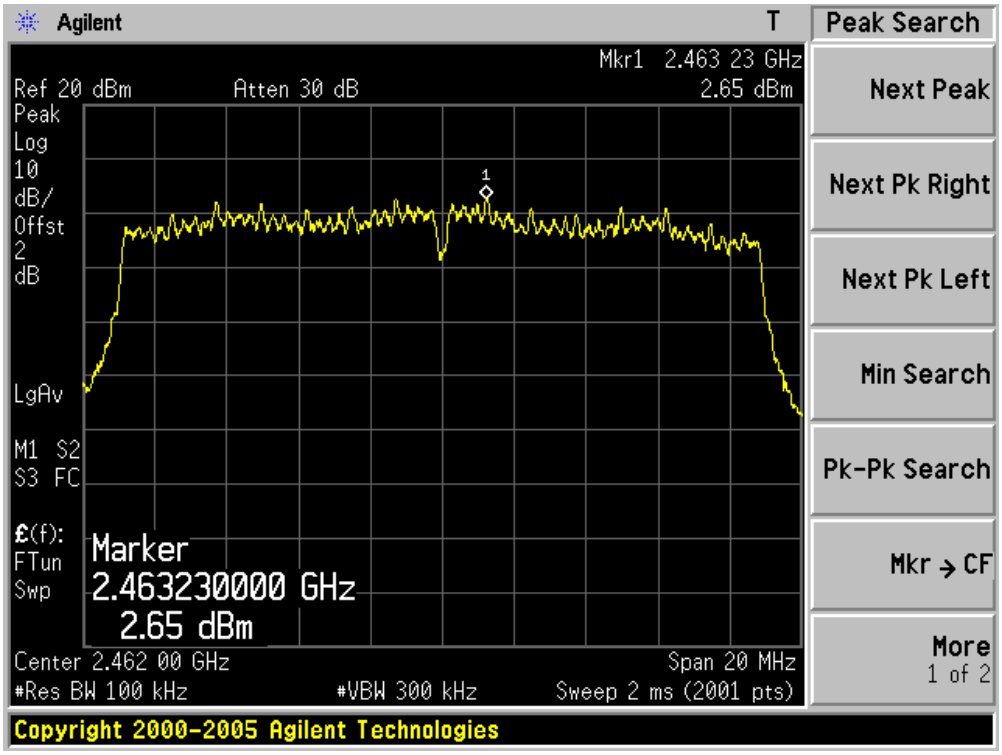
Channel 01 (2412MHz) – Chain 2



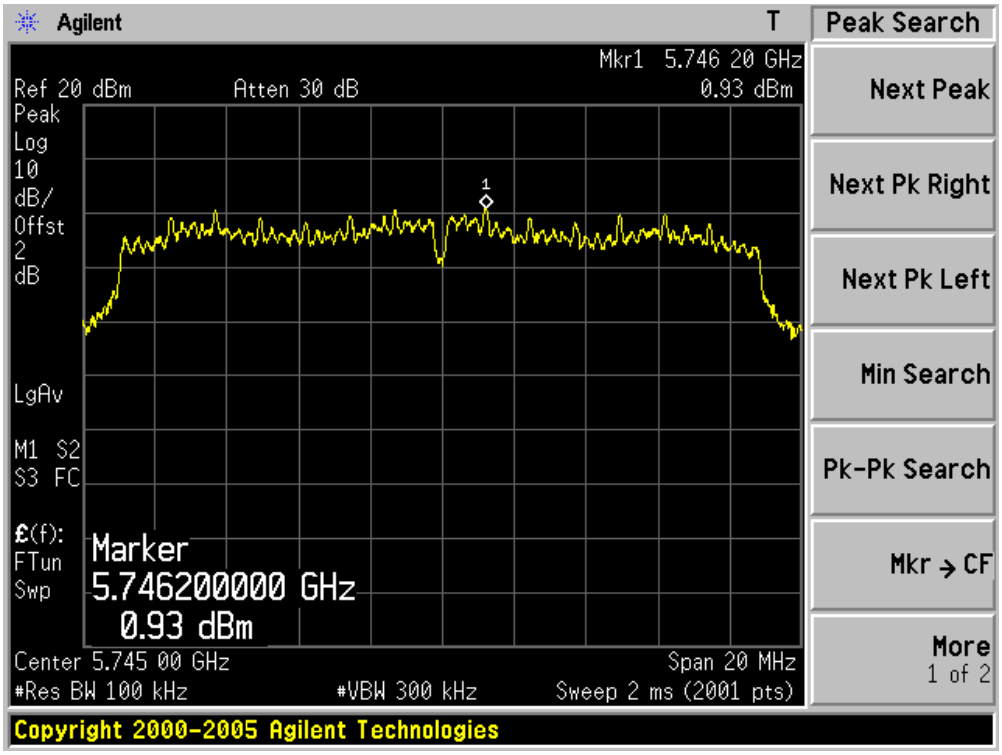
Channel 06 (2437MHz) – Chain 2



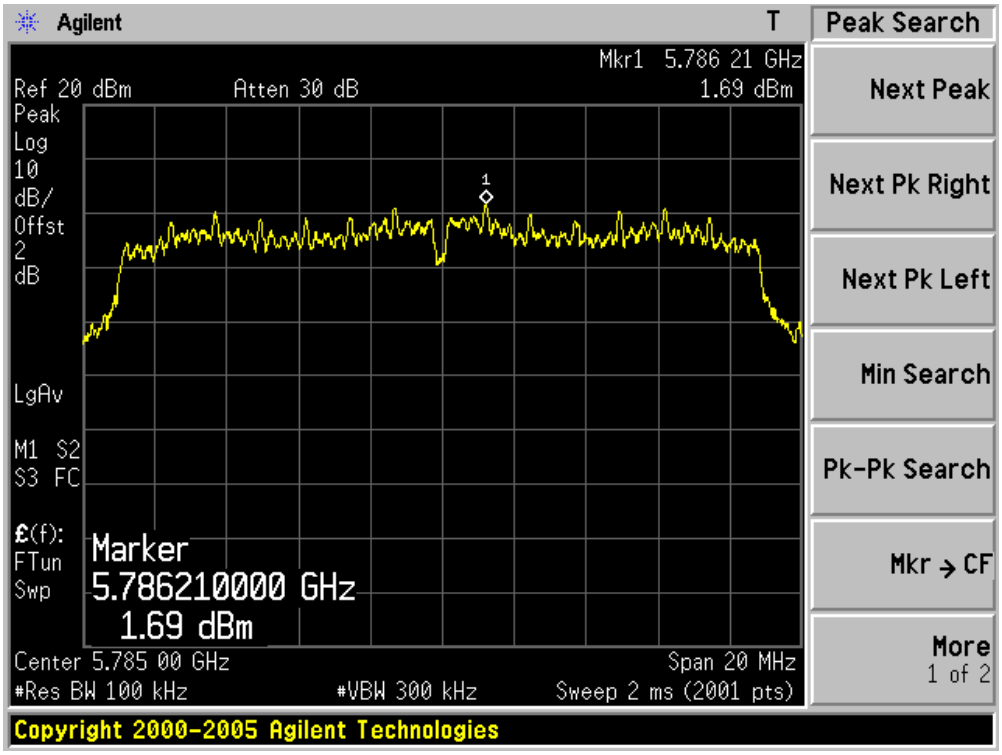
Channel 11 (2462MHz) – Chain 2



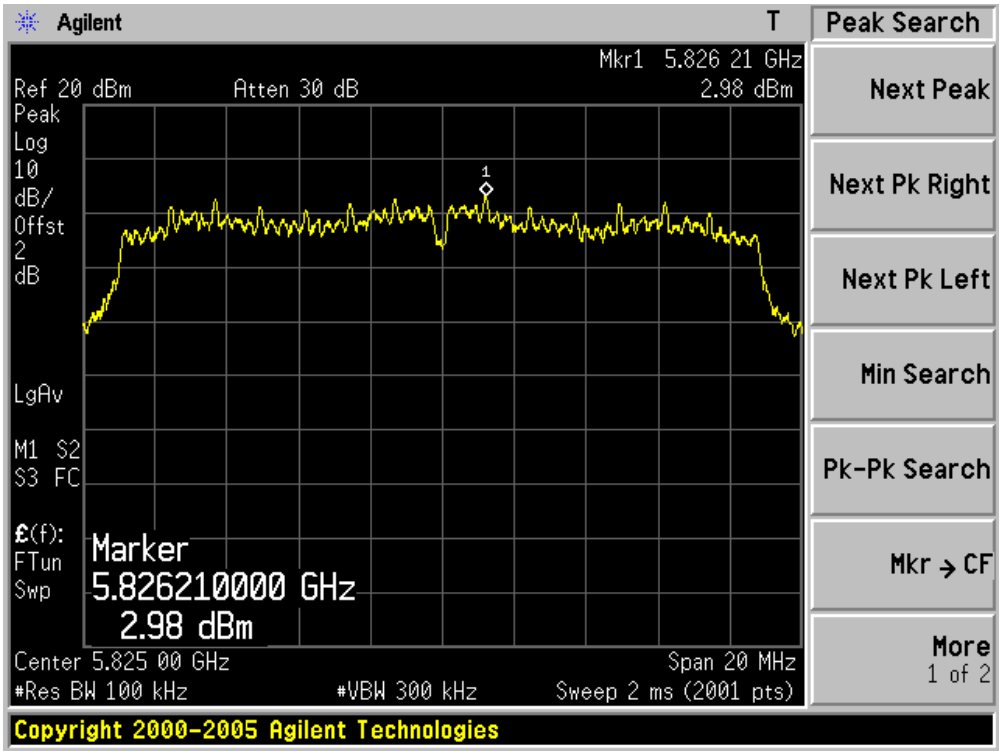
Channel 149 (5745MHz) – Chain 2



Channel 157 (5785MHz) – Chain 2



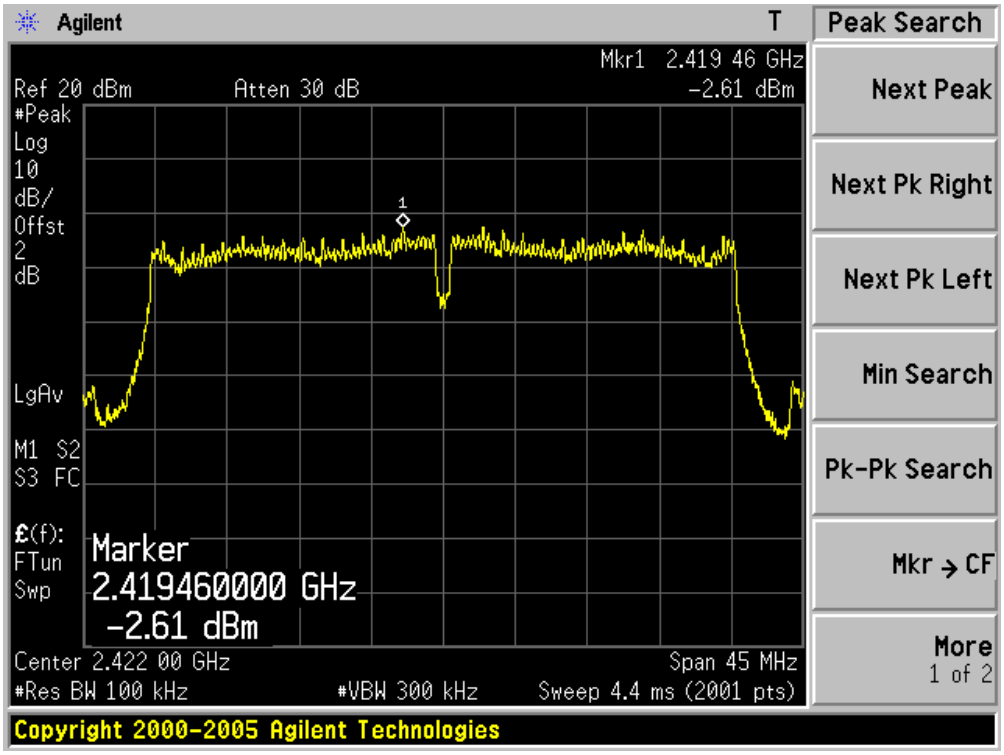
Channel 165 (5825MHz) – Chain 2



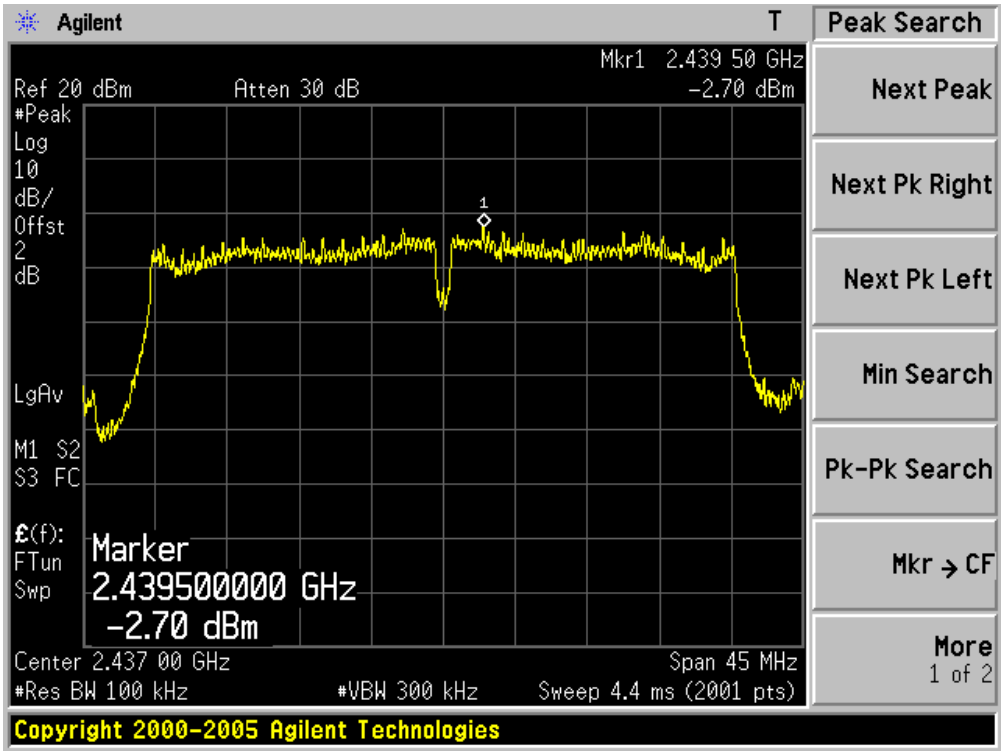
Product	:	IP-STB
Test Item	:	Power Spectral Density
Test Site	:	TR-8
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz) (Chain 1+2)

Channel No.	Frequency (MHz)	Reading Value (dBm)		BWCF (dB)	PSD (dBm)	Limit (dBm)	Result
		Chain 1	Chain 2				
03	2422	-2.61	-2.81	-15.2	-14.9	8	Pass
06	2437	-2.70	-2.52	-15.2	-14.8	8	8
09	2452	0.33	0.30	-15.2	-11.87	8	8
151	5755	-1.15	-1.64	-15.2	-13.58	8	8
159	5795	-0.99	0.50	-15.2	-12.37	8	8

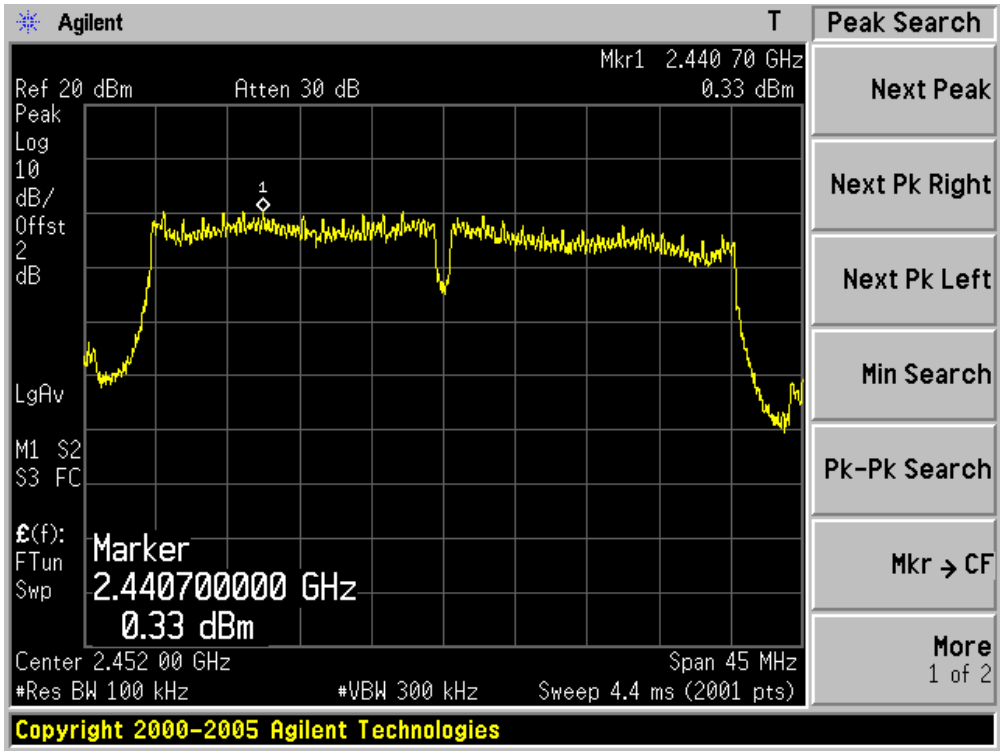
Channel 03 (2422MHz) – Chain 1



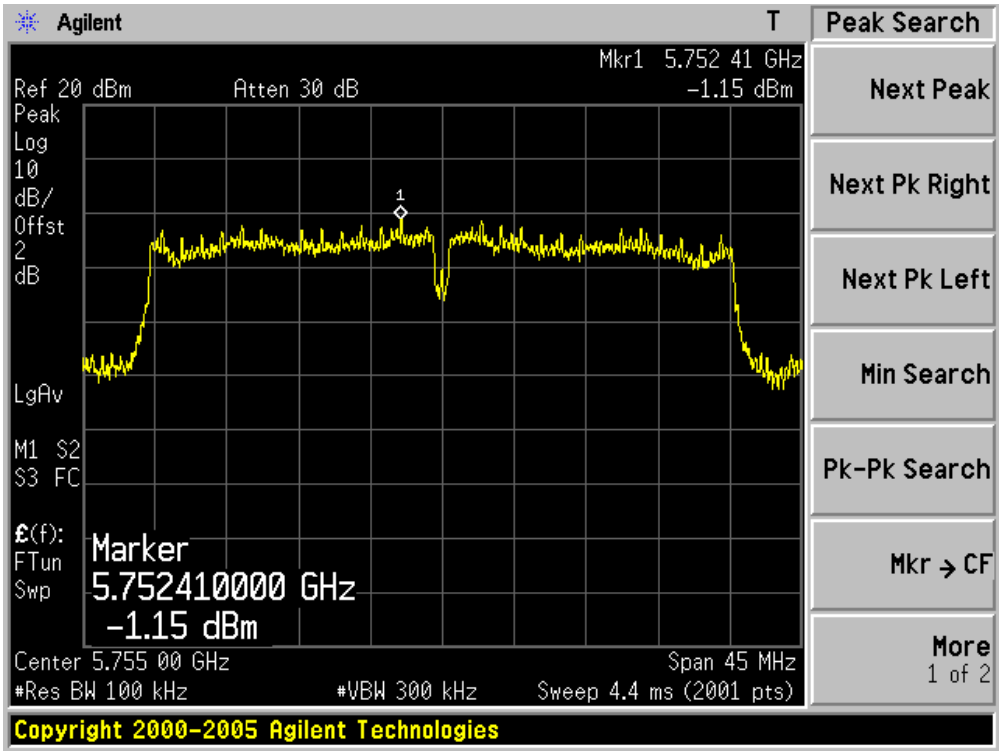
Channel 06 (2437MHz) – Chain 1



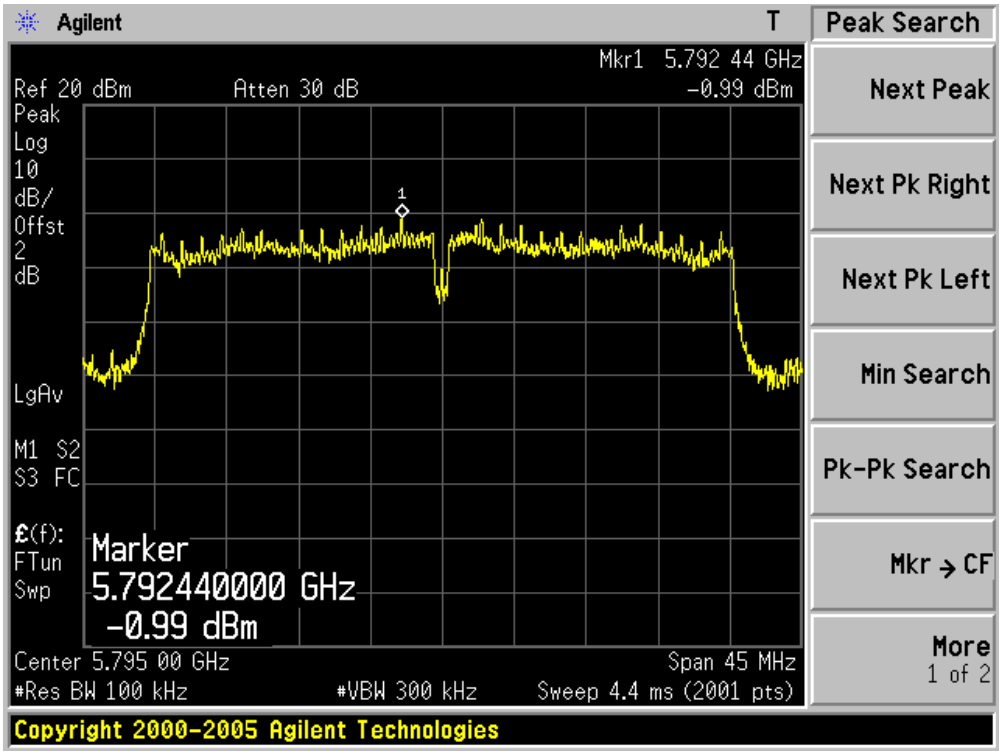
Channel 09 (2452MHz) – Chain 1



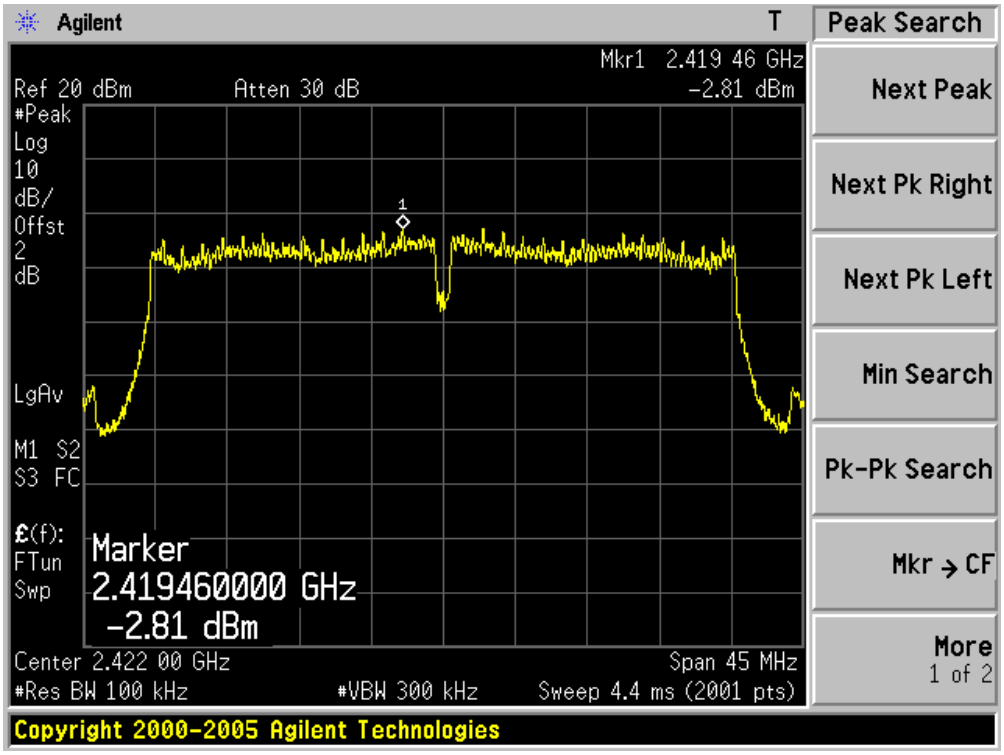
Channel 151 (5755MHz) – Chain 1



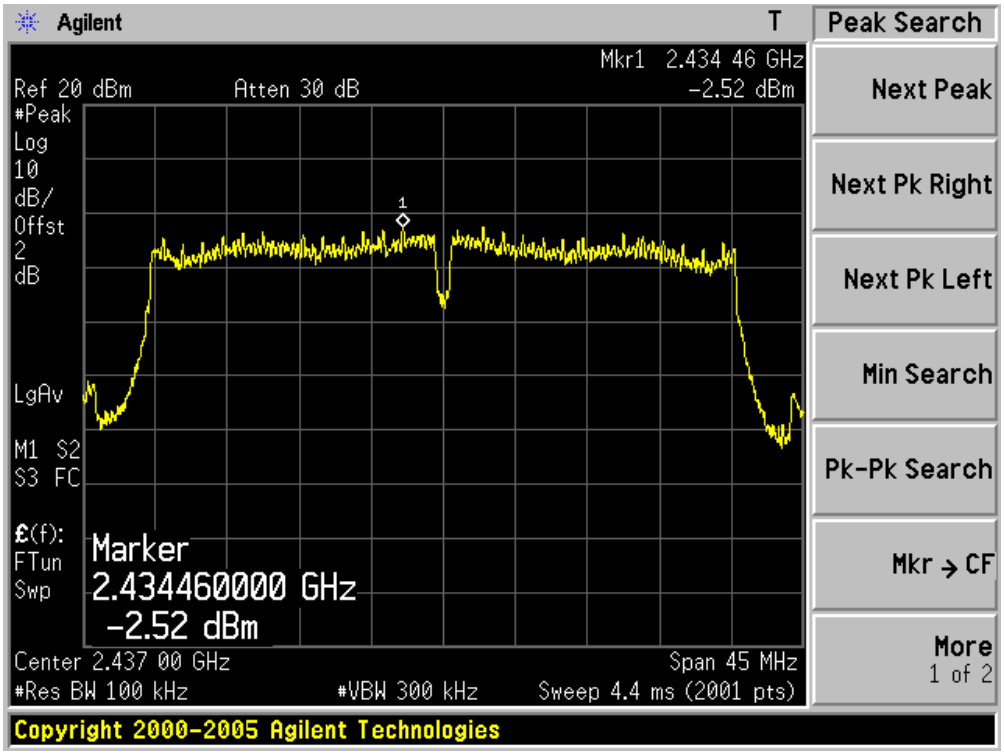
Channel 159 (5795MHz) – Chain 1



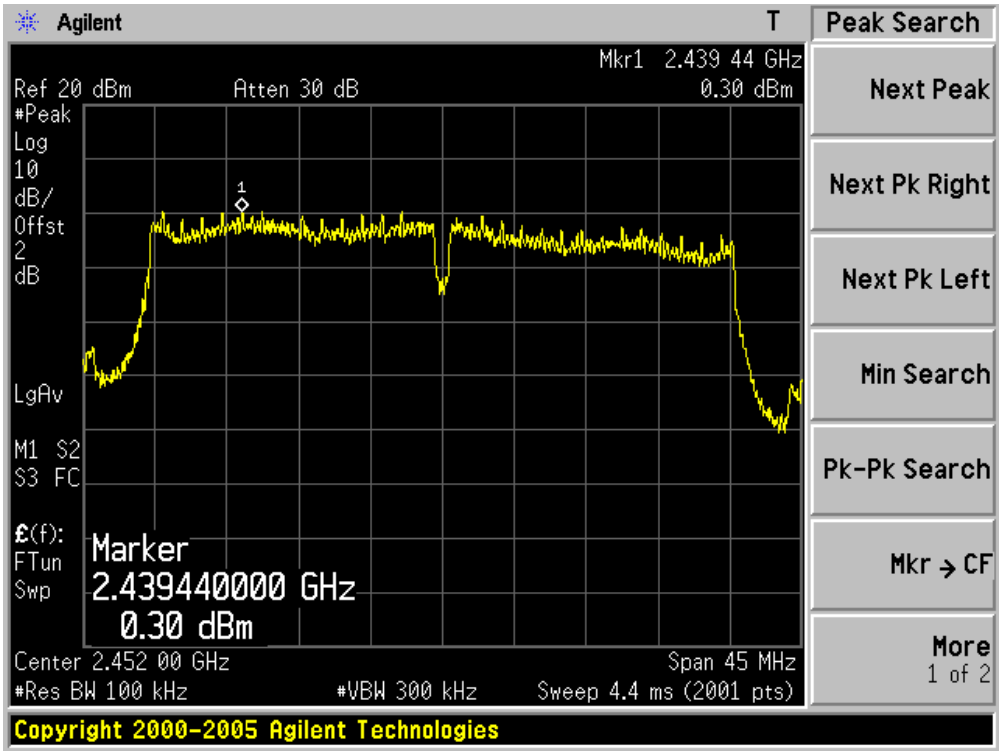
Channel 03 (2422MHz) – Chain 2



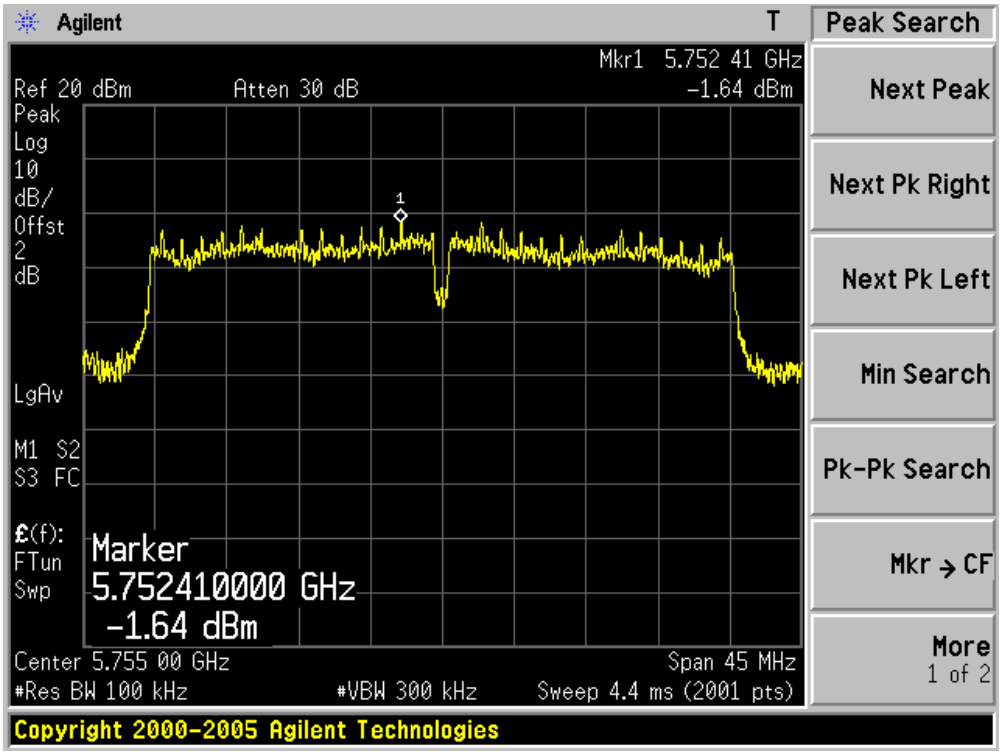
Channel 06 (2437MHz) – Chain 2



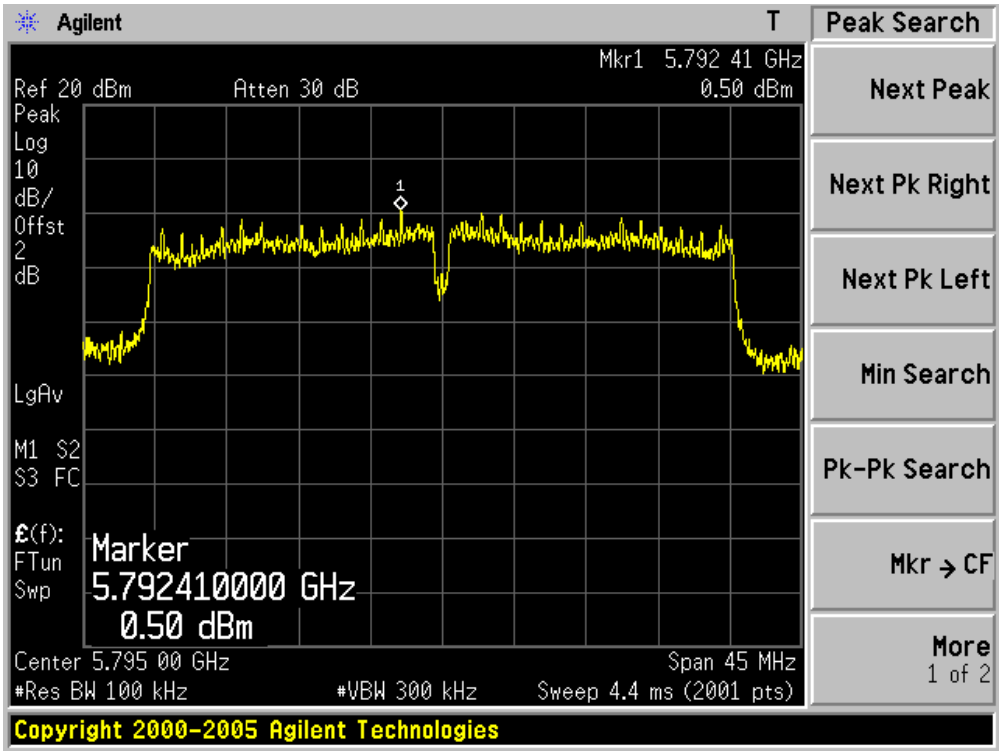
Channel 09 (2452MHz) – Chain 2



Channel 151 (5755MHz) – Chain 2



Channel 159 (5795MHz) – Chain 2



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

11.1. Test Equipment

Radiated Emission / AC-2

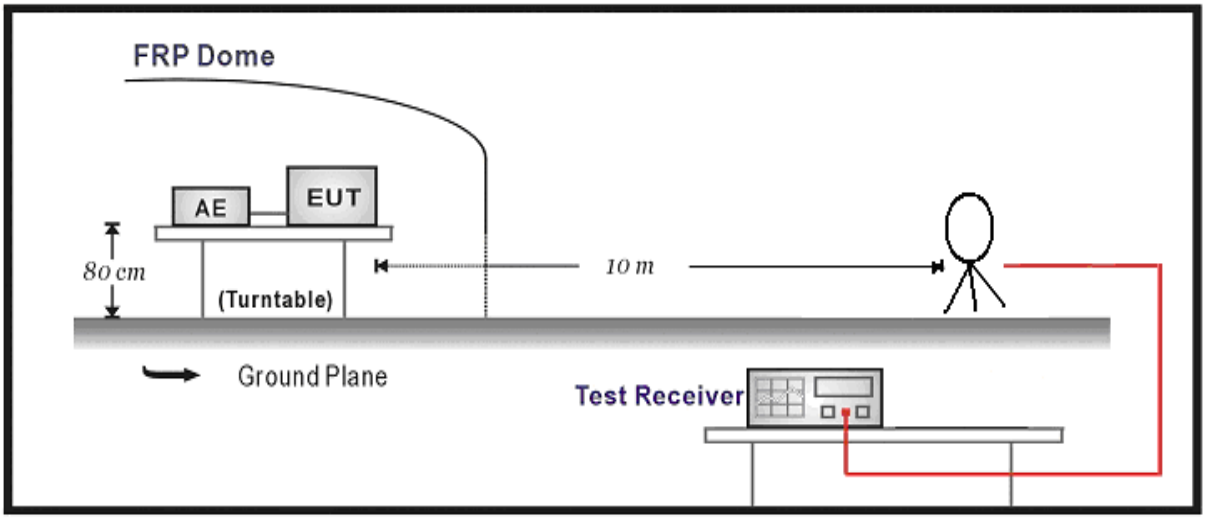
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
EMI Test Receiver	R&S	ESCI	100573	2013.04.18
Loop Antenna	R&S	HFH2-Z2	833799/003	2012.11.22
Bilog Antenna	Teseq GmbH	CBL6112D	27611	2012.10.18
Coaxial Cable	Huber+Suhner	SUCOFLEX 106	AC2-C	2013.03.02
Temperature/Humidity Meter	Zhicheng	ZC1-2	AC2-TH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

Radiated Emission / AC-5

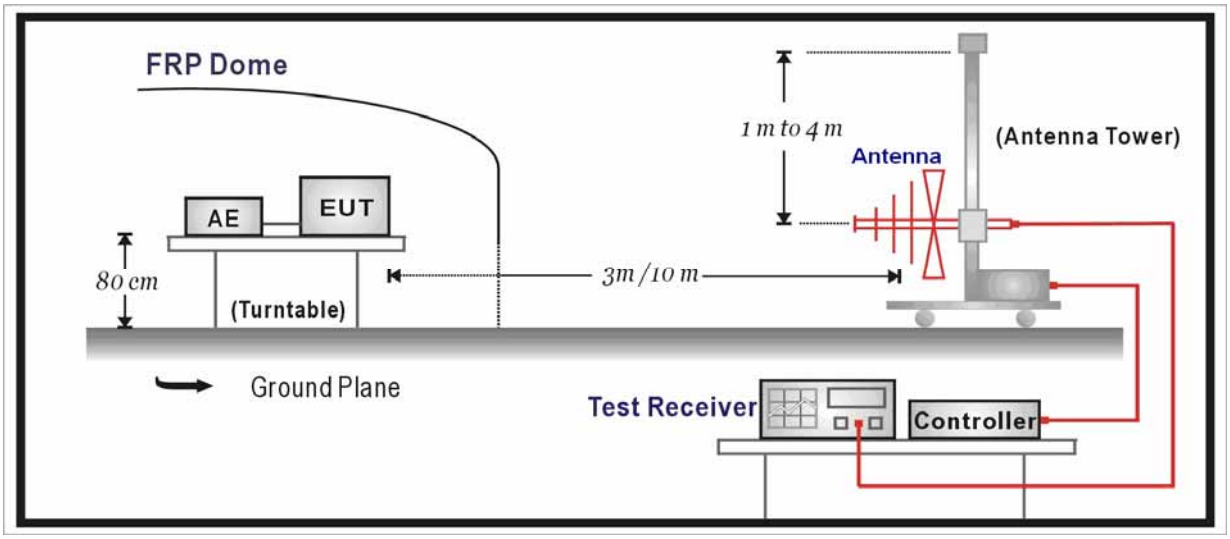
Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9010A	MY48030494	2013.04.18
Preamplifier	Miteq	NSP1800-25	1364185	2013.05.04
Preamplifier	QuieTek	AP-040G	CHM-0906001	2013.05.04
Bilog Antenna	Teseq GmbH	CBL6112D	27612	2012.10.18
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	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

11.2. Test Setup

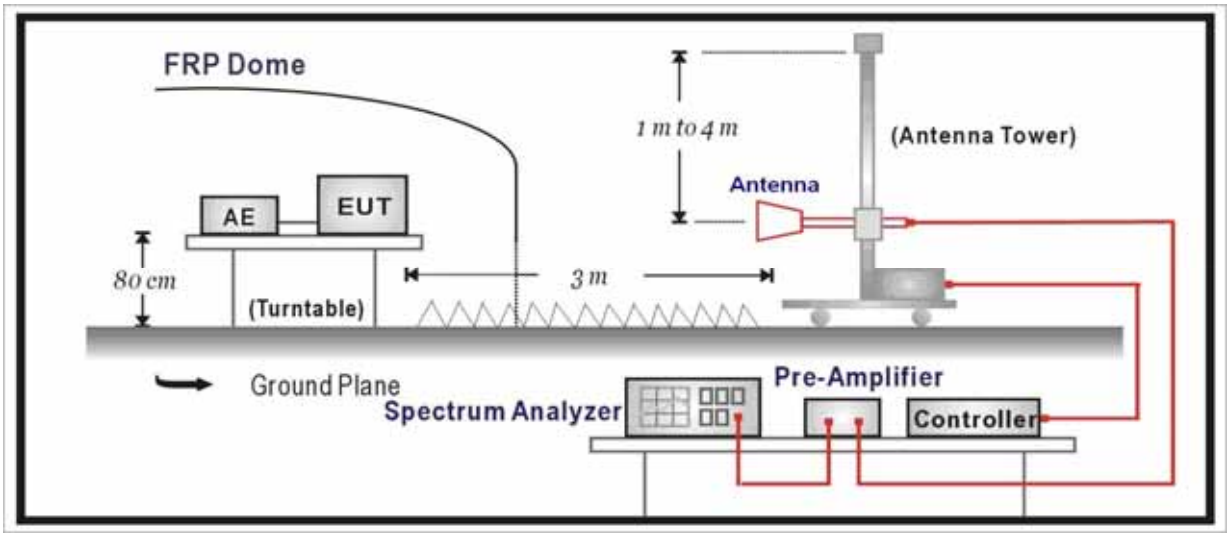
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



11.3. 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)

11.4. 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.

11.5. Uncertainty

The measurement uncertainty above 1G is defined as ± 3.9 dB
below 1G is defined as ± 3.8 dB

11.6. 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	1	H	645.5	13.6	21.3	34.9	46	-11.1	QP
		V	601.3	14.7	21.2	35.9	46	-10.1	QP
		H	1331.5	53.3	-19.9	33.4	54(Note1)	-20.6	PK
		V	1221.0	52.3	-20.5	31.8	54(Note1)	-22.2	PK
	6	H	468.9	14.3	19.1	33.4	46	-12.6	QP
		V	348.2	13.7	16.2	29.9	46	-16.1	QP
		H	1629.0	54.3	-18.5	35.8	54(Note1)	-18.2	PK
		V	1501.5	51.9	-18.9	33.0	54(Note1)	-21.0	PK
	11	H	645.5	13.6	21.3	34.9	46	-11.1	QP
		V	601.3	14.7	21.2	35.9	46	-10.1	QP
		H	2215.5	53.9	-16.9	37.0	54(Note1)	-17.0	PK
		V	2657.5	55.0	-15.4	39.6	54(Note1)	-14.4	PK
	149	H	405.4	15.9	17.7	33.6	46	-12.4	QP
		V	601.3	14.7	21.2	35.9	46	-10.1	QP
		H	2657.5	51.6	-15.4	36.2	54(Note1)	-17.8	PK
		V	3099.5	51.0	-13.6	37.4	54(Note1)	-16.6	PK
	157	H	601.3	14.7	21.2	35.9	46	-10.1	QP
		V	800.2	14.3	22.8	37.1	46	-8.9	QP
		H	1331.5	53.2	-19.9	33.3	54(Note1)	-20.7	PK
		V	1280.5	51.9	-20.1	31.8	54(Note1)	-22.2	PK
	165	H	550.9	14.2	21.2	35.4	46	-10.6	QP
		V	456.3	14.4	18.9	33.3	46	-12.7	QP
		H	1629.0	55.3	-18.5	36.8	54(Note1)	-17.2	PK
		V	1875.5	51.6	-17.9	33.7	54(Note1)	-20.3	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	3	H	751.2	14.3	22.3	36.6	46	-9.4	QP
		V	800.2	14.0	22.8	36.8	46	-9.2	QP
		H	2003.0	53.0	-17.5	35.5	54(Note1)	-18.5	PK
		V	2215.5	54.7	-16.9	37.8	54(Note1)	-16.2	PK
	6	H	430.1	14.6	18.3	32.9	46	-13.1	QP
		V	456.3	14.4	18.9	33.3	46	-12.7	QP
		H	2657.5	51.7	-15.4	36.3	54(Note1)	-17.7	PK
		V	3099.5	52.2	-13.6	38.6	54(Note1)	-15.4	PK
	9	H	751.2	14.3	22.3	36.6	46	-9.4	QP
		V	751.2	14.3	22.3	36.6	46	-9.4	QP
		H	1323.0	54.6	-19.9	34.7	54(Note1)	-19.3	PK
		V	1102.0	52.5	-21.1	31.4	54(Note1)	-22.6	PK
	151	H	411.7	15.1	17.8	32.9	46	-13.1	QP
		V	450.0	14.4	18.8	33.2	46	-12.8	QP
		H	1629.0	55.1	-18.5	36.6	54(Note1)	-17.4	PK
		V	1331.5	52.5	-19.9	32.6	54(Note1)	-21.4	PK
	159	H	625.6	13.5	21.2	34.7	46	-11.3	QP
		V	642.6	14.1	21.3	35.4	46	-10.6	QP
		H	2003.0	52.8	-17.5	35.3	54(Note1)	-18.7	PK
		V	1629.0	53.1	-18.5	34.6	54(Note1)	-19.4	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.