

APPLICATION FOR CERTIFICATION  
On Behalf of

TP-LINK Technologies Co., Ltd.

300Mbps Wireless N Mini PCI Adapter

Model Number: TL-WN861N

FCC ID: TE7WN861N

Prepared for : TP-LINK Technologies Co., Ltd.  
Building 7, Second Part, Honghualing Industrial Zone,  
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Report Number : ACS-F10008  
Date of Test : Jan.06~07, 2010  
Date of Report : Jan.07, 2010

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## TEST REPORT CERTIFICATION

Applicant : TP-LINK Technologies Co., Ltd.  
 Manufacturer : TP-LINK Technologies Co., Ltd.  
 EUT Description : 300Mbps Wireless N Mini PCI Adapter  
 FCC ID : TE7WN861N  
 (A) MODEL NO. : TL-WN861N  
 (B) SERIAL NO. : N/A  
 (C) POWER SUPPLY : DC 3.3V From PC  
 (D) TEST VOLTAGE : DC 3.3V From PC Input AC 120V/60Hz

Test Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 2008

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both radiated and conducted emissions.

The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Date of Test : Jan.06~07, 2010

Prepared by :

Edie Huang  
Edie Huang / Assistant

Reviewer :

Jamy Yu  
Jamy Yu / Senior Engineer

Approved & Authorized Signer :

Ken Lu / Manager



# 1. SUMMARY OF STANDARDS AND RESULTS

## 1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.4: 2003 KDB558074	PASS
Radiated Emission Test	FCC Part 15: 15.209 ANSI C63.4: 2003 KDB558074	PASS
Band Edge Compliance Test	FCC Part 15: 15.247 KDB558074	PASS
Conducted spurious emissions test	FCC Part 15: 15.247 KDB558074	PASS
6dB Bandwidth Test	FCC Part 15: 15.247 KDB558074	PASS
Output Power Test	FCC Part 15: 15.247 KDB558074	PASS
Power Spectral Density Test	FCC Part 15: 15.247 KDB558074	PASS
Antenna requirement	FCC Part 15: 15.203	PASS
N/A is an abbreviation for Not Applicable.		

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Product Name	: 300Mbps Wireless N Mini PCI Adapter
Model Number	: TL-WN861N
FCC ID	: TE7WN861N
Operation Frequency	: IEEE 802.11b/g, 802.11n HT20: 2412MHz---2462MHz IEEE802.11n HT40: 2422MHz---2452MHz
Channel Number	: IEEE 802.11b/g, 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Modulation Technology	: IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Output Power	: IEEE 802.11b: 18.23dBm IEEE 802.11g: 22.12dBm IEEE 802.11n HT20: 25.04dBm IEEE 802.11n HT40: 25.98dBm
Antenna and Gain	: MIMO 2x2 and 2dBi Dipole antenna used for test.
Applicant	: TP-LINK Technologies Co., Ltd. Building 7, Second Part, Honghualing Industrial Zone, Xili town, Nanshan, Shenzhen, P.R. China
Manufacturer	: TP-LINK Technologies Co., Ltd. Building 7, Second Part, Honghualing Industrial Zone, Xili town, Nanshan, Shenzhen, P.R. China
Date of Test	: Jan.06~07, 2010
Date of Receipt	: Jan.05, 2010
Sample Type	: Prototype production

## 2.2. Test information

The test software “art.exe” was used to control EUT work in Continuous TX mode, and select test channel, wireless mode and data rate.

Tested mode, channel, and data rate information			
Mode	data rate (Mbps)(see Note)	Channel	Frequency (MHz)
IEEE 802.11b	1	Low :CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
IEEE 802.11g	6	Low :CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
IEEE 802.11n HT20	6.5	Low :CH1	2412
	6.5	Middle: CH6	2437
	6.5	High: CH11	2462
IEEE 802.11n HT40	13.5	Low :CH1	2422
	13.5	Middle: CH4	2437
	13.5	High: CH7	2452
Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.			

This device is MIMO 2x2, according to exploratory test, when chain 1 and chain 2 transmit synchronous will lead worst radiated emissions, so the radiated emissions and band edge test were tested with chain 1 and chain 2 transmit synchronous. and all the conducted test(PK output power, power density, conducted spurious emissions, 6dB bandwidth) were tested with each chains.

## 2.3.Date rate VS power

Mode	Data rate(Mbps)	CH	Level (dBm)	Limit (dBm)
11b	1	CH6	18.23	<b>30</b>
	2	CH6	18.11	<b>30</b>
	5.5	CH6	18.15	<b>30</b>
	11	CH6	18.03	<b>30</b>
11g	6	CH6	22.12	<b>30</b>
	9	CH6	22.05	<b>30</b>
	12	CH6	21.97	<b>30</b>
	18	CH6	21.96	<b>30</b>
	24	CH6	21.87	<b>30</b>
	36	CH6	21.88	<b>30</b>
	48	CH6	21.89	<b>30</b>
	54	CH6	21.43	<b>30</b>
11n HT20	6.5	CH6	22.07	<b>30</b>
	13	CH6	21.97	<b>30</b>
	19.5	CH6	21.32	<b>30</b>
	26	CH6	21.45	<b>30</b>
	39	CH6	21.69	<b>30</b>
	52	CH6	21.73	<b>30</b>
	58.5	CH6	21.42	<b>30</b>
	65	CH6	21.56	<b>30</b>
11n HT40	13.5	CH4	23.05	<b>30</b>
	27	CH4	22.56	<b>30</b>
	40.5	CH4	22.73	<b>30</b>
	54	CH4	22.87	<b>30</b>
	81	CH4	22.37	<b>30</b>
	108	CH4	22.49	<b>30</b>
	121.5	CH4	22.59	<b>30</b>
	135	CH4	22.67	<b>30</b>
When IEEE 802.11b's data rate was 1Mbps ; IEEE 802.11g's data rate was 6Mbps, IEEE 802.11n HT20's data rate was 6.5 Mbps; IEEE802.11n HT40's data rate was 13.5Mbps the EUT have maximum output power and all the test was performed in this data rate set.				



## 2.4. Tested Supporting System Details

### 2.4.1. NOTEBOOK

M/N	:	PP09S
S/N	:	N/A
Manufacturer	:	DELL
Power Adaptor	:	Manufacturer: DELL, M/N: LA65NS1-00 Cable: Unshielded, Detachable, 4.0m (Bond one ferrite core)

## 2.5. Test Facility

### Site Description

Name of Firm	:	Audix Technology (Shenzhen) Co., Ltd. No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China
3m Anechoic Chamber	:	Mar.31, 2009 File on Federal Communication Commission Registration Number: 90454
3m & 10m Anechoic Chamber	:	Jan. 31, 2007 File on Federal Communication Commission Registration Number: 794232
EMC Lab.	:	Accredited by DATech, German Registration Number: DAT-P-091/99-01 Feb. 02, 2009  Accredited by NVLAP, USA NVLAP Code: 200372-0 Apr. 01, 2009

## 2.6. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	2.40dB
Uncertainty for Radiation Emission test in 3m chamber	3.82 dB (Polarize: V)
	4.32 dB (Polarize: H)
Uncertainty for Output power test	0.94 dB
Uncertainty for Power density test	2.10 dB
Uncertainty for Temperature and humidity test	2%
	1°C
Uncertainty for Frequency range test	$1 \times 10^{-9}$
Uncertainty for Bandwidth test	$1 \times 10^{-9}$
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

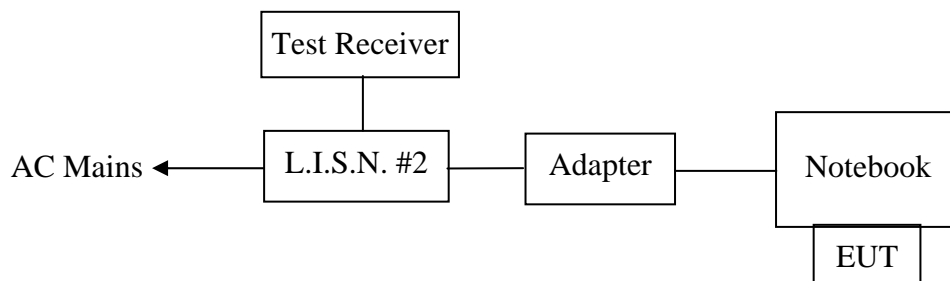
### 3. POWER LINE CONDUCTED EMISSION TEST

#### 3.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde & Schwarz	ESHS20	836600/006	May.08, 09	1 Year
2	L.I.S.N.#2	Kyoritsu	KNW-407	8-1636-1	May.08, 09	1 Year
3	Terminator	Hubersuhner	50Ω	No. 1	May.08, 09	1 Year
4	RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.08, 09	1 Year
5	Coaxial Switch	Anritsu	MP59B	M55367	May.08, 09	1 Year
6	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 09	1 Year

#### 3.2. Block Diagram of Test Setup

##### 3.2.1. Block diagram of connection between the EUT and simulators



*(EUT: 300Mbps Wireless N Mini PCI Adapter)*

#### 3.3. Power Line Conducted Emission Test Limits

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. \* Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

### 3.4. Configuration of EUT on Test

The following equipment are installed on Power Line Conducted Emission Test to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

#### 3.4.1. 300Mbps Wireless N Mini PCI Adapter (EUT)

Model Number : TL-WN861N  
Serial Number : N/A.

### 3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turned on the power of all equipment.

3.5.3. PC run test software to control the EUT worked in test mode (Tx Mode) and measured it.

### 3.6. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via Notebook connected to the power mains through a line impedance stabilization network (L.I.S.N. 2#). This provides a 50 ohm coupling impedance for the EUT (Please refer the block diagram of the test setup and photographs). The AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Test.

The bandwidth of test receiver (R & S ESHS20) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked.

The test result are reported on Section 3.7.,

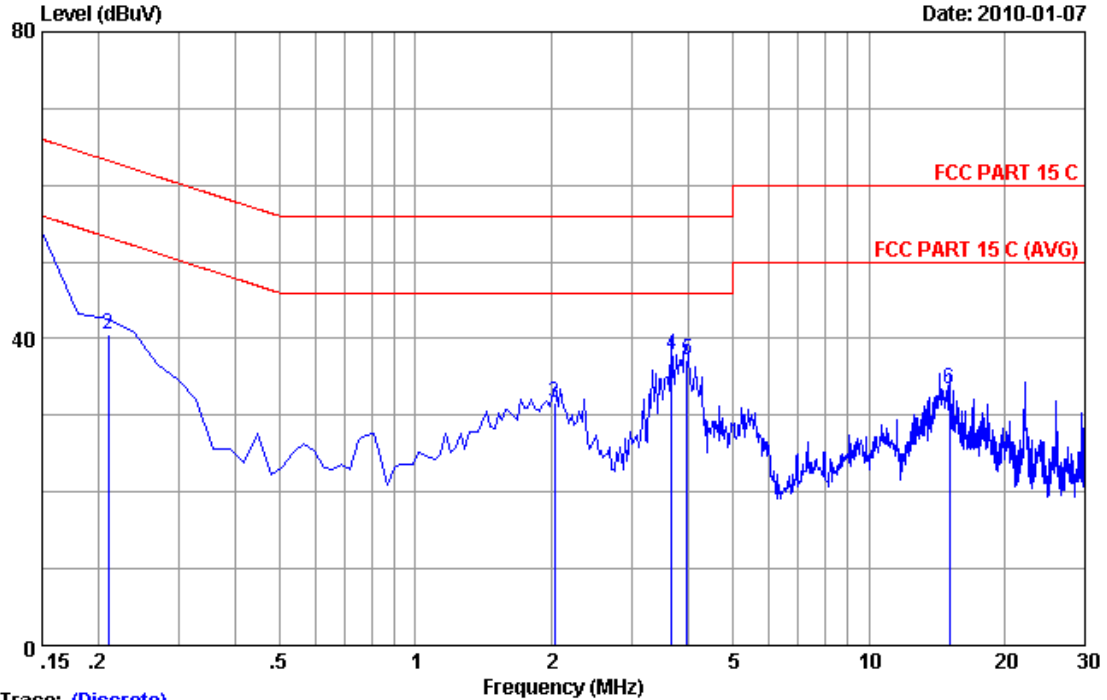
### 3.7. Power Line Conducted Emission Test Results

**PASS.** (All emissions not reported below are too low against the prescribed limits.)



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Data: 2 File: D:\DATA\2009 Report\T\TP-LINK\ACS9Q2169.EM6 (2)



Trace: (Discrete)  
 Site no :Audix No.1 Conduction Data no :2  
 Dis./Ant. \*\*: 2009 KNW407 VA  
 Limit :FCC PART 15 C  
 Env./Ins. :Temp:23'C Humi:54% Engineer :Leo-Li  
 EUT :300Mbps Wireless N Mini PCI Adapter  
 Power Rating :AC 120V/60Hz  
 Test Mode :Tx Mode  
 M/N:TL-WN861N

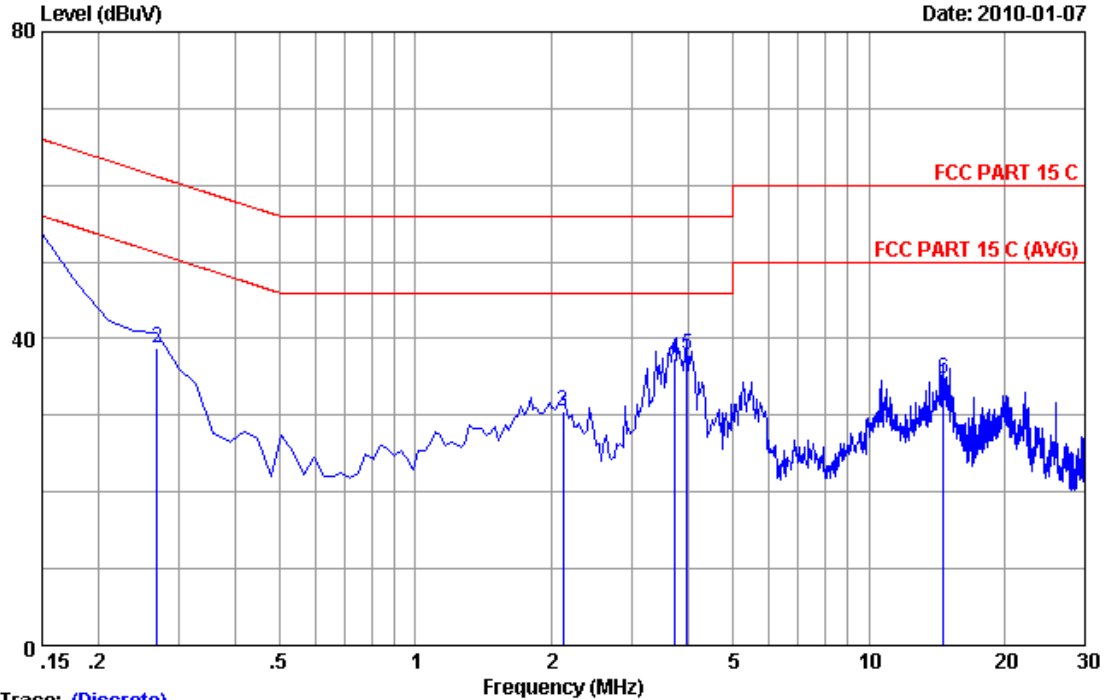
No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.47	9.88	41.51	51.86	66.00	14.14	QP
2	0.20970	0.42	9.88	30.27	40.57	63.22	22.65	QP
3	2.031	0.36	9.90	21.43	31.69	56.00	24.31	QP
4	3.672	0.37	9.91	27.51	37.79	56.00	18.21	QP
5	3.971	0.38	9.91	26.93	37.22	56.00	18.78	QP
6	15.045	0.48	9.97	23.05	33.50	60.00	26.50	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading  
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



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Postcode:518057

Data: 1 File: D:\DATA\2009 Report\T\TP-LINK\ACS9Q2169.EM6 (2)



Trace: (Discrete)  
 Site no :Audix No.1 Conduction Data no :1  
 Dis./Ant. \*\*: 2009 KNW407 VB  
 Limit :FCC PART 15 C  
 Env./Ins. :Temp:23'C Humi:54% Engineer :Leo-Li  
 EUT :300Mbps Wireless N Mini PCI Adapter  
 Power Rating :AC 120V/60Hz  
 Test Mode :Tx Mode  
 M/N:TL-WN861N

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.15000	0.49	9.88	41.33	51.70	66.00	14.30	QP
2	0.26940	0.42	9.88	28.58	38.88	61.14	22.26	QP
3	2.120	0.36	9.90	20.26	30.52	56.00	25.48	QP
4	3.732	0.37	9.91	27.10	37.38	56.00	18.62	QP
5	3.971	0.37	9.91	27.58	37.86	56.00	18.14	QP
6	14.627	0.48	9.97	24.30	34.75	60.00	25.25	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading  
 2.If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

## 4. RADIATED EMISSION TEST

### 4.1. Test Equipment

Frequency rang: 30~1000MHz

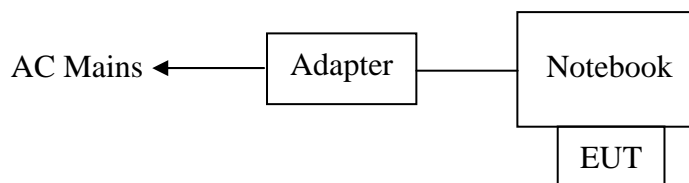
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,09	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 09	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 09	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 09	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Dec.14, 09	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 09	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 09	1 Year

Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3	Horn Antenna	EMCO	3115	9510-4580	Nov.19, 09	1.5 Year
4	Amplifier	Agilent	8449B	3008A08495	Aug.04,09	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	Nov.28, 09	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	Nov.28, 09	1 Year

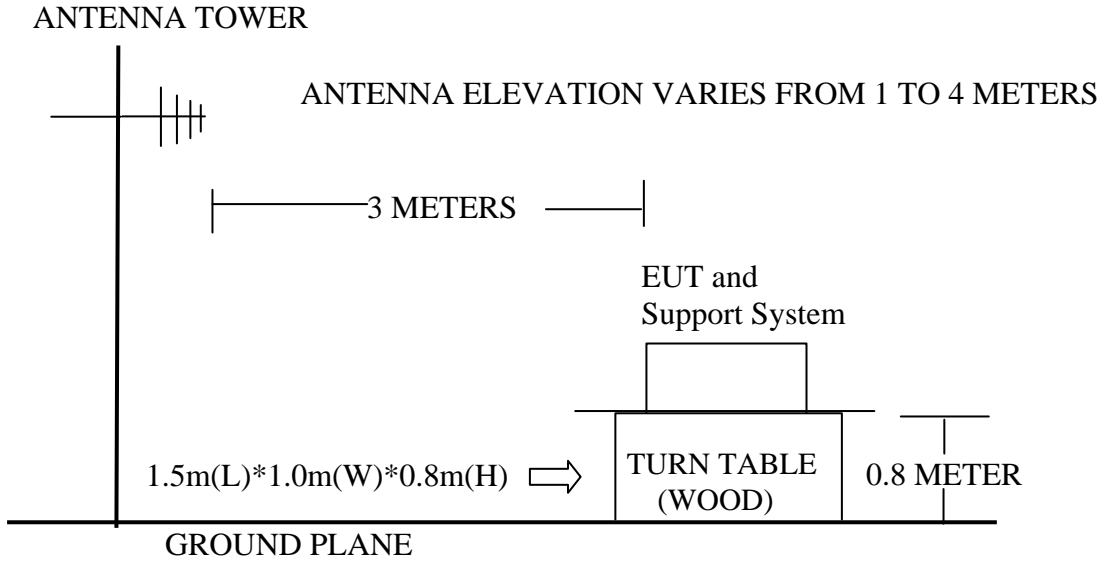
### 4.2. Block Diagram of Test Setup

Block diagram of connection between the EUT and simulators



*(EUT: 300Mbps Wireless N Mini PCI Adapter)*

4.2.1. In Anechoic Chamber



4.3. Radiated Emission Limit

4.3.1. 15.209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

- Remark :
- (1) Emission level dBμV = 20 log Emission level μV/m
  - (2) The smaller limit shall apply at the cross point between two frequency bands.
  - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.



## 4.3.2. 15.205 Restricted bands of operation

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

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

## 4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

## 4.4.1. 300Mbps Wireless N Mini PCI Adapter (EUT)

Model Number : TL-WN861N  
Serial Number : N/A

## 4.5.Operating Condition of EUT

4.5.1. Setup the EUT and simulator as shown as Section 4.2.

4.5.2. Turned on the power of all equipment.

4.5.3. Notebook run test software to control the EUT worked in test mode (Tx Mode) and measured it.

## 4.6.Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it. EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's VBW is set at 1MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

The frequency range from 30MHz to 10<sup>th</sup> harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

#### 4.7.Radiated Emission Test Results

**PASS.**

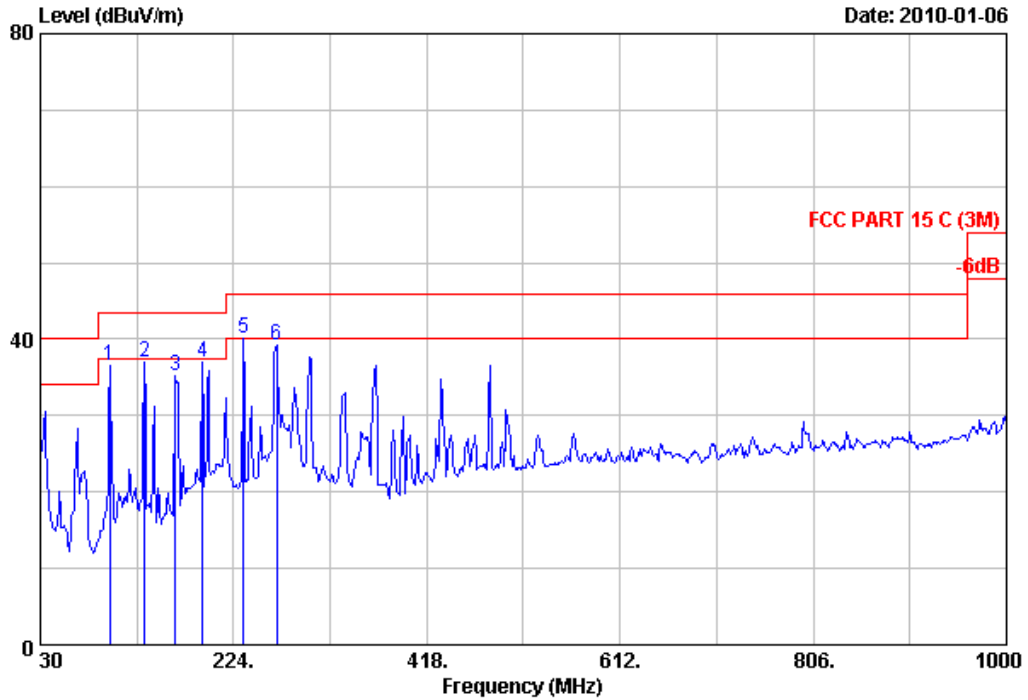
All the emissions from 30MHz to 25 GHz were comply with 15.209 limits.

Frequency: 30MHz~1GHz



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Data: 1 File: D:\2009 Report Data\TTP-LINK\ACS9Q2169.EM6 (2)



Site no. : 3m chamber Data no. : 1  
 Dis. / Ant. : 3m CBL6112D Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 24°C/56% Engineer : Sunny-lu  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power Rating : DC 3.3V From PC Input AC 120V/60Hz  
 Test Mode : Tx Mode  
 M/N : TL-WN861N

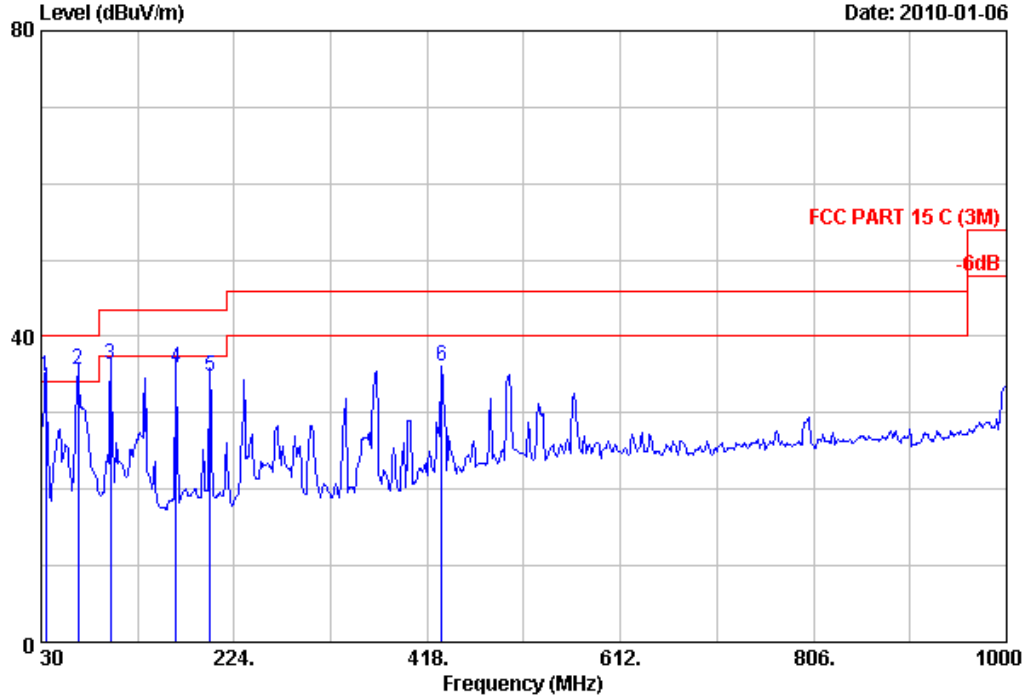
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Emission		Limits (dBuV/m)	Margin (dB)	Remark
				Reading (dBuV)	Level (dBuV/m)			
1	99.840	10.91	0.90	24.82	36.63	43.50	6.87	QP
2	134.760	11.99	1.03	23.94	36.96	43.50	6.54	QP
3	165.800	9.90	1.16	24.20	35.26	43.50	8.24	QP
4	192.960	9.01	1.28	26.72	37.01	43.50	6.49	QP
5	233.700	10.49	1.53	28.12	40.14	46.00	5.86	QP
6	267.650	13.00	1.67	24.65	39.32	46.00	6.68	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 2 File: D:\2009 Report Data\T\TP-LINK\ACS9Q2169.EM6 (2)



Site no. : 3m chamber Data no. : 2  
 Dis. / Ant. : 3m CBL6112D Ant. pol. : VERTICAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 24°C/56% Engineer : Sunny-lu  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power Rating : DC 3.3V From PC Input AC 120V/60Hz  
 Test Mode : Tx Mode  
 M/N : TL-WN861N

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Emission Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	34.850	16.64	0.55	44.52	34.79	40.00	5.21	QP
2	66.860	6.34	0.75	55.35	35.63	40.00	4.37	QP
3	99.840	10.91	0.90	51.14	36.25	43.50	7.25	QP
4	165.800	9.90	1.16	51.64	35.90	43.50	7.60	QP
5	199.750	9.53	1.30	50.80	34.78	43.50	8.72	QP
6	432.550	16.78	2.03	44.27	36.04	46.00	9.96	QP

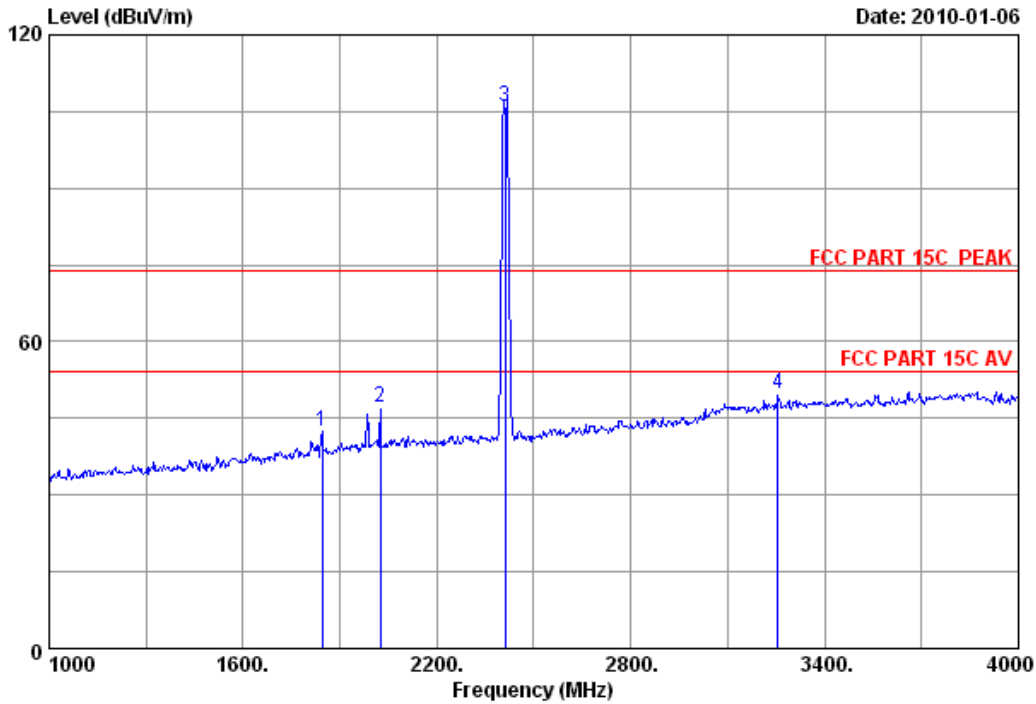
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz



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Data: 1 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 1  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.52	36.23	42.97	42.62	74.00	31.38	Peak
2	2026.000	29.21	7.80	36.12	46.40	47.29	74.00	26.71	Peak
3	2412.000	29.45	8.60	35.95	103.97	106.07	74.00	-32.07	Peak
4	3256.000	32.67	10.19	35.79	42.87	49.94	74.00	24.06	Peak

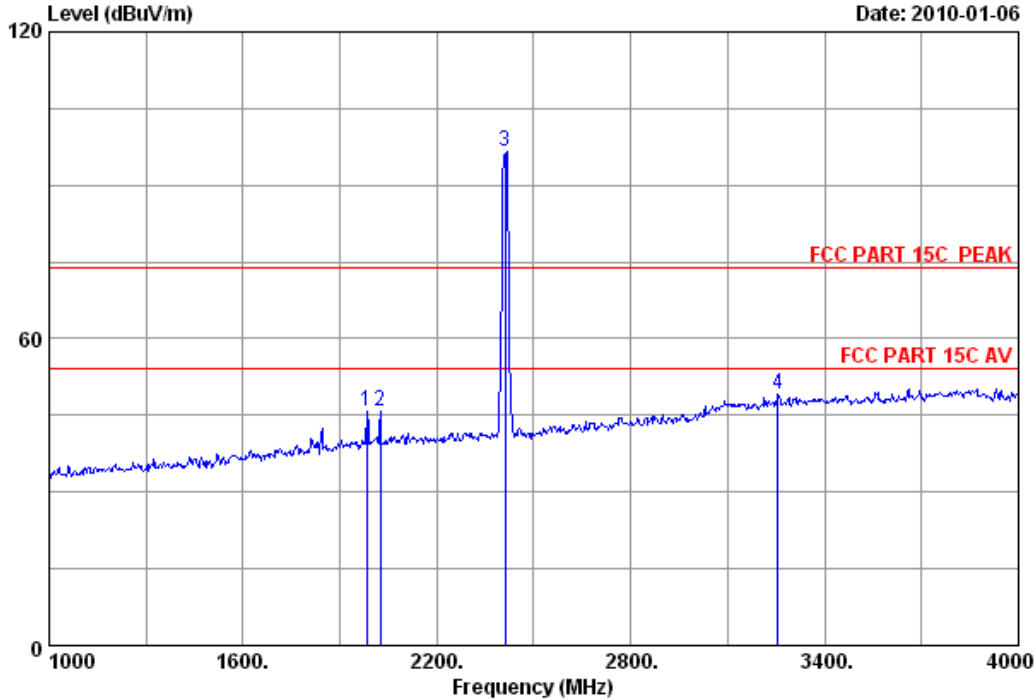
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 2 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 2  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1984.000	29.11	7.76	36.06	45.09	45.90	74.00	28.10	Peak
2	2026.000	29.21	7.80	36.12	44.88	45.77	74.00	28.23	Peak
3	2412.000	29.45	8.60	35.95	94.55	96.65	74.00	-22.65	Peak
4	3256.000	32.67	10.19	35.79	42.12	49.19	74.00	24.81	Peak

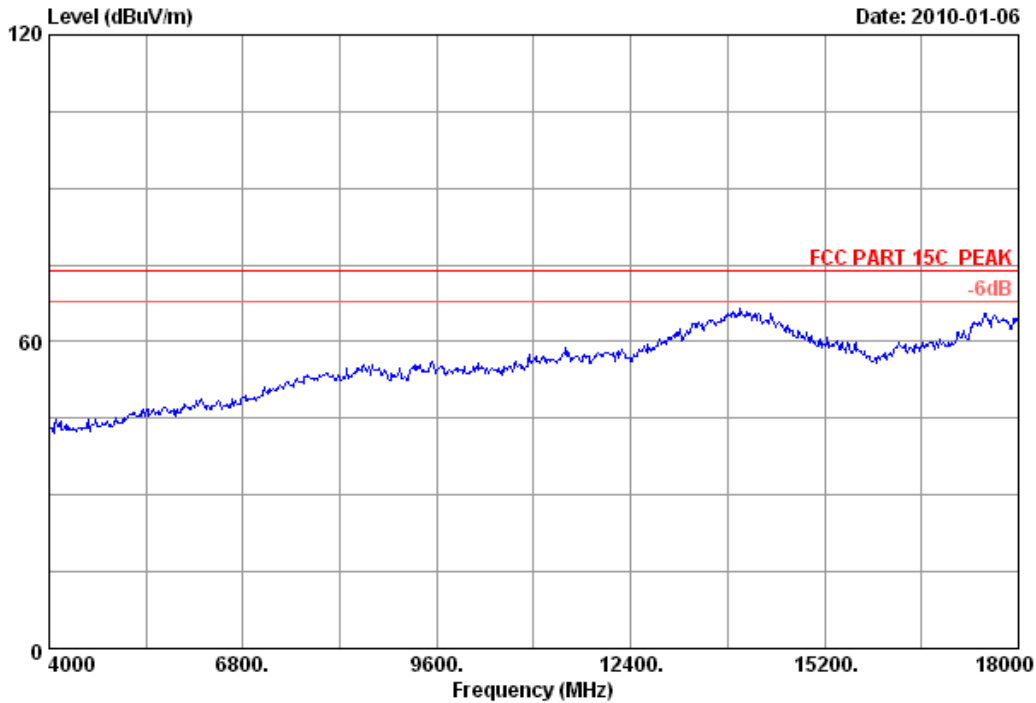
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 3 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

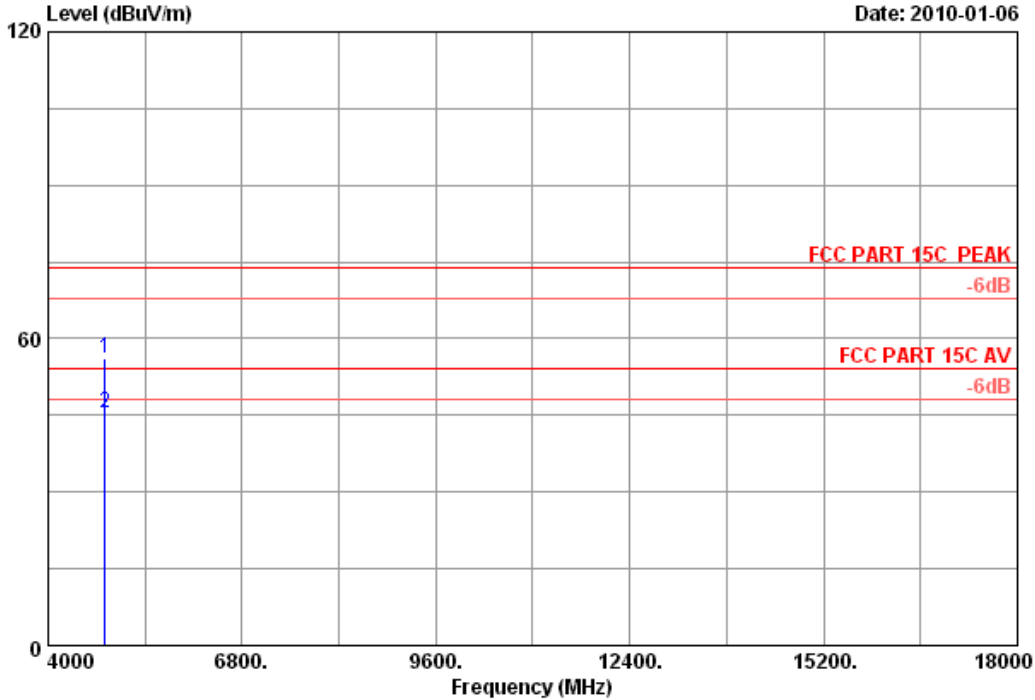


Site no.	: 3m Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11b CH1 2412MHz Tx		
	: TL-WN861N		



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Data: 4 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 4  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.58	35.25	44.53	56.18	74.00	17.82	Peak
2	4824.000	34.32	12.58	35.25	33.69	45.34	54.00	8.66	Average

Remarks:

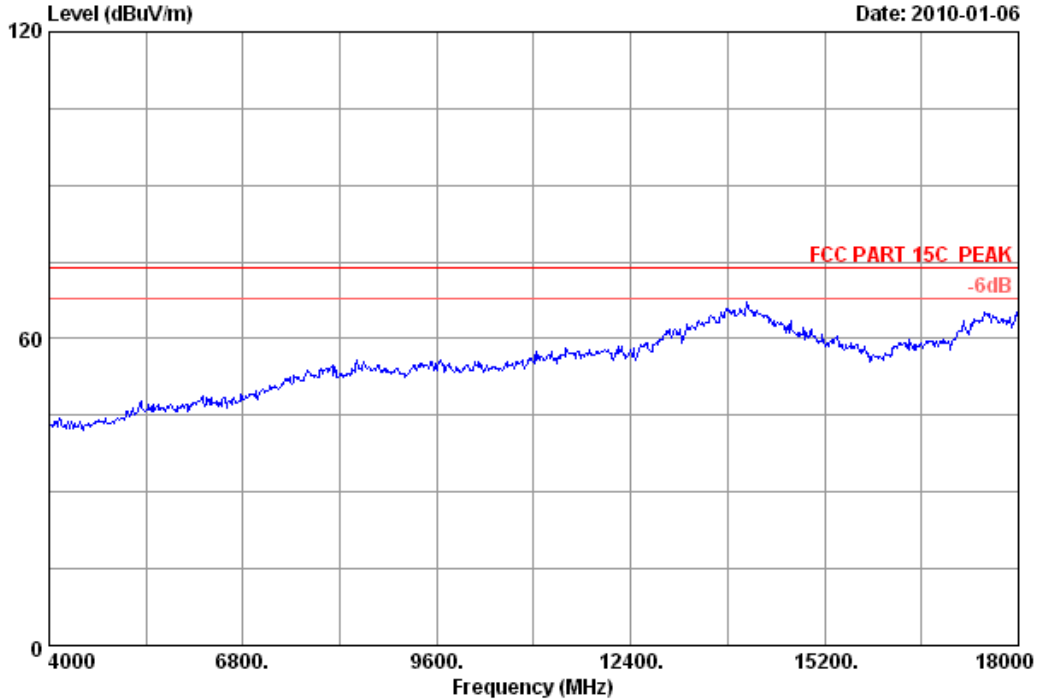
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 5 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

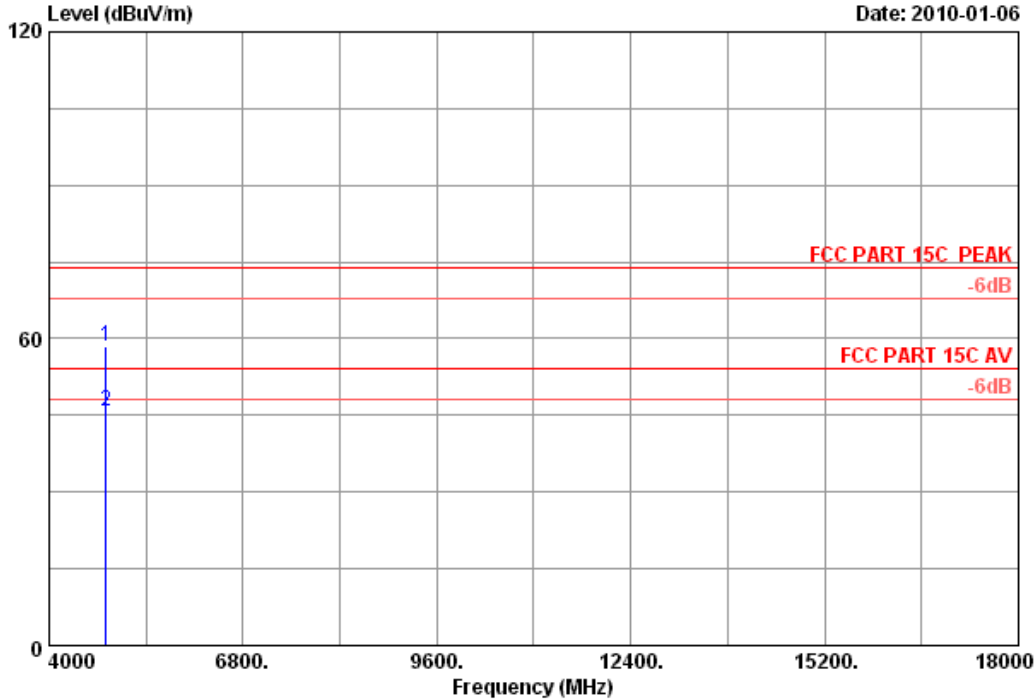


Site no.	: 3m Chamber	Data no.	: 5
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11b CH1 2412MHz Tx		
	: TL-WN861N		



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Data: 6 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 6  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.58	35.25	46.98	58.63	74.00	15.37	Peak
2	4824.000	34.32	12.58	35.25	34.21	45.86	54.00	8.14	Average

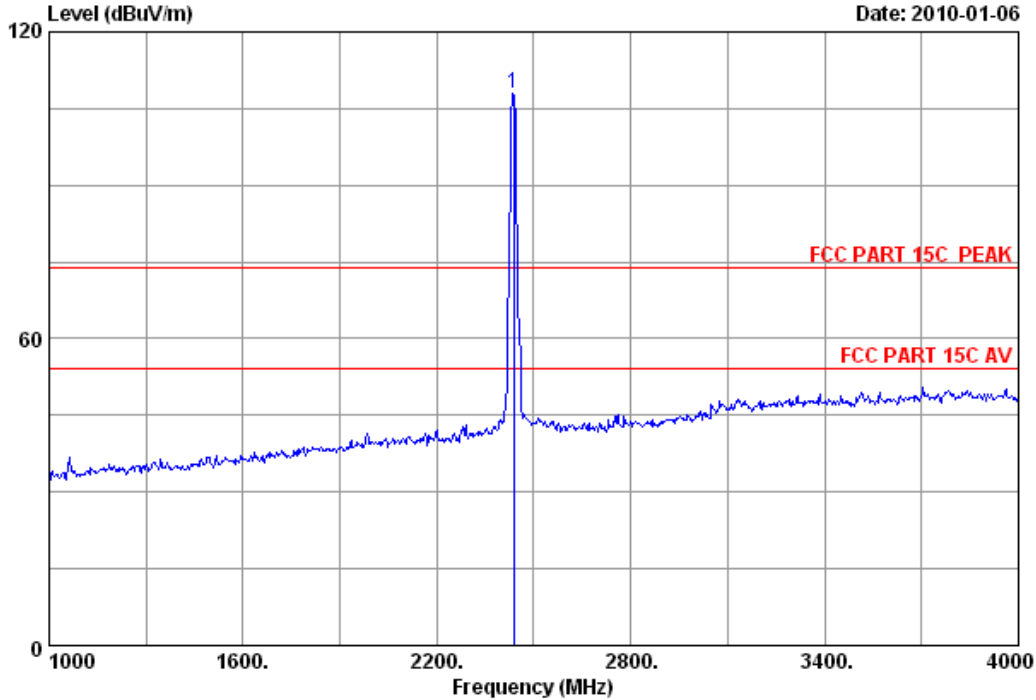
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 7 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 7  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission			Remark
						Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	
1	2437.000	29.47	8.60	36.06	106.05	108.06	74.00	-34.06	Peak

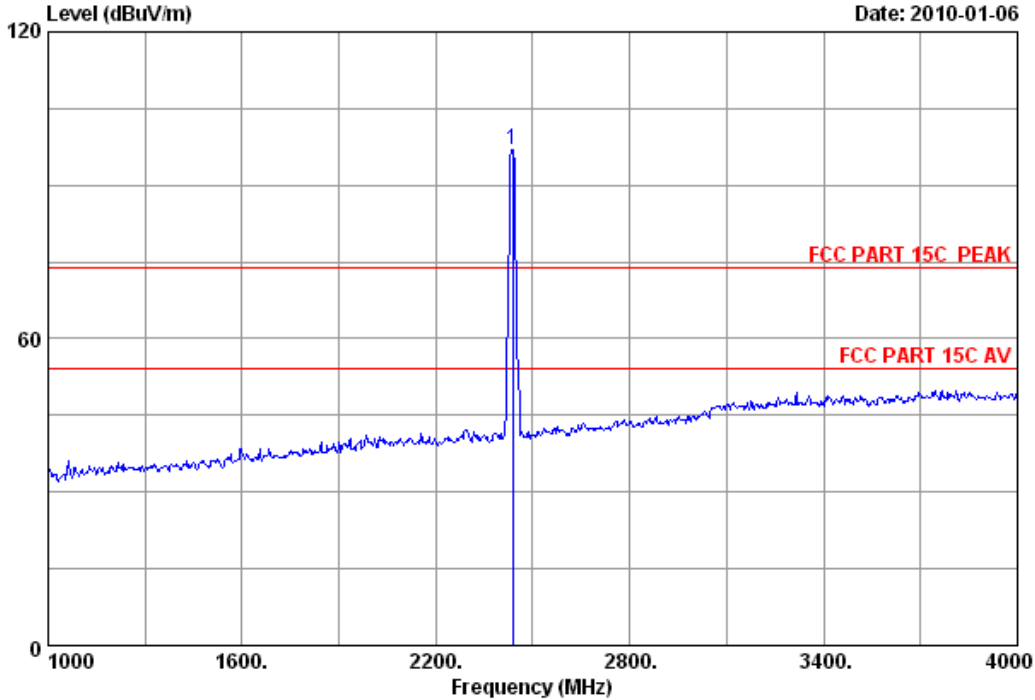
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 8 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 8  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2437.000	29.47	8.60	36.06	95.01	97.02	74.00	-23.02	Peak

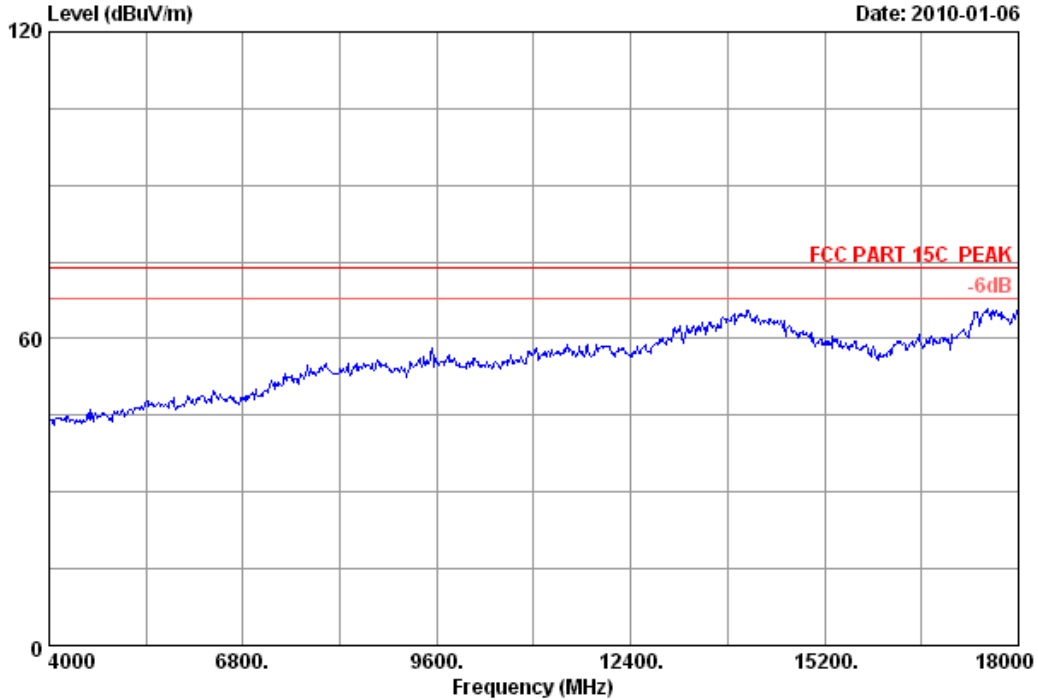
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 9 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

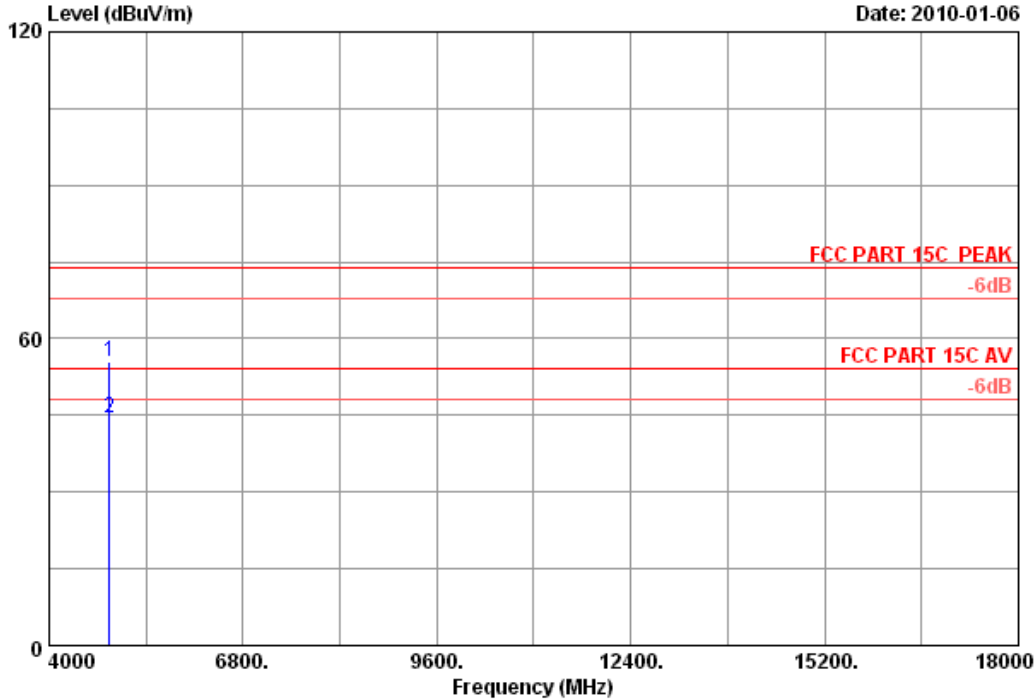


Site no.	: 3m Chamber	Data no.	: 9
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11b CH6 2437MHz Tx		
	: TL-WN861N		



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Data: 10 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 10  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	44.37	55.65	74.00	18.35	Peak
2	4874.000	34.41	12.23	35.36	33.01	44.29	54.00	9.71	Average

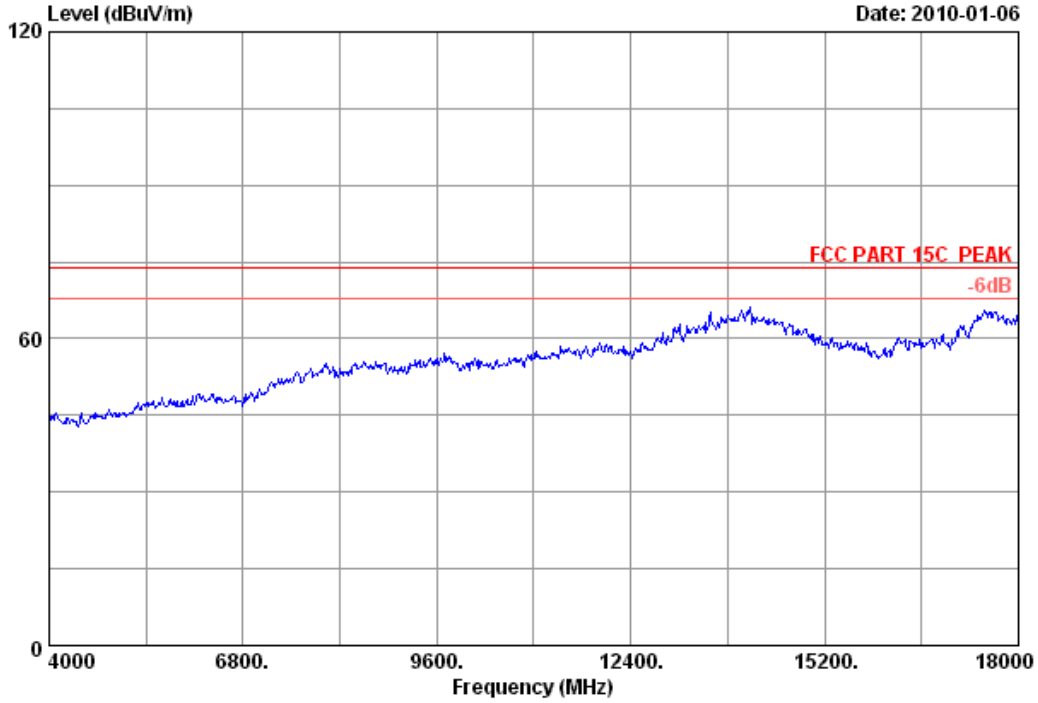
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 11 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

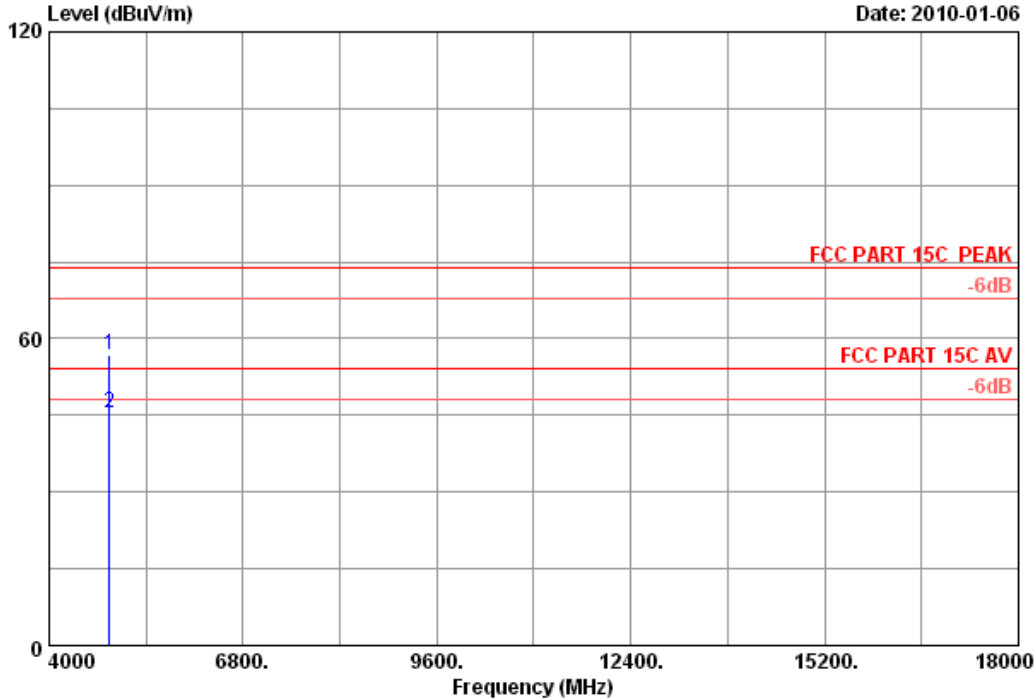


Site no.	: 3m Chamber	Data no.	: 11
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11b CH6 2437MHz Tx		
	: TL-WN861N		



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Data: 12 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 12  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	45.68	56.96	74.00	17.04	Peak
2	4874.000	34.41	12.23	35.36	34.27	45.55	54.00	8.45	Average

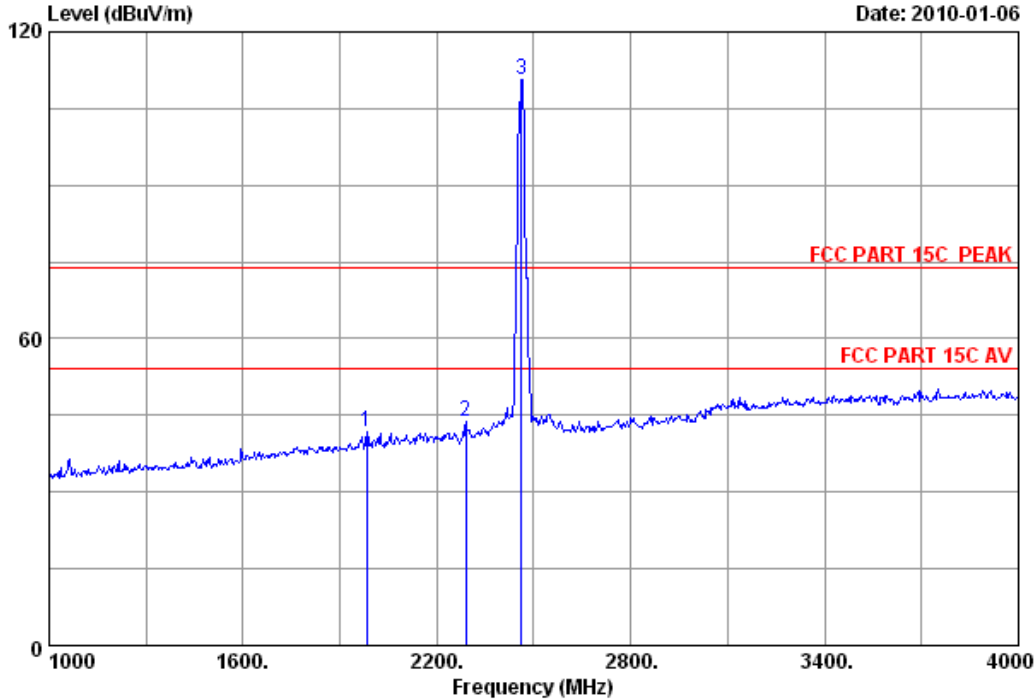
Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.





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Data: 13 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 13  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1984.000	29.11	7.76	36.06	41.02	41.83	74.00	32.17	Peak
2	2290.000	29.38	8.72	35.92	41.54	43.72	74.00	30.28	Peak
3	2462.000	29.48	8.76	36.02	108.48	110.70	74.00	-36.70	Peak

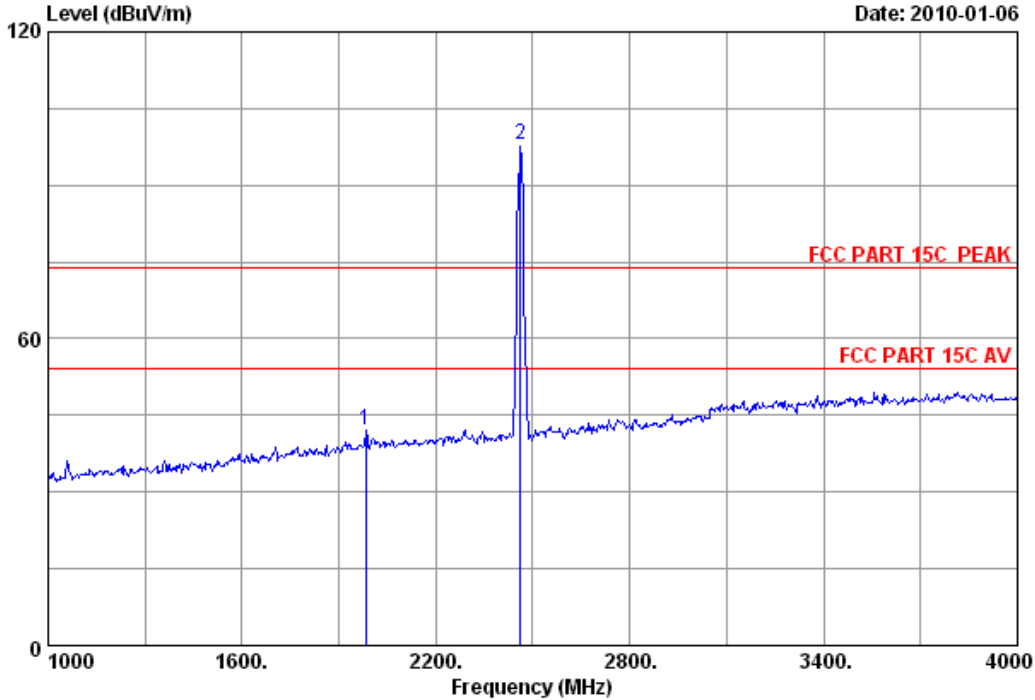
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 14 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 14  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1984.000	29.11	7.76	36.06	41.40	42.21	74.00	31.79	Peak
2	2462.000	29.48	8.76	36.02	95.63	97.85	74.00	-23.85	Peak

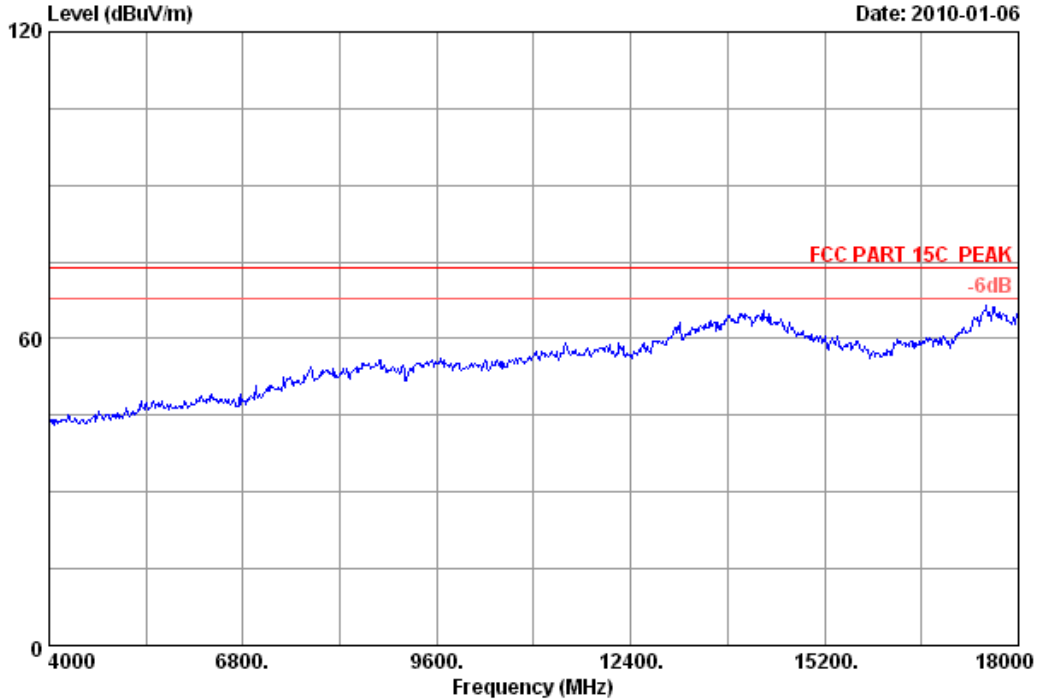
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 15 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

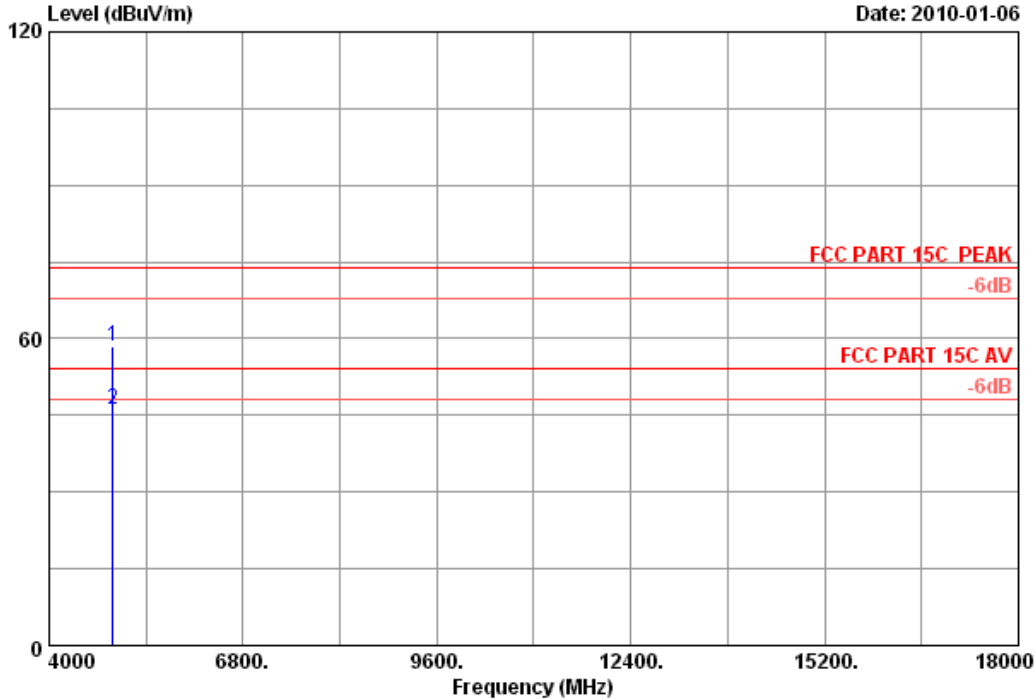


Site no. : 3m Chamber Data no. : 15  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N



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Data: 16 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 16  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

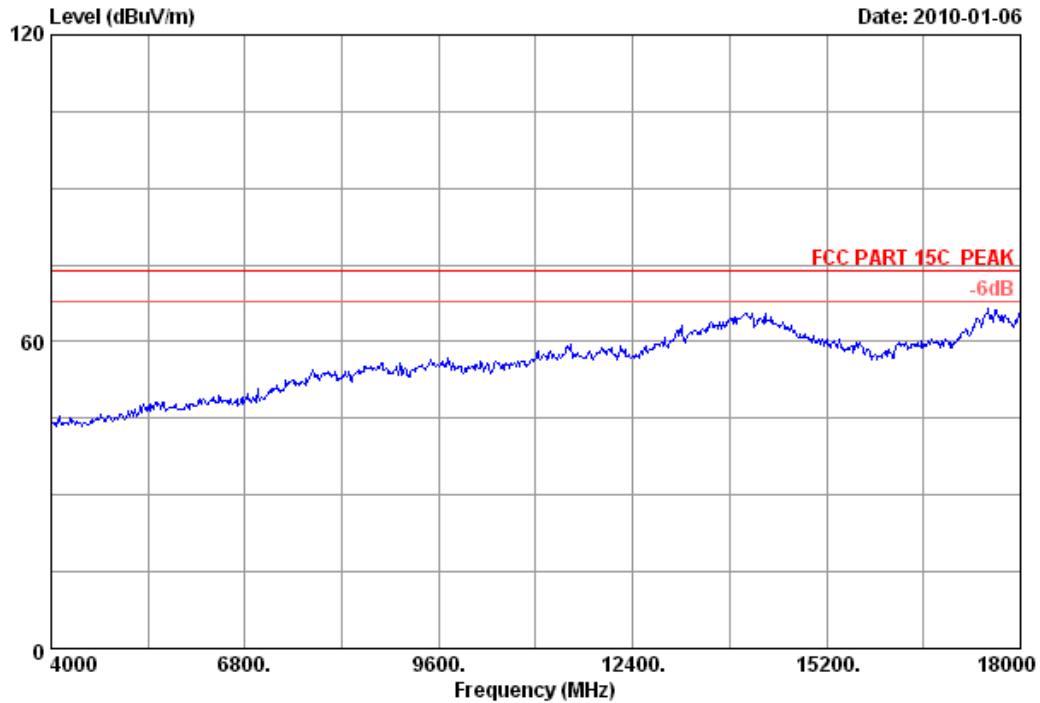
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.58	35.34	46.69	58.42	74.00	15.58	Peak
2	4924.000	34.49	12.58	35.34	34.24	45.97	54.00	8.03	Average

Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 17 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

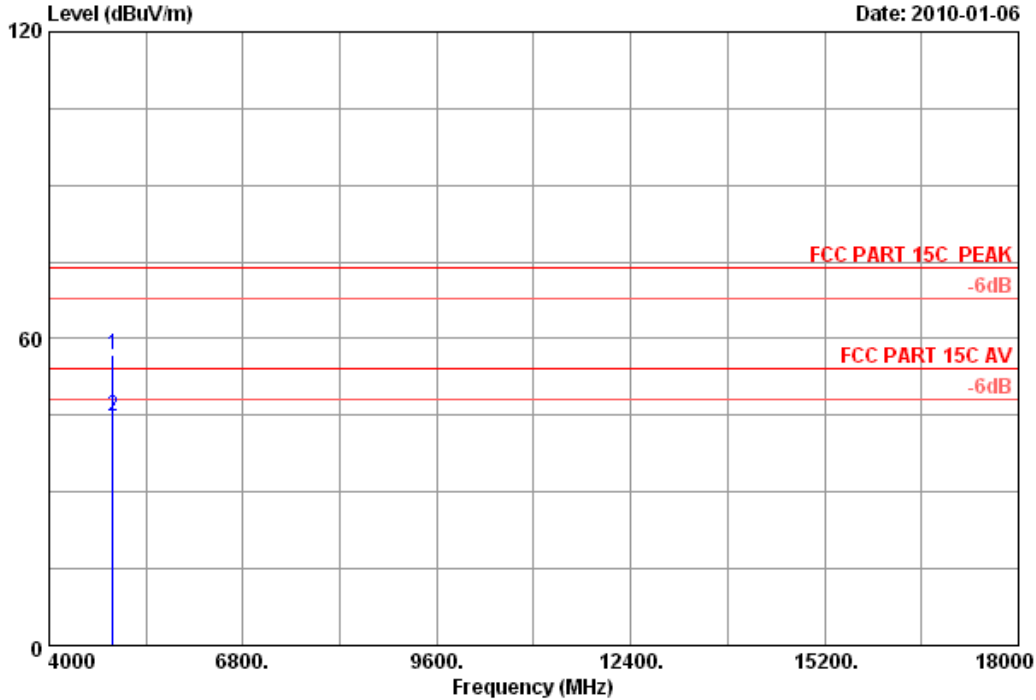


Site no.	: 3m Chamber	Data no.	: 17
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11b CH11 2462MHz Tx		
	: TL-WN861N		



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Data: 18 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 18  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

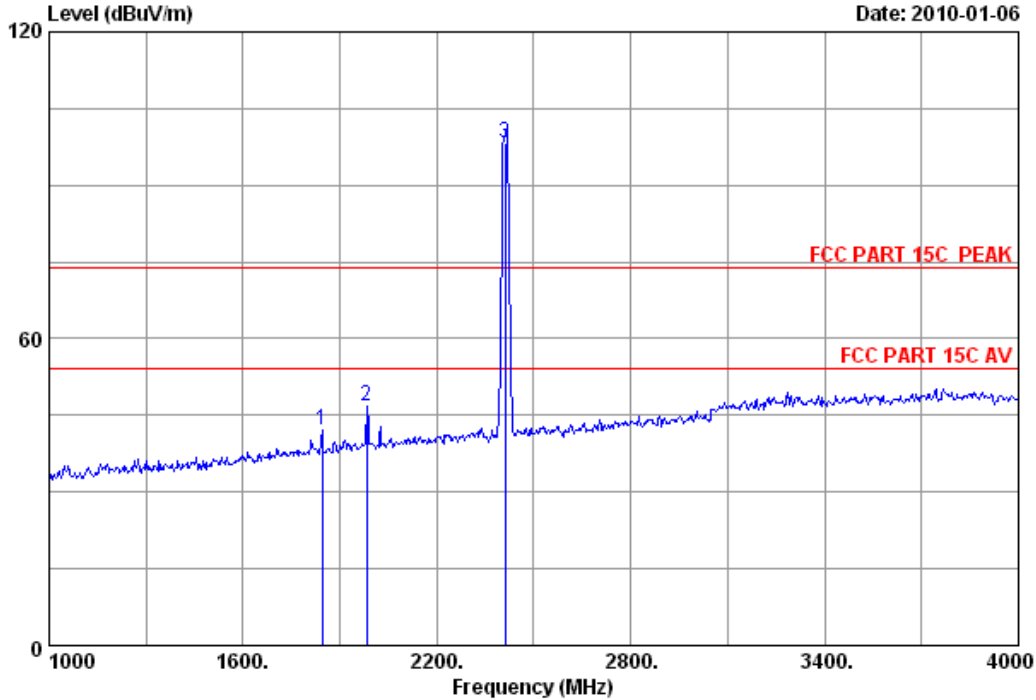
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.58	35.34	45.24	56.97	74.00	17.03	Peak
2	4924.000	34.49	12.58	35.34	33.15	44.88	54.00	9.12	Average

Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 19 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 19  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.52	36.23	42.43	42.08	74.00	31.92	Peak
2	1984.000	29.11	7.76	36.06	45.91	46.72	74.00	27.28	Peak
3	2412.000	29.45	8.60	35.95	96.30	98.40	74.00	-24.40	Peak

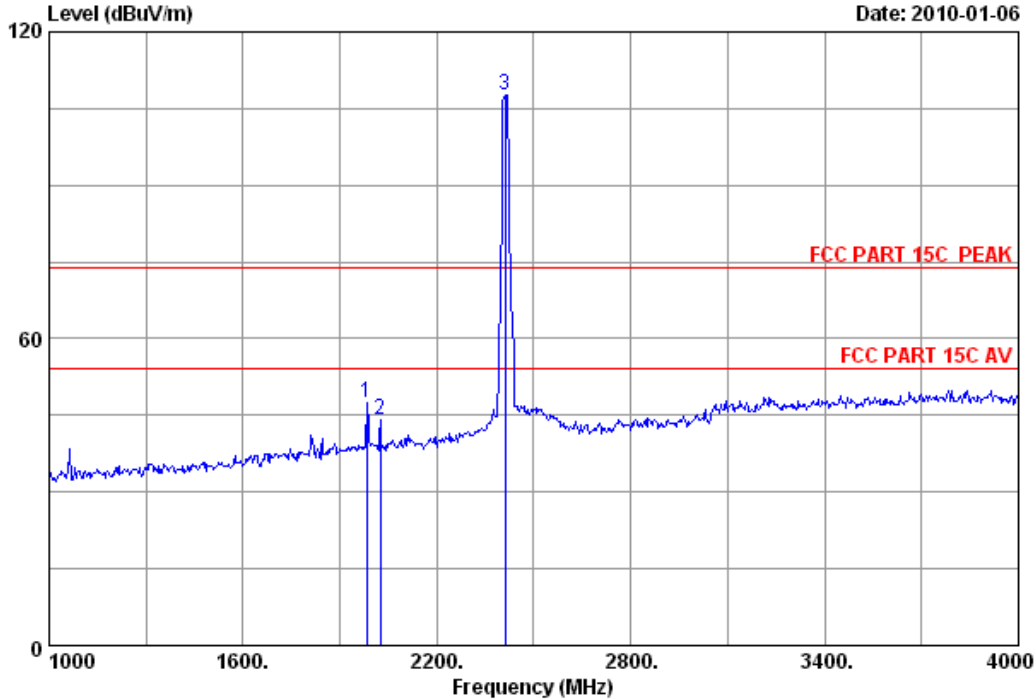
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 20 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 20  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1984.000	29.11	7.76	36.06	46.64	47.45	74.00	26.55	Peak
2	2026.000	29.21	7.80	36.12	43.31	44.20	74.00	29.80	Peak
3	2412.000	29.45	8.60	35.95	105.51	107.61	74.00	-33.61	Peak

Remarks:

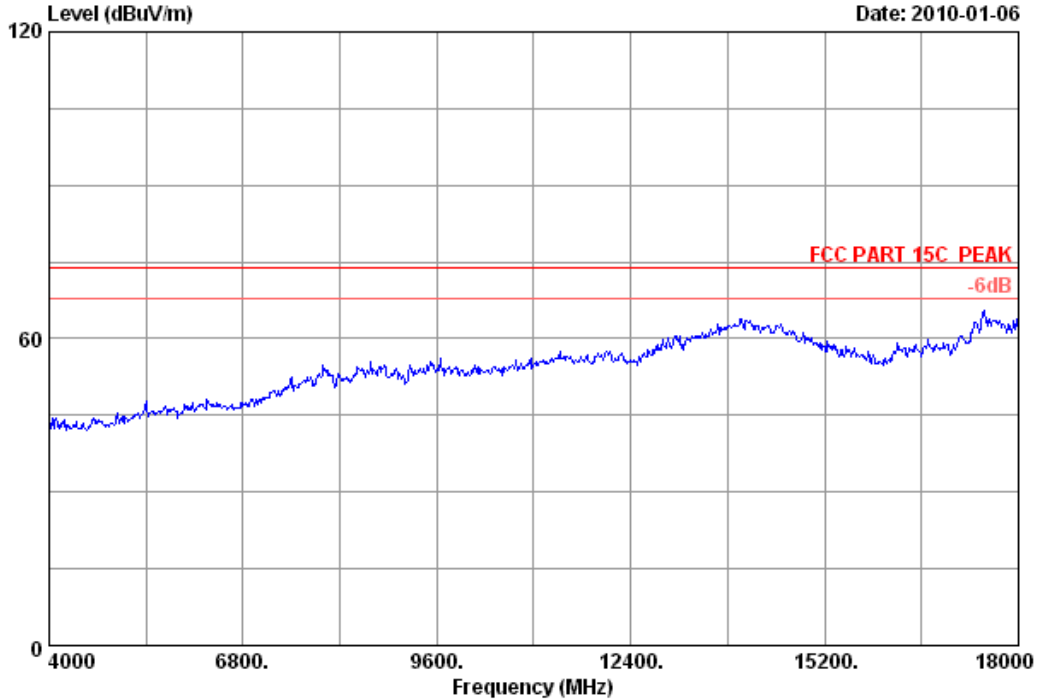
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 21 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

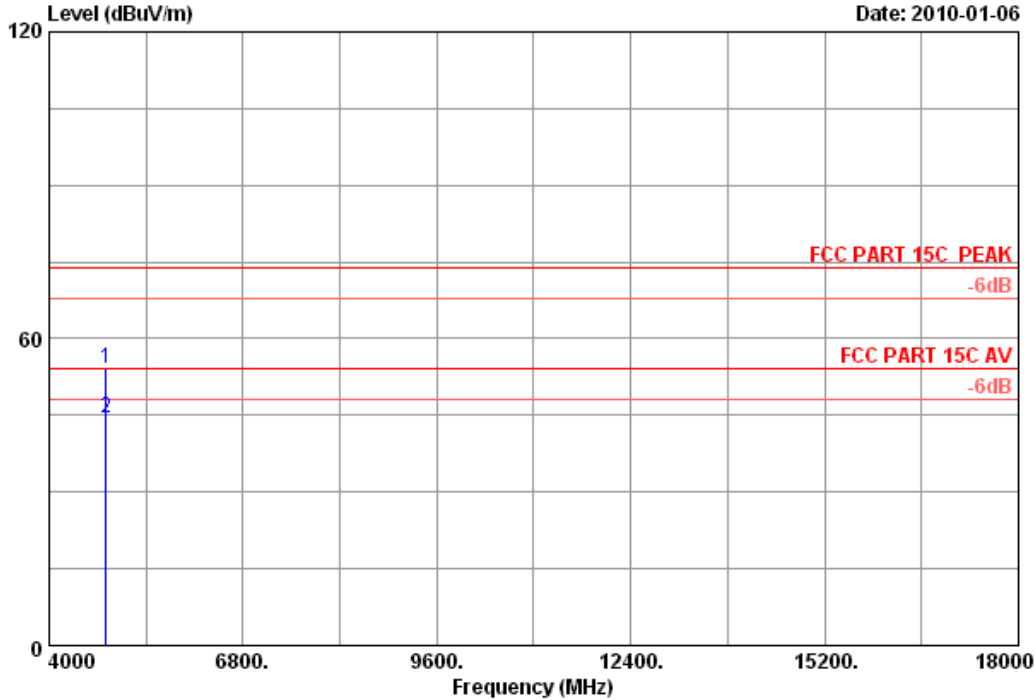


Site no.	: 3m Chamber	Data no.	: 21
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11g CH1 2412MHz Tx		
	: TL-WN861N		



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Data: 22 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 22  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.58	35.25	42.39	54.04	74.00	19.96	Peak
2	4824.000	34.32	12.58	35.25	32.85	44.50	54.00	9.50	Average

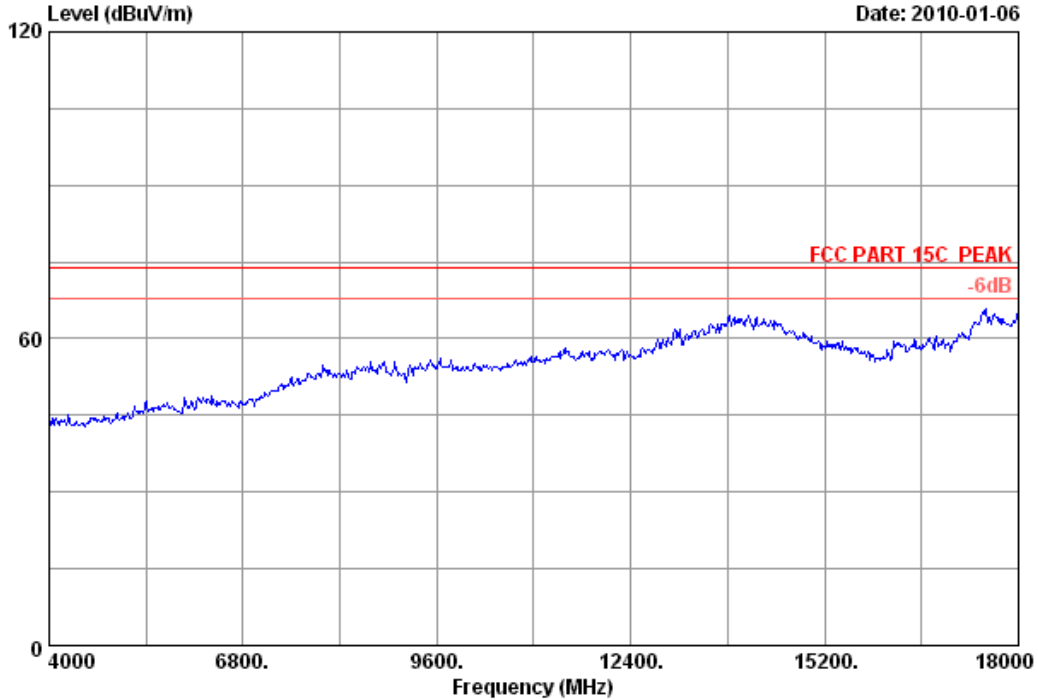
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 23 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)

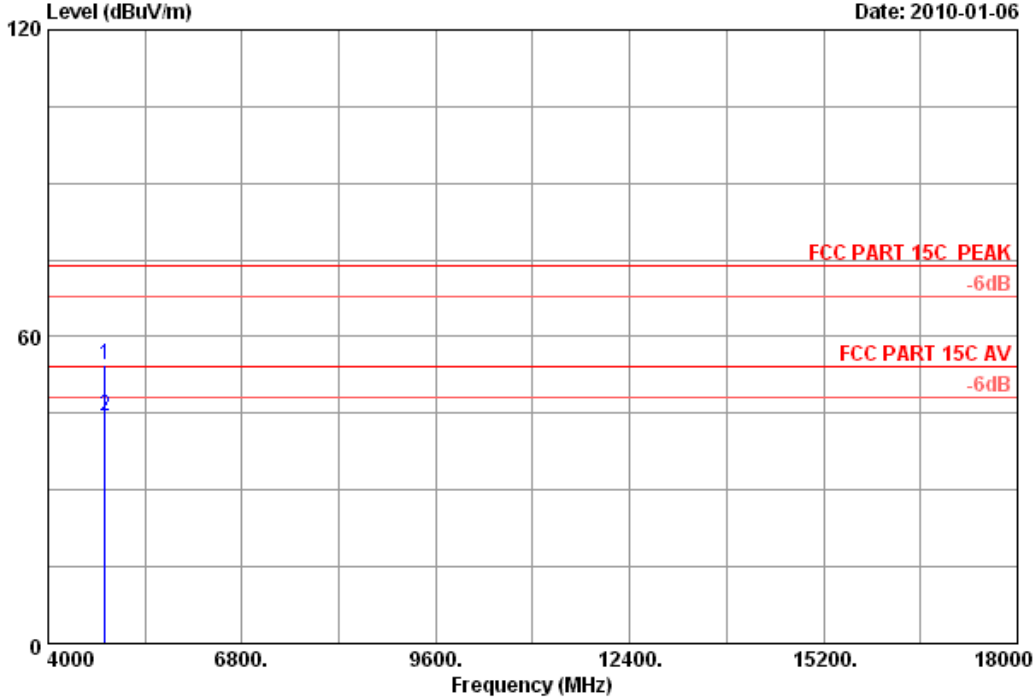


Site no.	: 3m Chamber	Data no.	: 23
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11g CH1 2412MHz Tx		
	: TL-WN861N		



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Site no. : 3m Chamber Data no. : 24  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

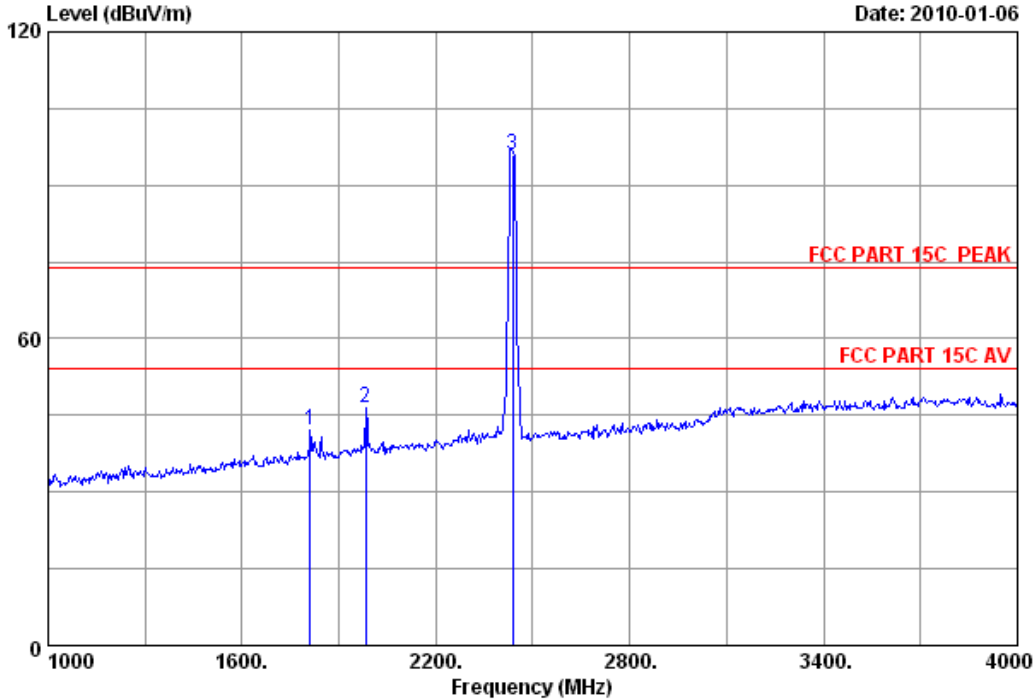
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.58	35.25	42.75	54.40	74.00	19.60	Peak
2	4824.000	34.32	12.58	35.25	32.73	44.38	54.00	9.62	Average

Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 25 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 25  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1810.000	28.17	7.46	36.34	42.71	42.00	74.00	32.00	Peak
2	1984.000	29.11	7.76	36.06	45.59	46.40	74.00	27.60	Peak
3	2437.000	29.47	8.60	36.06	94.07	96.08	74.00	-22.08	Peak

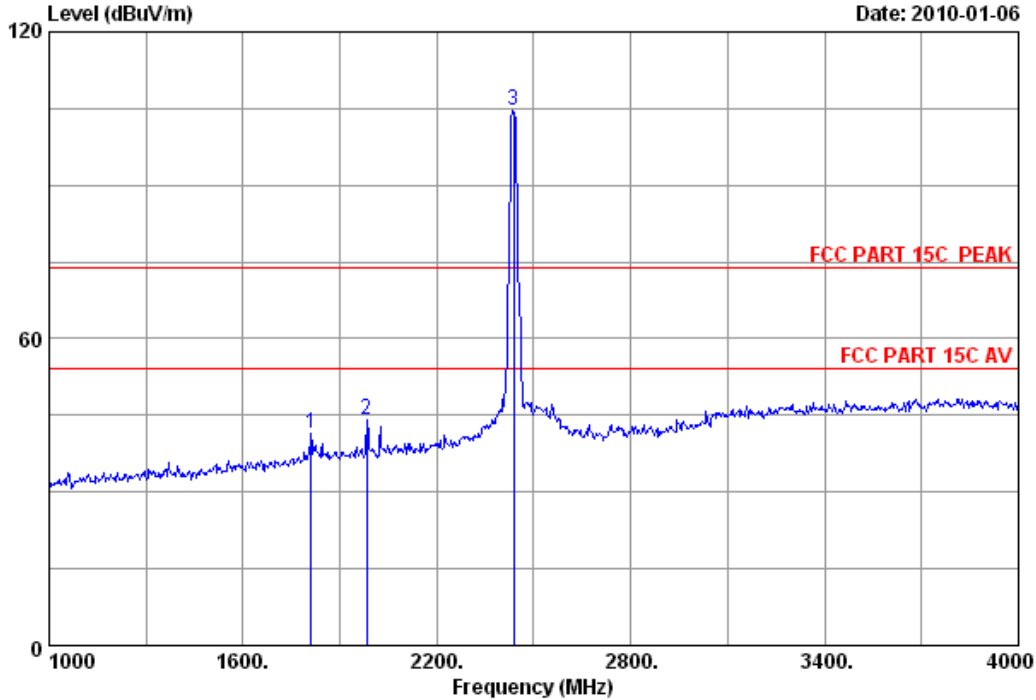
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 26 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 26  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1810.000	28.17	7.46	36.34	42.12	41.41	74.00	32.59	Peak
2	1984.000	29.11	7.76	36.06	43.42	44.23	74.00	29.77	Peak
3	2437.000	29.47	8.60	36.06	102.50	104.51	74.00	-30.51	Peak

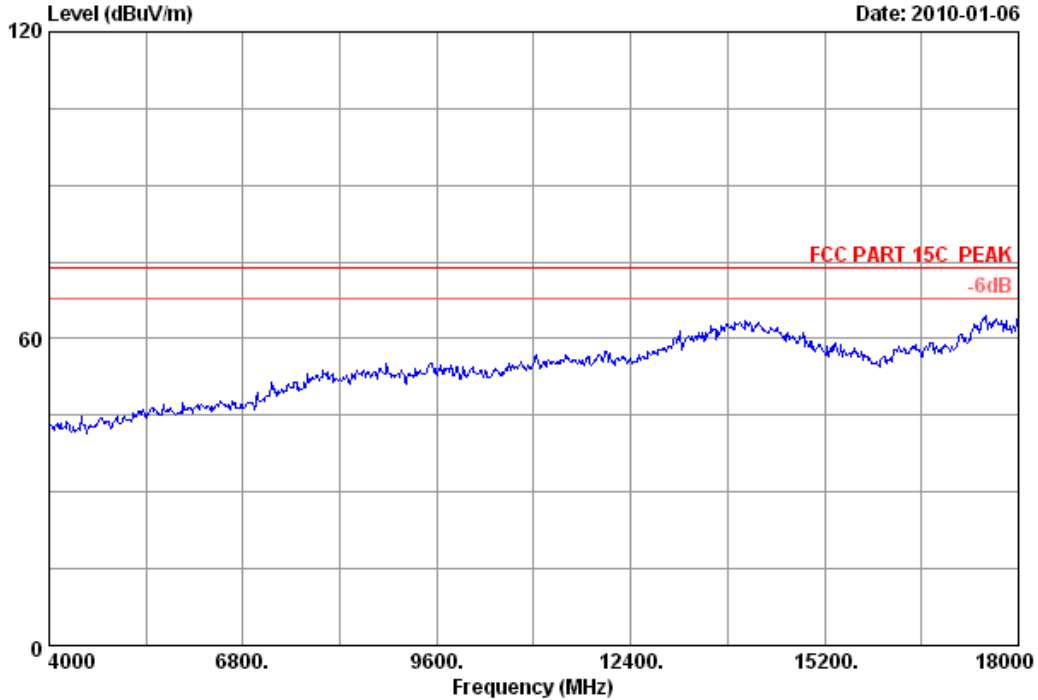
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 27 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

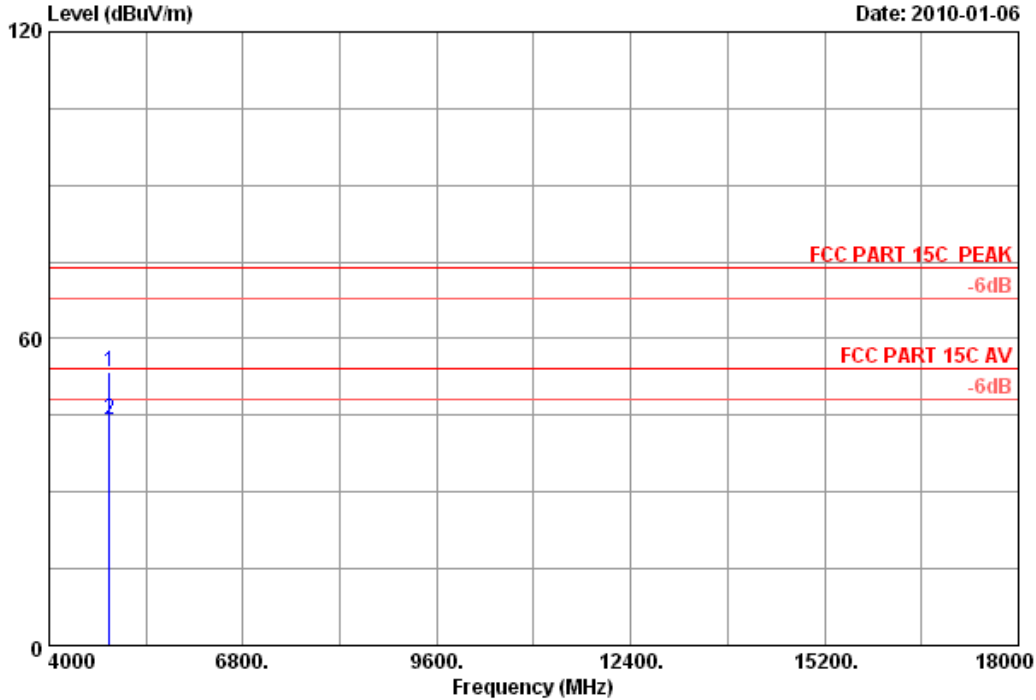


Site no.	: 3m Chamber	Data no.	: 27
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11g CH6 2437MHz Tx		
	: TL-WN861N		



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Data: 28 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 28  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	42.18	53.46	74.00	20.54	Peak
2	4874.000	34.41	12.23	35.36	32.84	44.12	54.00	9.88	Average

Remarks:

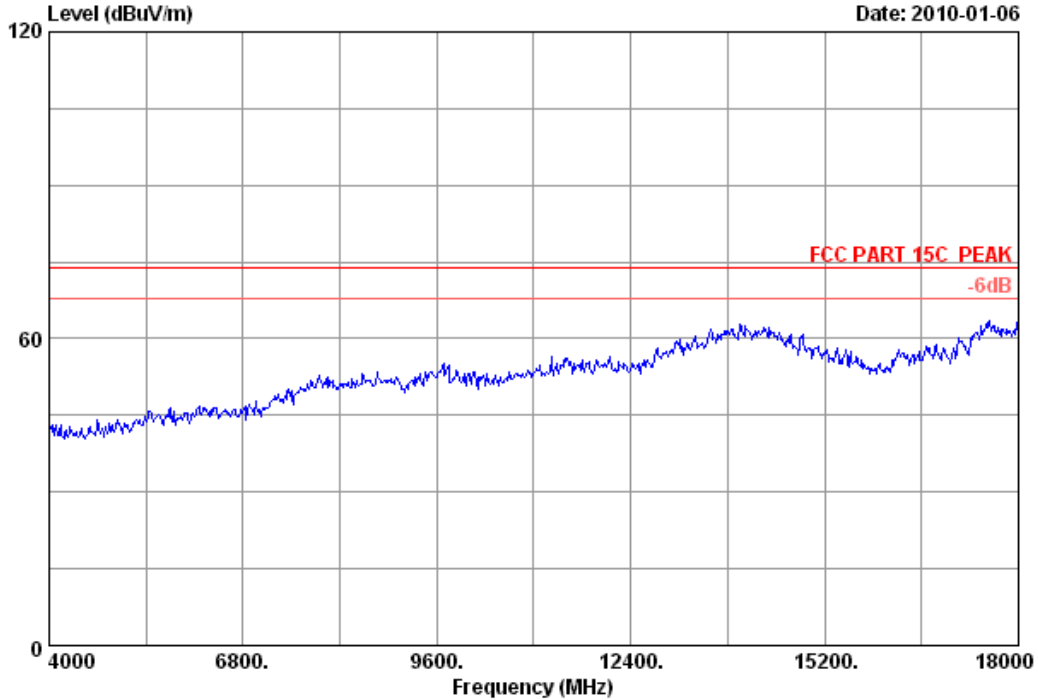
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 29 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

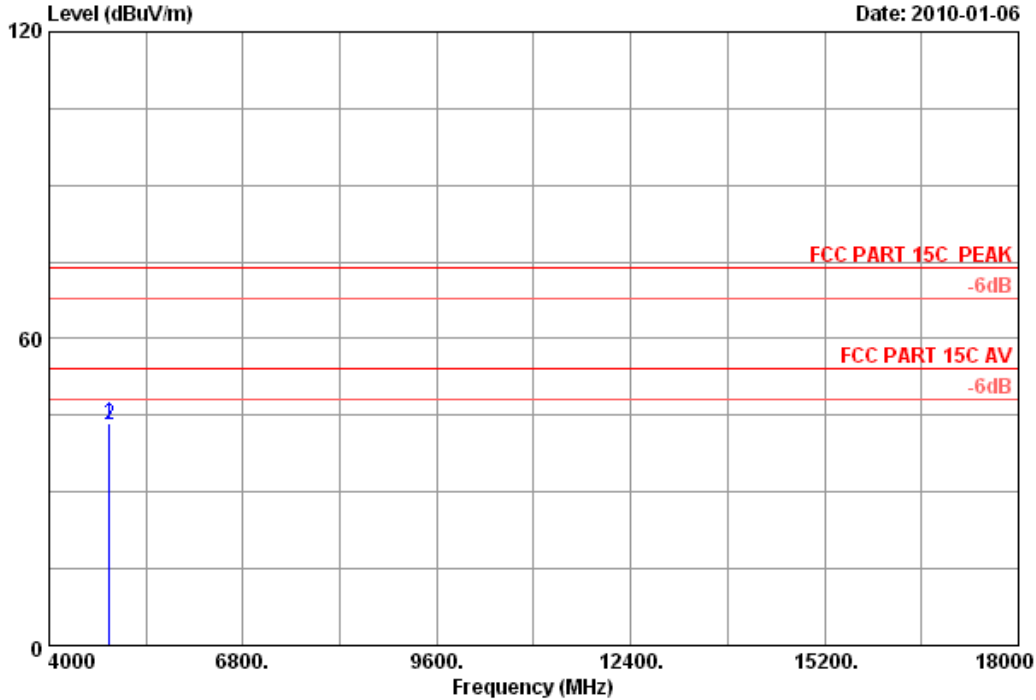


Site no.	: 3m Chamber	Data no.	: 29
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11g CH6 2437MHz Tx		
	: TL-WN861N		



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Data: 30 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 30  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	32.18	43.46	74.00	30.54	Peak
2	4874.000	34.41	12.23	35.36	31.85	43.13	54.00	10.87	Average

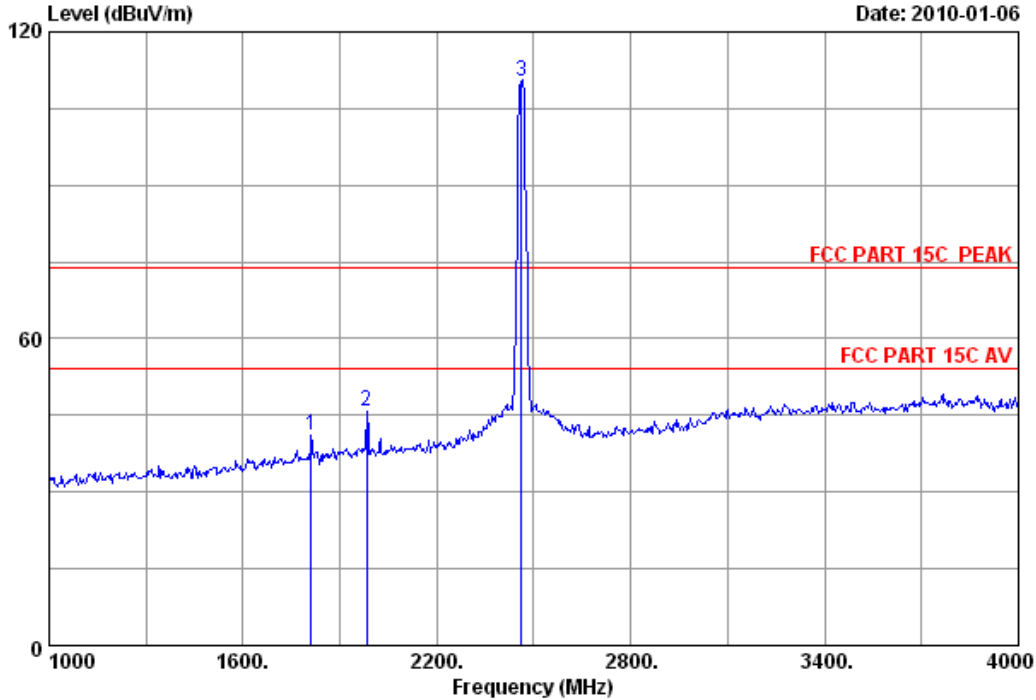
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 31 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 31  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1810.000	28.17	7.46	36.34	41.90	41.19	74.00	32.81	Peak
2	1984.000	29.11	7.76	36.06	44.83	45.64	74.00	28.36	Peak
3	2462.000	29.48	8.76	36.02	107.95	110.17	74.00	-36.17	Peak

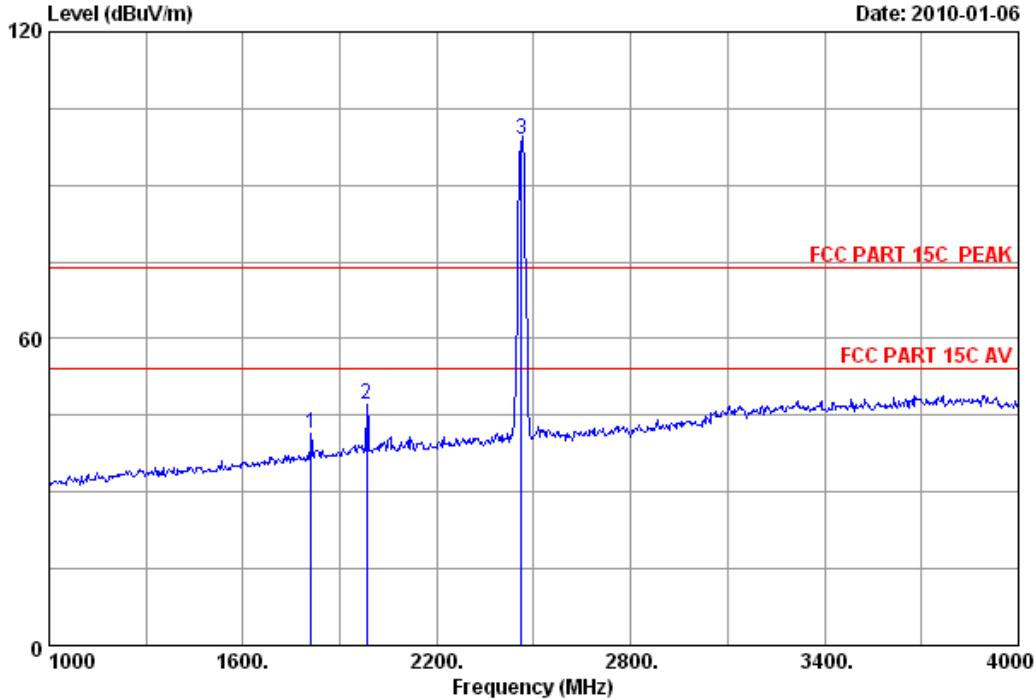
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 32  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1810.000	28.17	7.46	36.34	42.21	41.50	74.00	32.50	Peak
2	1984.000	29.11	7.76	36.06	46.42	47.23	74.00	26.77	Peak
3	2462.000	29.48	8.76	36.02	96.83	99.05	74.00	-25.05	Peak

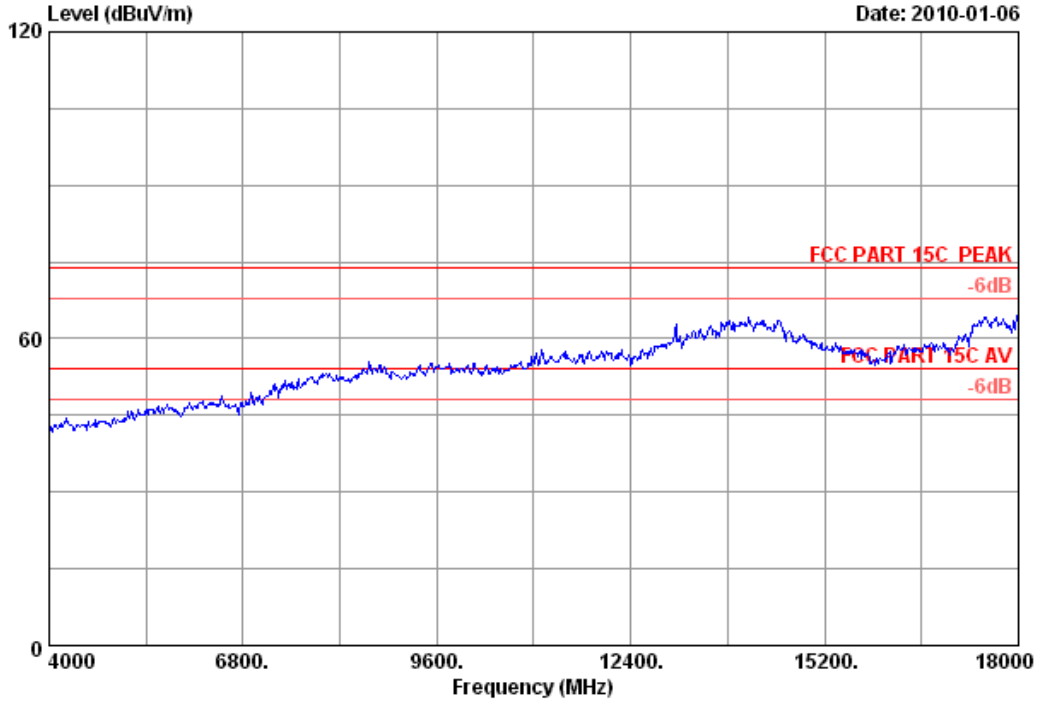
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 33 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

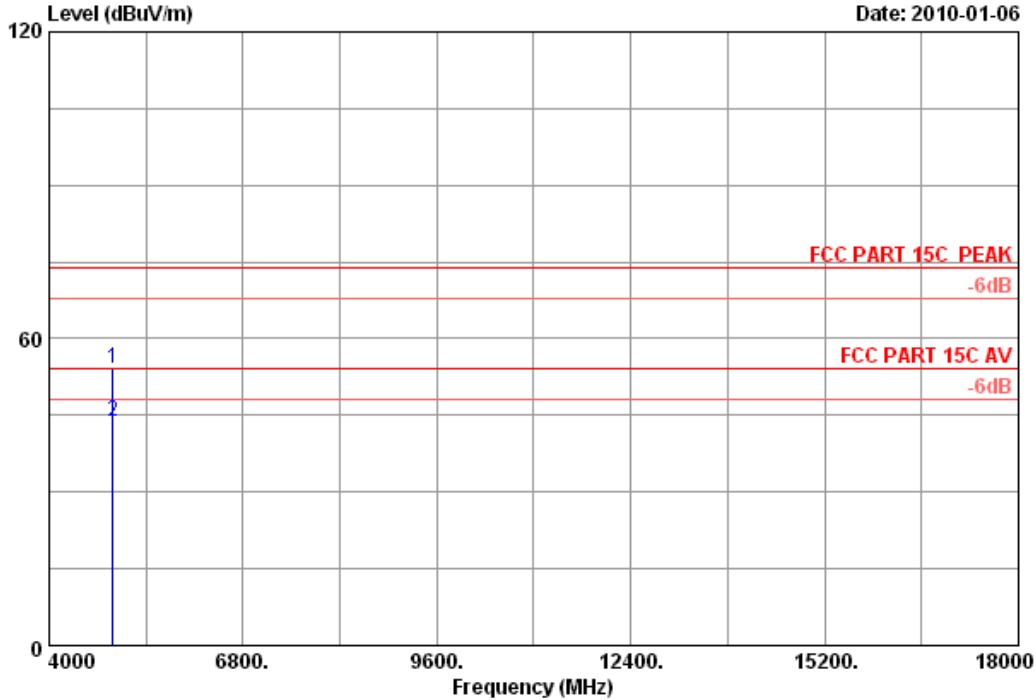


Site no.	: 3m Chamber	Data no.	: 33
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11g CH11 2462MHz Tx		
	: TL-WN861N		



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Data: 34 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 34  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

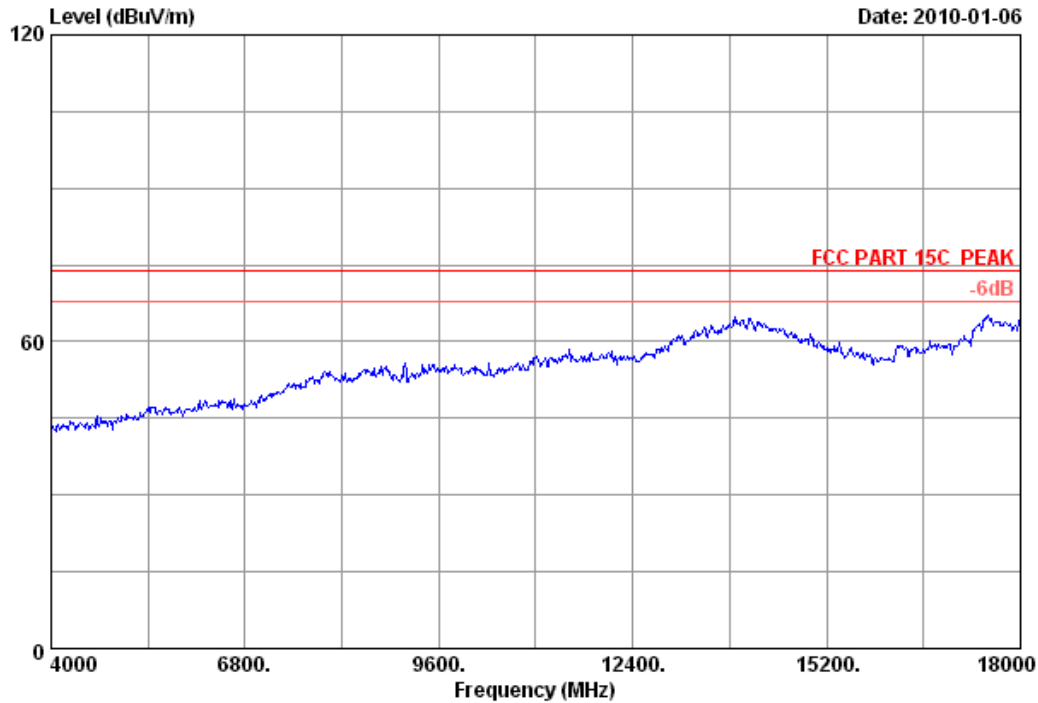
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.58	35.34	42.47	54.20	74.00	19.80	Peak
2	4924.000	34.49	12.58	35.34	32.15	43.88	54.00	10.12	Average

- Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
  2. The emission levels that are 20dB below the official limit are not reported.



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Data: 35 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

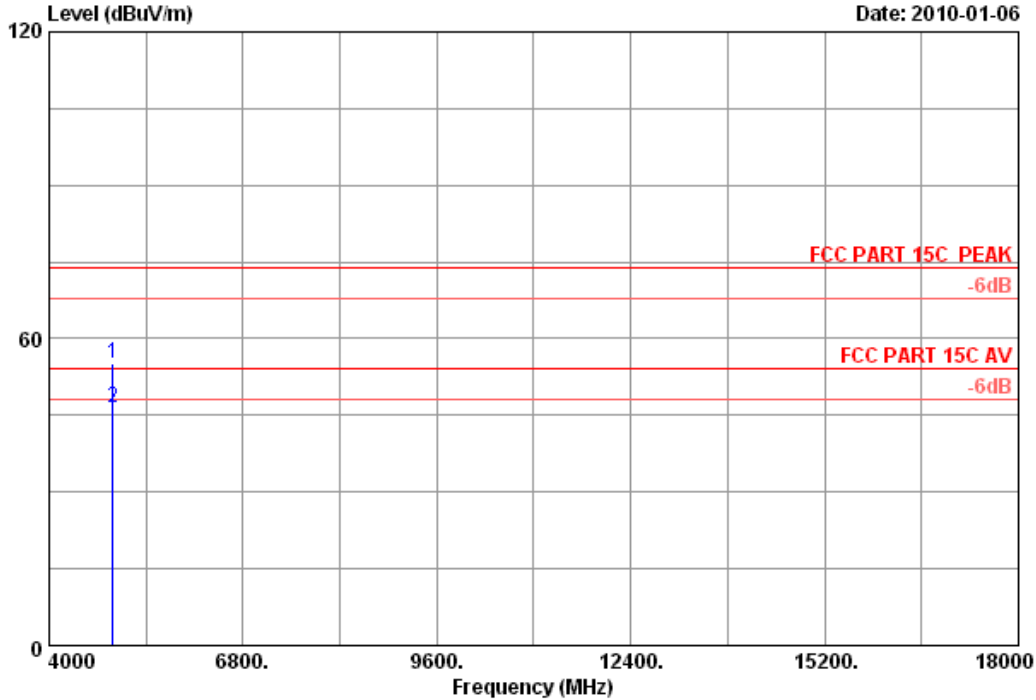


Site no.	: 3m Chamber	Data no.	: 35
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11g CH11 2462MHz Tx		
	: TL-WN861N		



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Data: 36 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 36  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.58	35.34	43.58	55.31	74.00	18.69	Peak
2	4924.000	34.49	12.58	35.34	34.81	46.54	54.00	7.46	Average

Remarks:

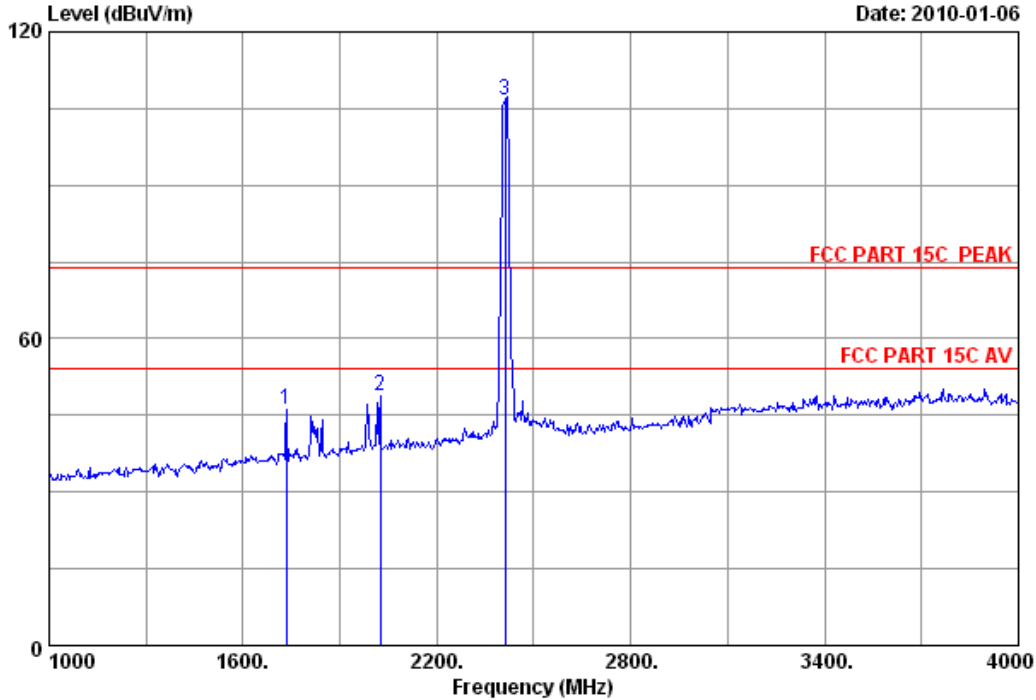
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Site no. : 3m Chamber Data no. : 37  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission			Remark
						Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	
1	1735.000	27.71	7.31	36.36	47.47	46.13	74.00	27.87	Peak
2	2026.000	29.21	7.80	36.12	47.82	48.71	74.00	25.29	Peak
3	2412.000	29.45	8.60	35.95	104.64	106.74	74.00	-32.74	Peak

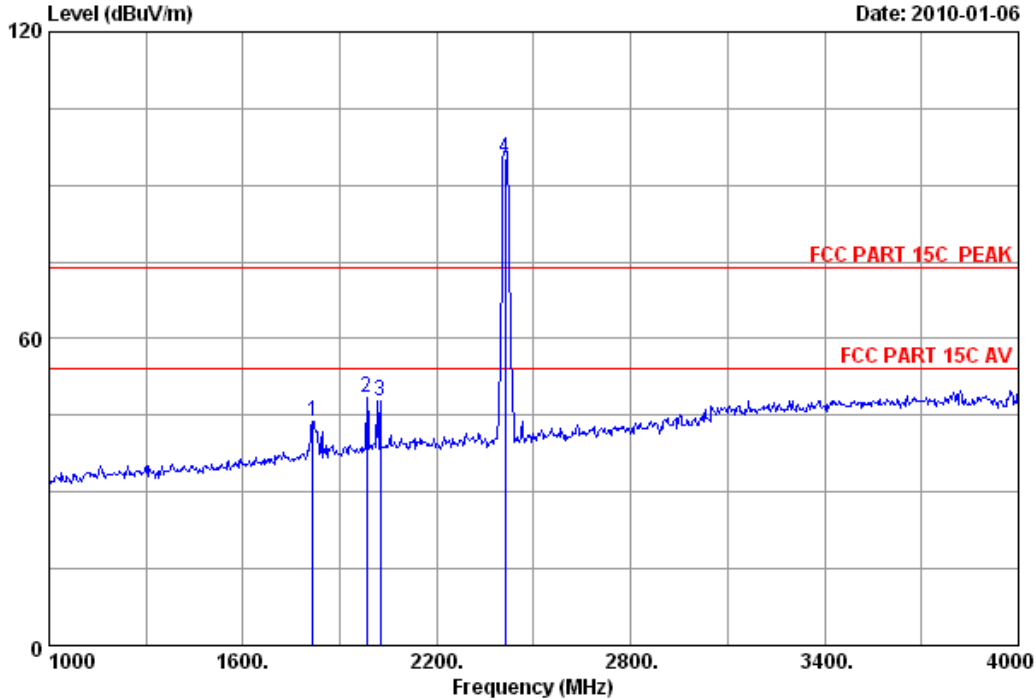
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 38 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 38  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1816.000	28.17	7.46	36.34	44.63	43.92	74.00	30.08	Peak
2	1984.000	29.11	7.76	36.06	47.63	48.44	74.00	25.56	Peak
3	2026.000	29.21	7.80	36.12	46.82	47.71	74.00	26.29	Peak
4	2412.000	29.45	8.60	35.95	93.05	95.15	74.00	-21.15	Peak

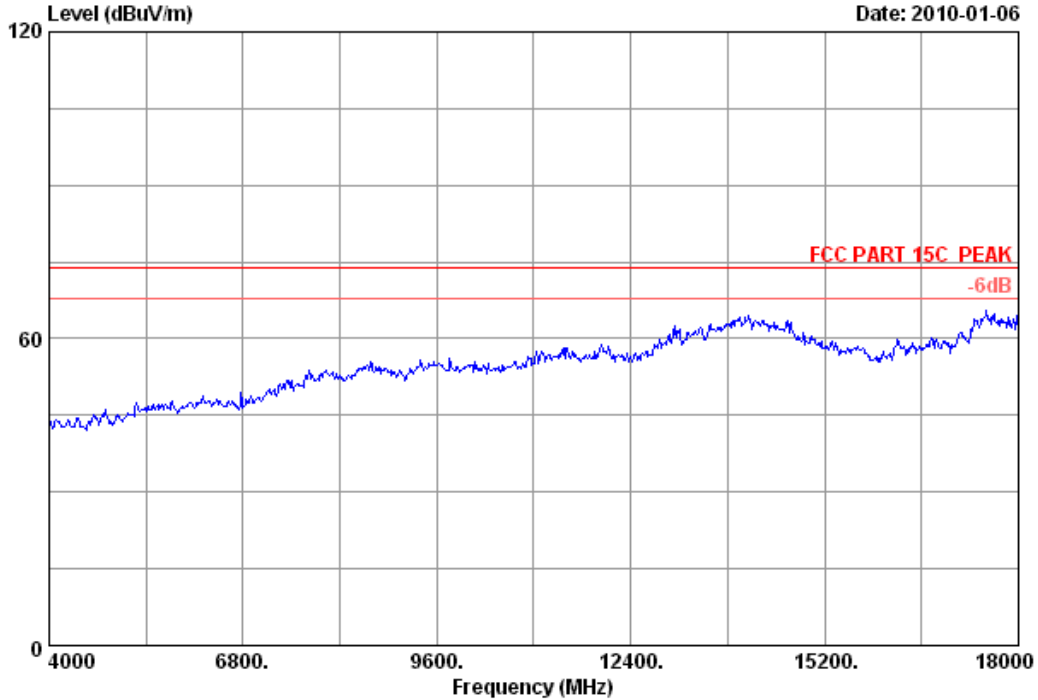
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 39 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

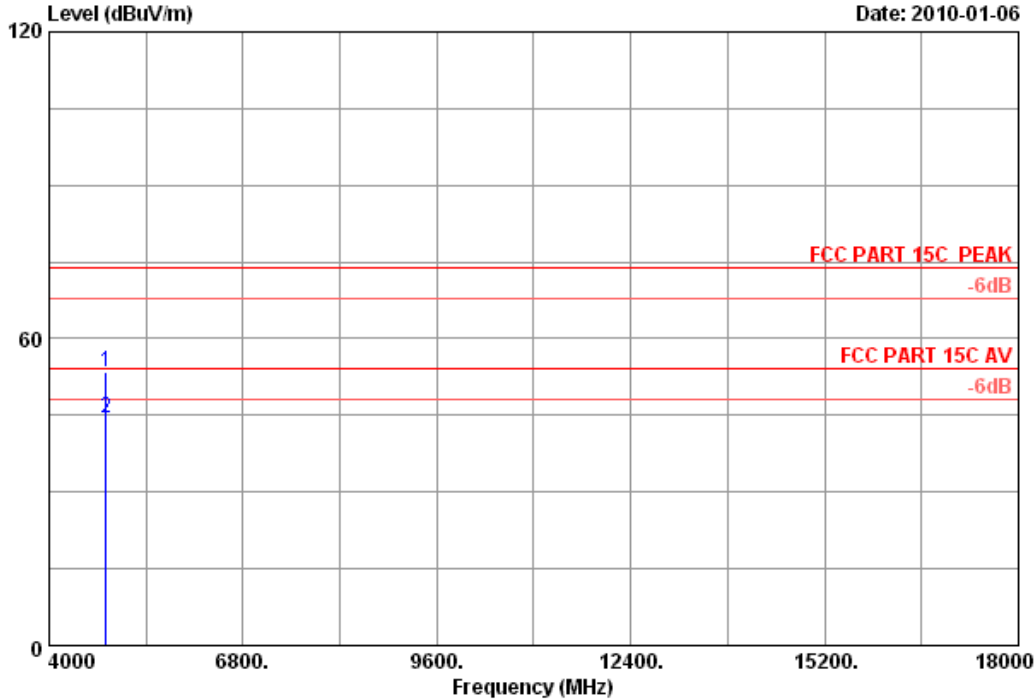


Site no.	: 3m Chamber	Data no.	: 39
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT20 CH1 2412MHz Tx		
	: TL-WN861N		



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Data: 40 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 40  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.58	35.25	41.96	53.61	74.00	20.39	Peak
2	4824.000	34.32	12.58	35.25	32.86	44.51	54.00	9.49	Average

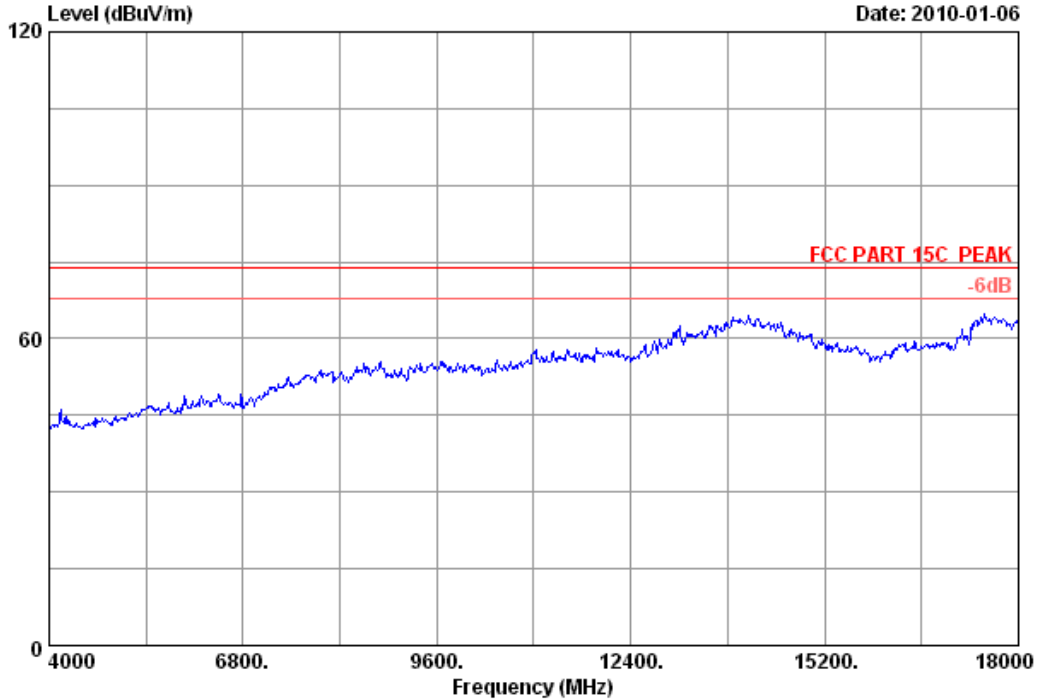
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 41 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

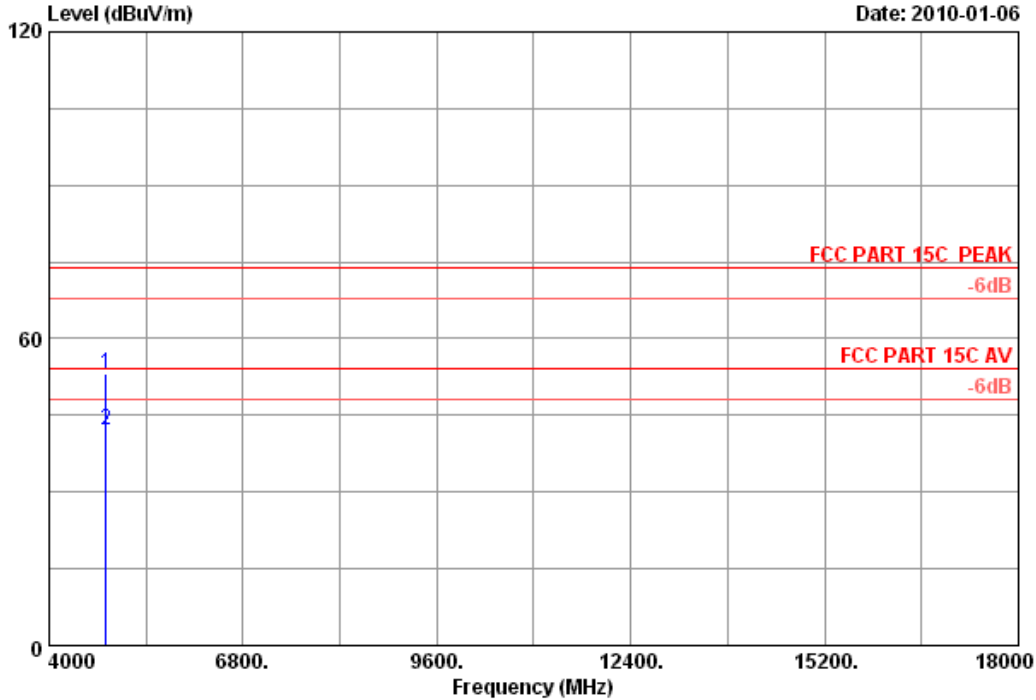


Site no.	: 3m Chamber	Data no.	: 41
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT20 CH1 2412MHz Tx		
	: TL-WN861N		



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Data: 42 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 42  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.58	35.25	41.39	53.04	74.00	20.96	Peak
2	4824.000	34.32	12.58	35.25	30.59	42.24	54.00	11.76	Average

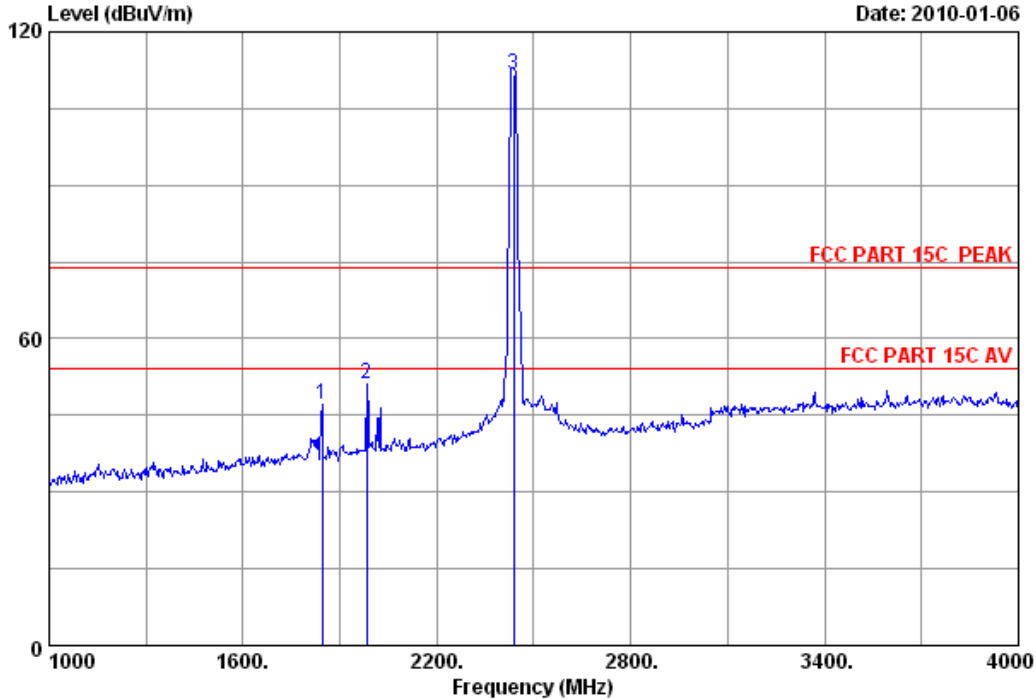
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 43  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH6 2437MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1846.000	28.36	7.52	36.23	47.46	47.11	74.00	26.89	Peak
2	1984.000	29.11	7.76	36.06	50.19	51.00	74.00	23.00	Peak
3	2437.000	29.47	8.60	36.06	109.78	111.79	74.00	-37.79	Peak

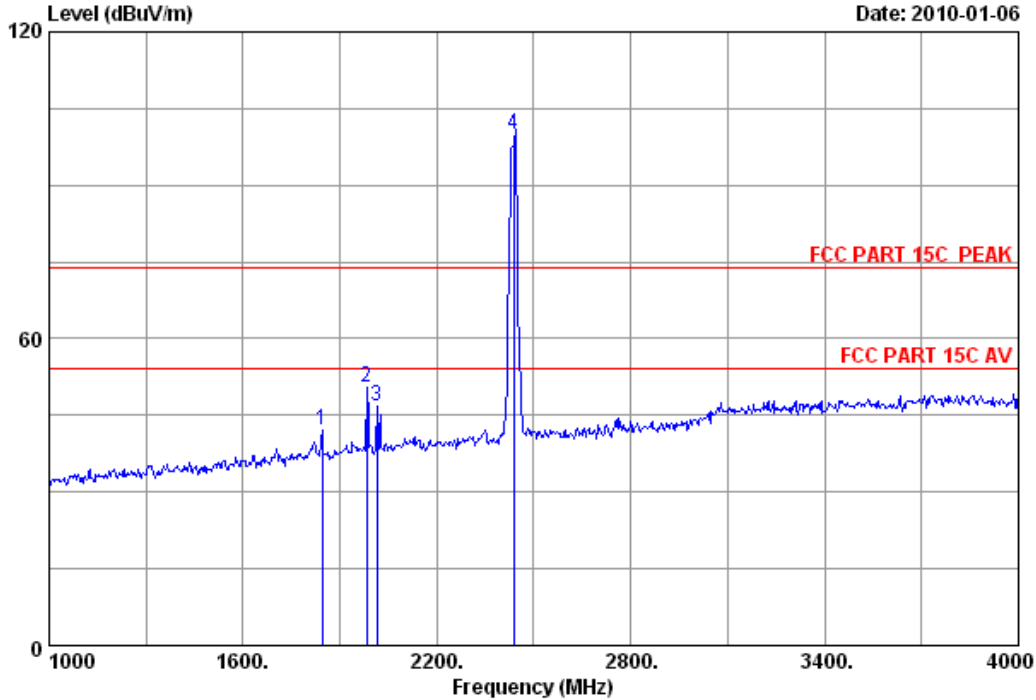
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 44  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1846.000	28.36	7.52	36.23	42.42	42.07	74.00	31.93	Peak
2	1984.000	29.11	7.76	36.06	49.67	50.48	74.00	23.52	Peak
3	2014.000	29.21	7.92	36.12	45.94	46.95	74.00	27.05	Peak
4	2437.000	29.47	8.60	36.06	98.04	100.05	74.00	-26.05	Peak

Remarks:

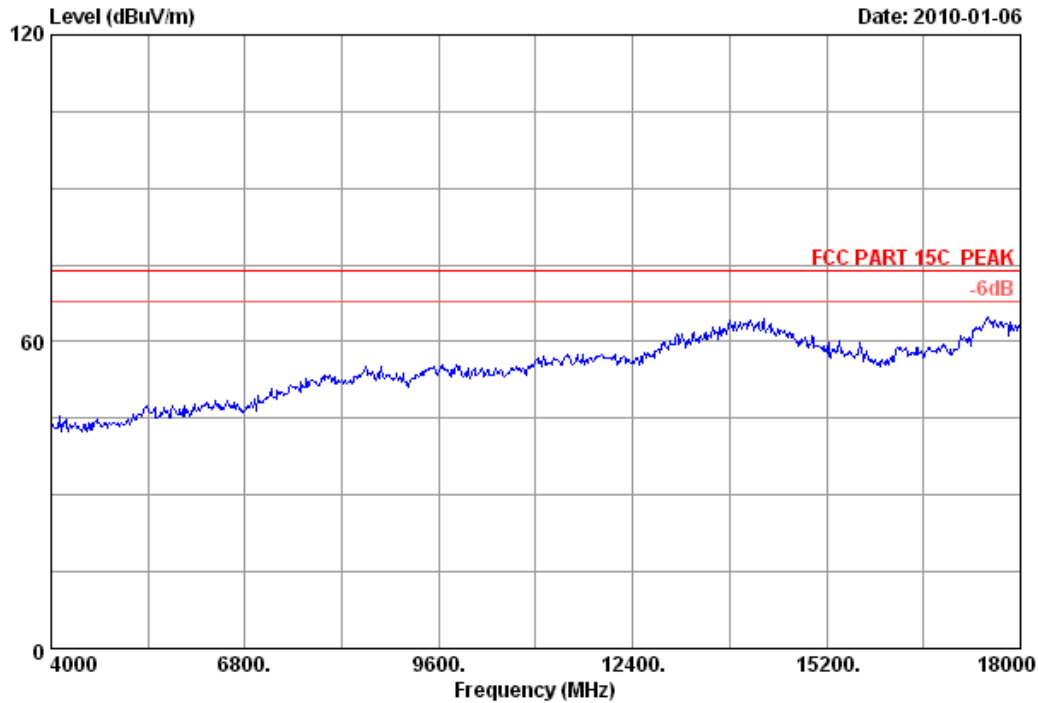
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 45 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

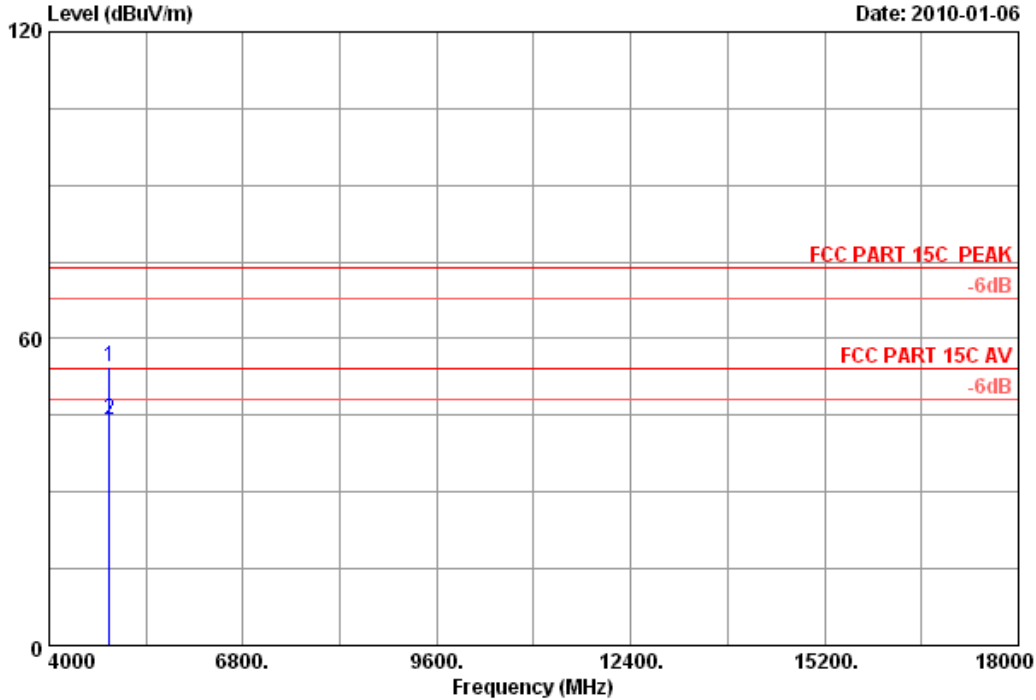


Site no.	: 3m Chamber	Data no.	: 45
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT20 CH6 2437MHz Tx		
	: TL-WN861N		



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Site no. : 3m Chamber Data no. : 46  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH6 2437MHz Tx  
 : TL-WN861N

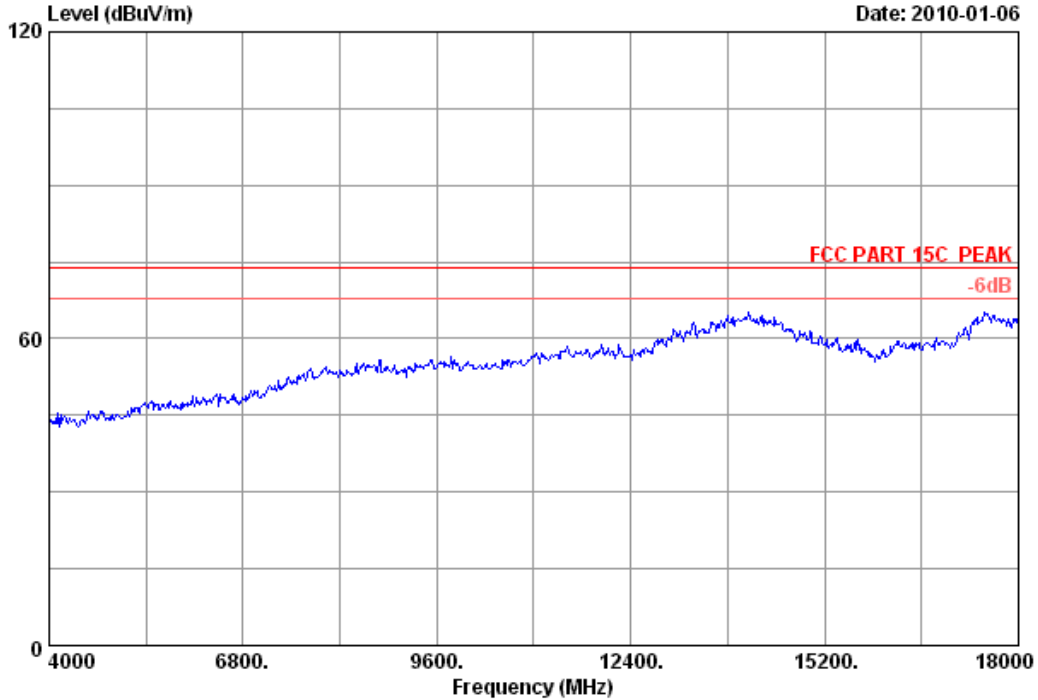
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	43.36	54.64	74.00	19.36	Peak
2	4874.000	34.41	12.23	35.36	32.75	44.03	54.00	9.97	Average

Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 47 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

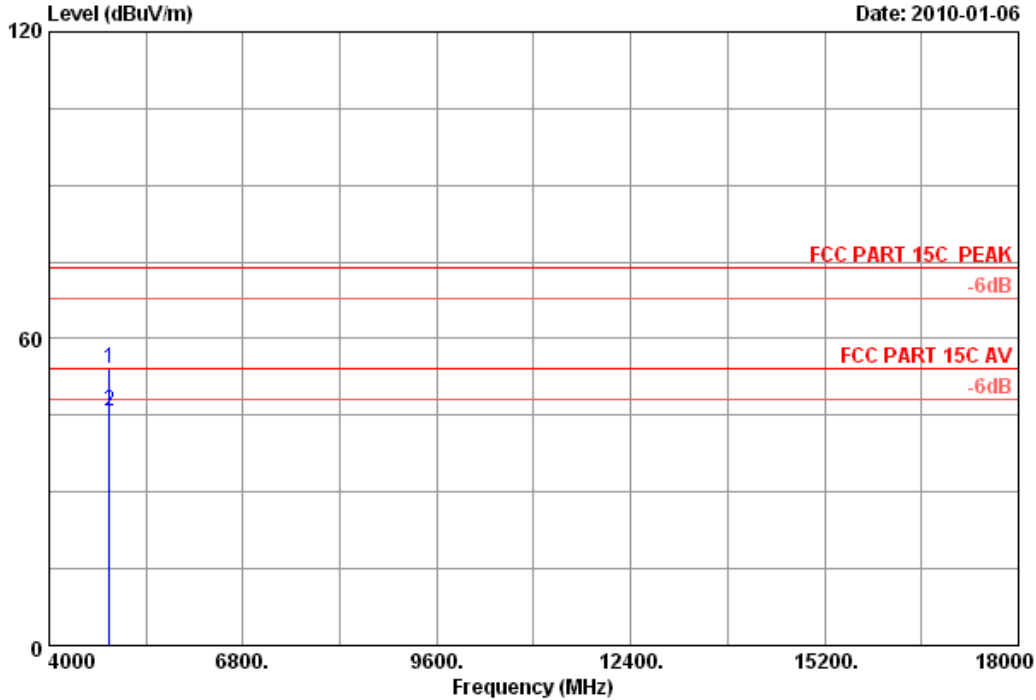


Site no.	: 3m Chamber	Data no.	: 47
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT20 CH6 2437MHz Tx		
	: TL-WN861N		



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Data: 48 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 48  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH6 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	42.71	53.99	74.00	20.01	Peak
2	4874.000	34.41	12.23	35.36	34.63	45.91	54.00	8.09	Average

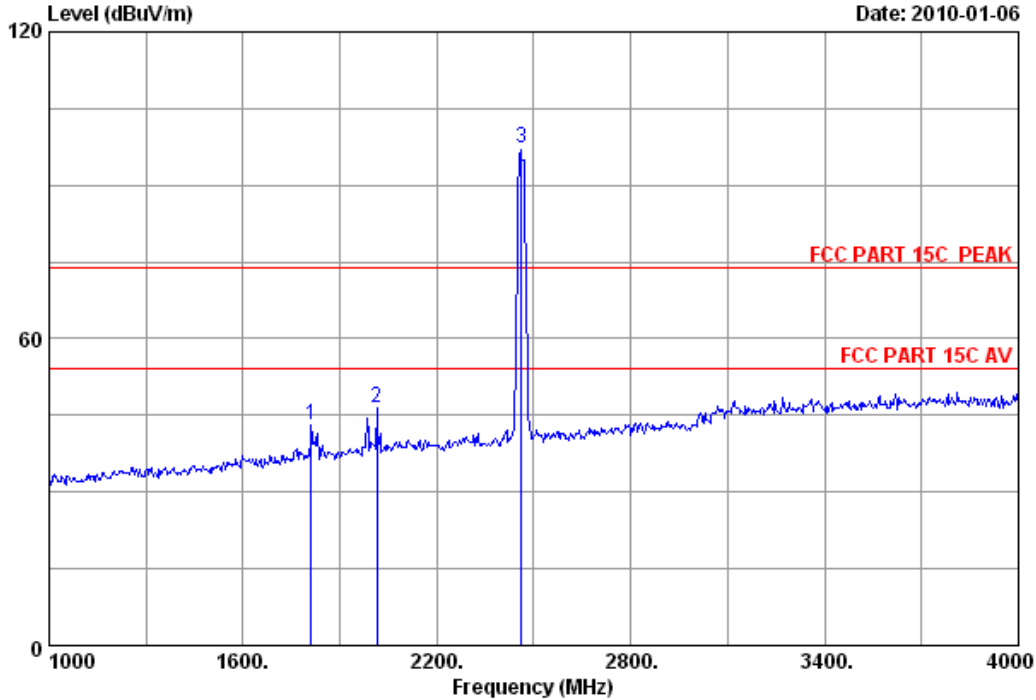
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 49  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1810.000	28.17	7.46	36.34	43.83	43.12	74.00	30.88	Peak
2	2014.000	29.21	7.92	36.12	45.29	46.30	74.00	27.70	Peak
3	2462.000	29.48	8.76	36.02	95.09	97.31	74.00	-23.31	Peak

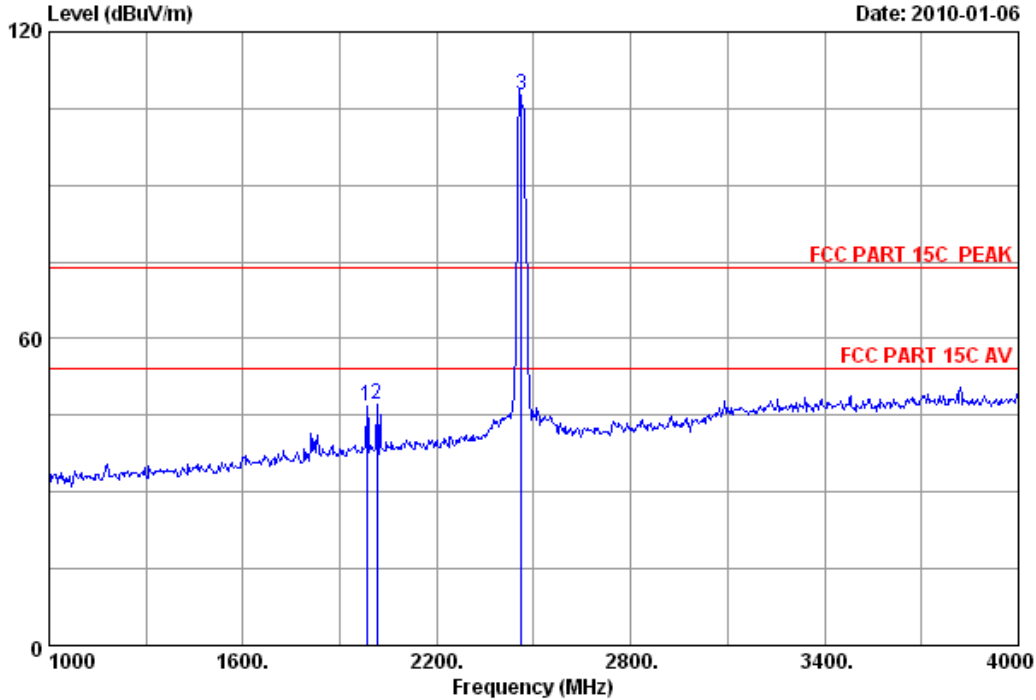
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Postcode:518057

Data: 50 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 50  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1984.000	29.11	7.76	36.06	46.00	46.81	74.00	27.19	Peak
2	2014.000	29.21	7.92	36.12	46.02	47.03	74.00	26.97	Peak
3	2462.000	29.48	8.76	36.02	105.30	107.52	74.00	-33.52	Peak

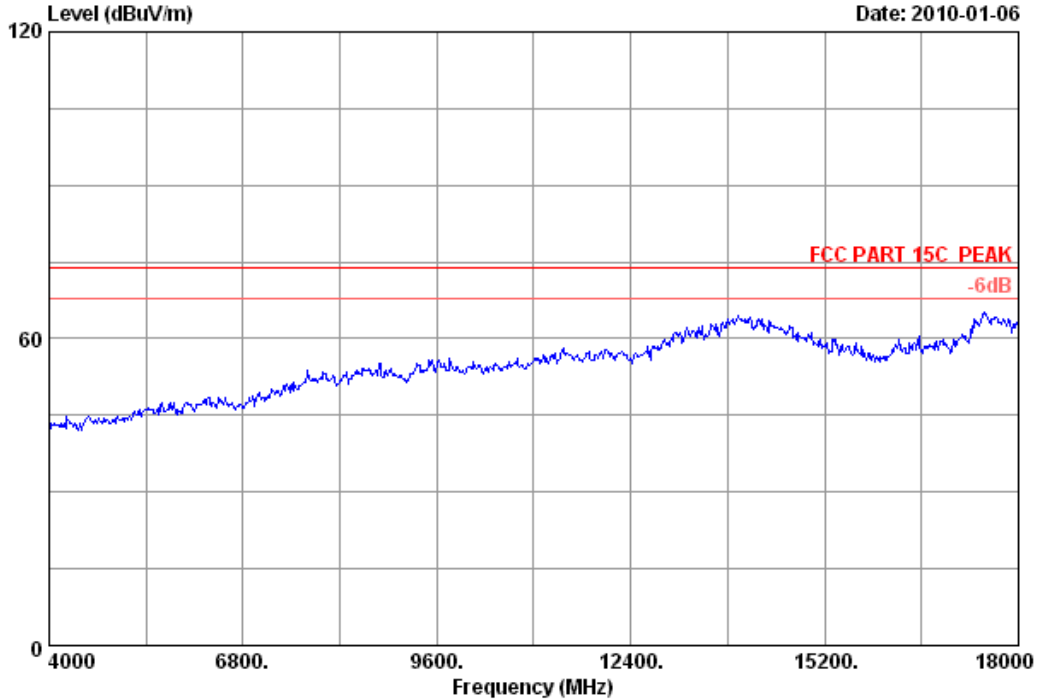
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 51 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

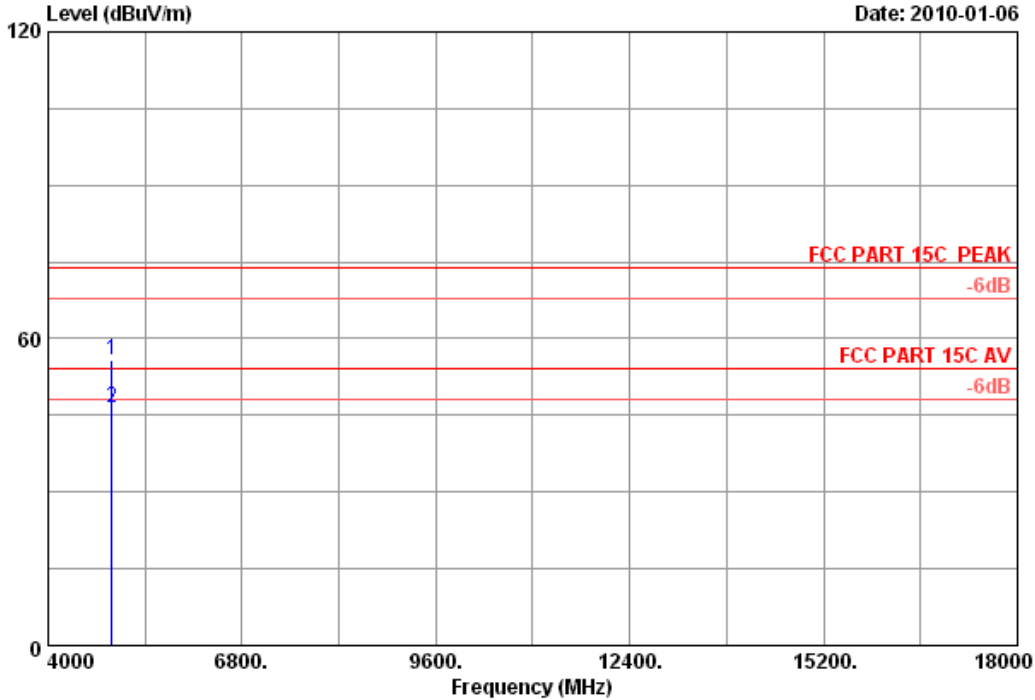


Site no.	: 3m Chamber	Data no.	: 51
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT20 CH11 2462MHz Tx		
	: TL-WN861N		



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Data: 52 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 52  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.58	35.34	44.25	55.98	74.00	18.02	Peak
2	4924.000	34.49	12.58	35.34	34.67	46.40	54.00	7.60	Average

Remarks:

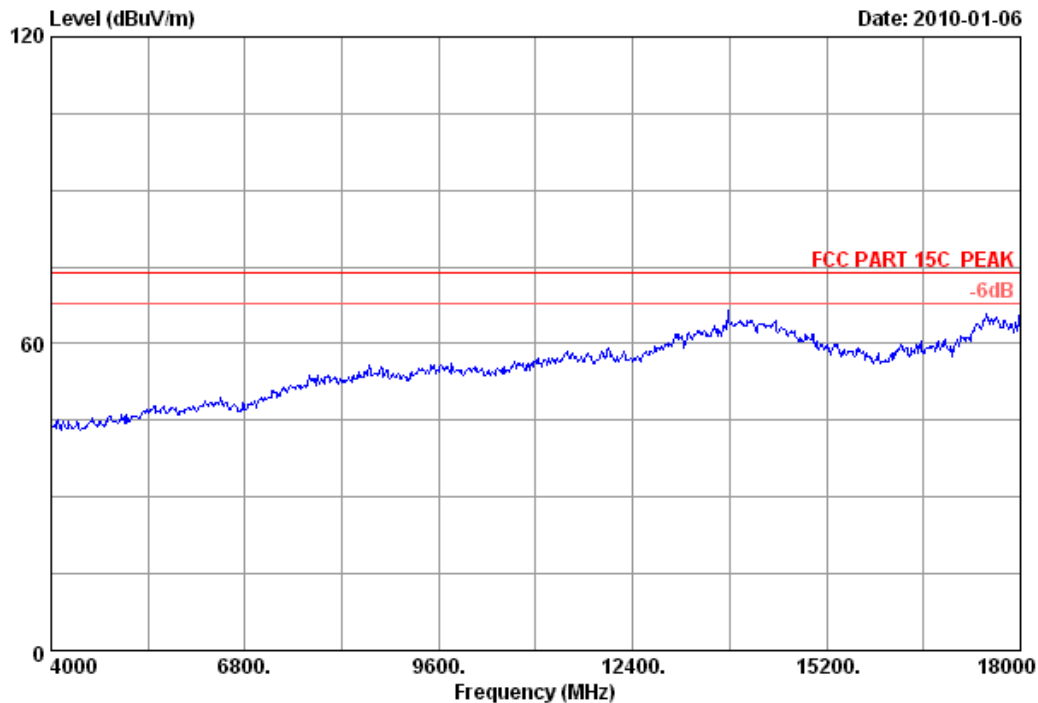
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 53 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

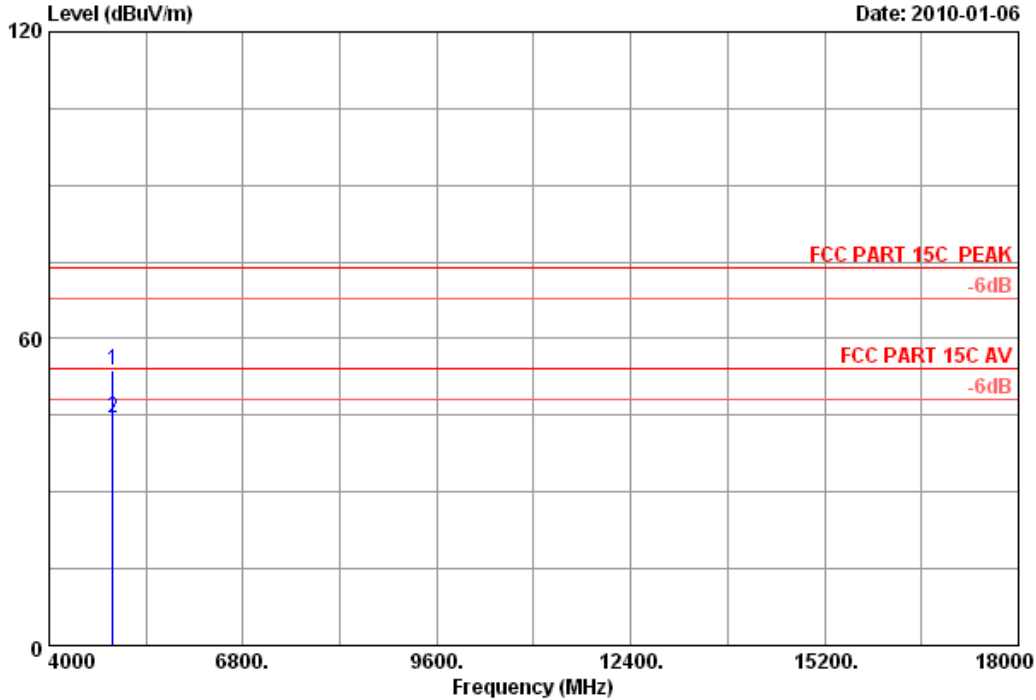


Site no.	: 3m Chamber	Data no.	: 53
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT20 CH11 2462MHz Tx		
	: TL-WN861N		



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Data: 54 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 54  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.58	35.34	42.10	53.83	74.00	20.17	Peak
2	4924.000	34.49	12.58	35.34	32.86	44.59	54.00	9.41	Average

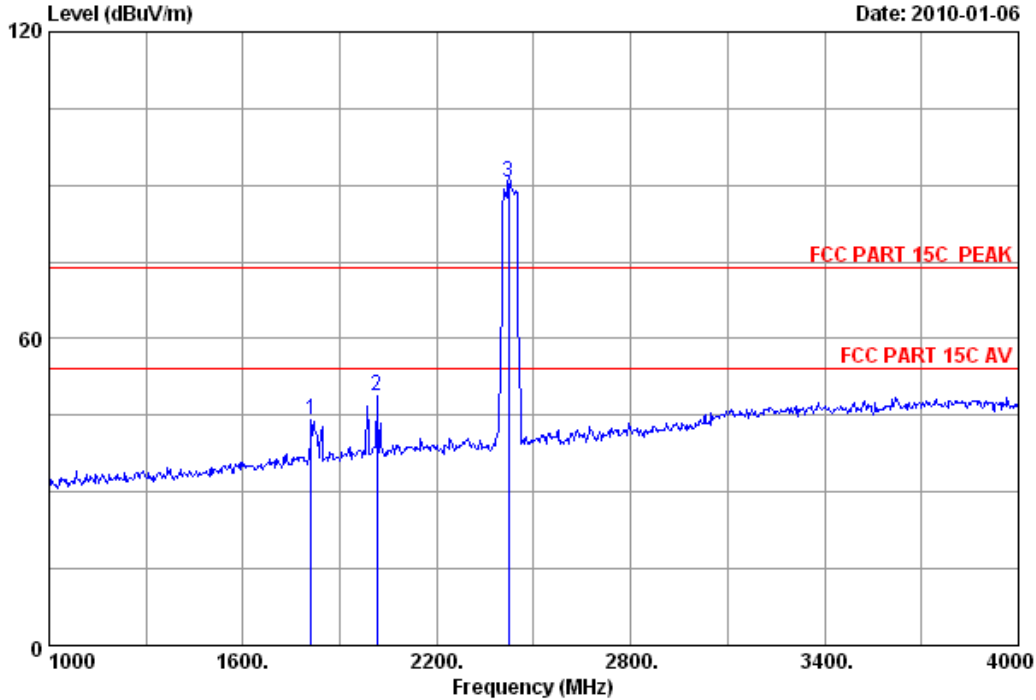
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 55 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 55  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1810.000	28.17	7.46	36.34	44.81	44.10	74.00	29.90	Peak
2	2014.000	29.21	7.92	36.12	47.75	48.76	74.00	25.24	Peak
3	2422.000	29.46	8.60	36.01	88.60	90.65	74.00	-16.65	Peak

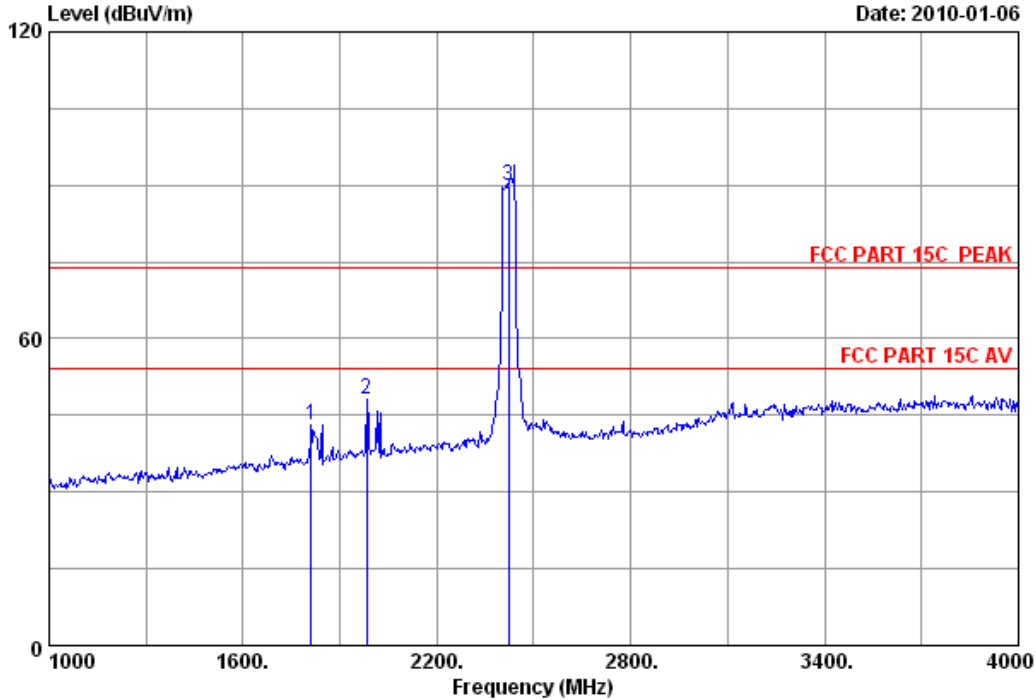
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 56 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 56  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1810.000	28.17	7.46	36.34	43.76	43.05	74.00	30.95	Peak
2	1984.000	29.11	7.76	36.06	47.34	48.15	74.00	25.85	Peak
3	2422.000	29.46	8.60	36.01	87.98	90.03	74.00	-16.03	Peak

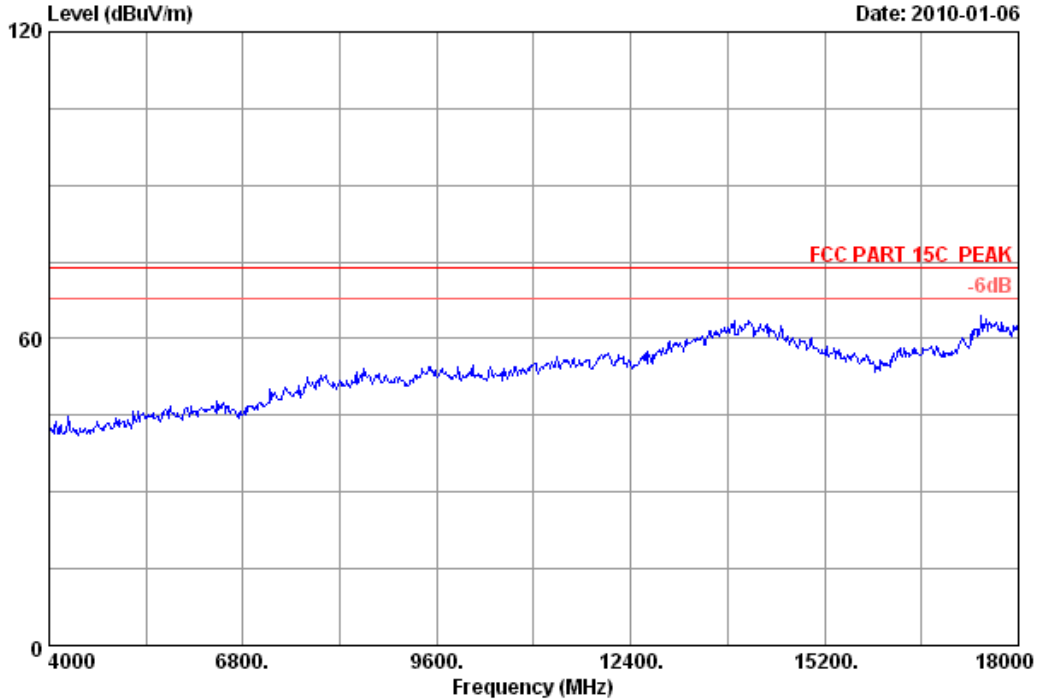
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 57 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

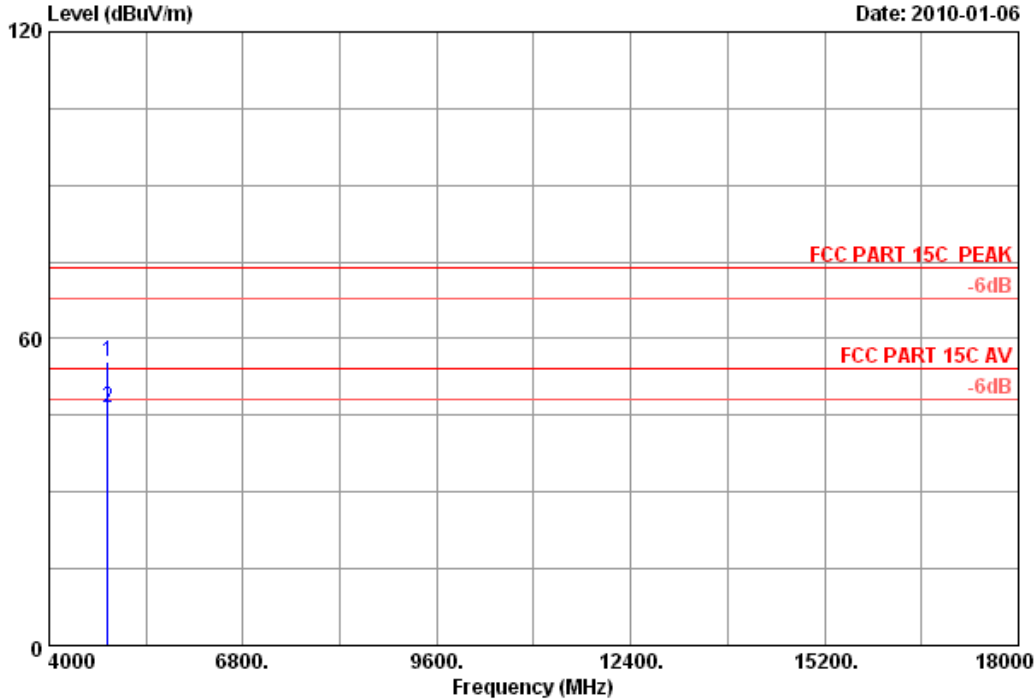


Site no.	: 3m Chamber	Data no.	: 57
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT40 CH1 2422MHz Tx		
	: TL-WN861N		



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Site no. : 3m Chamber Data no. : 58  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

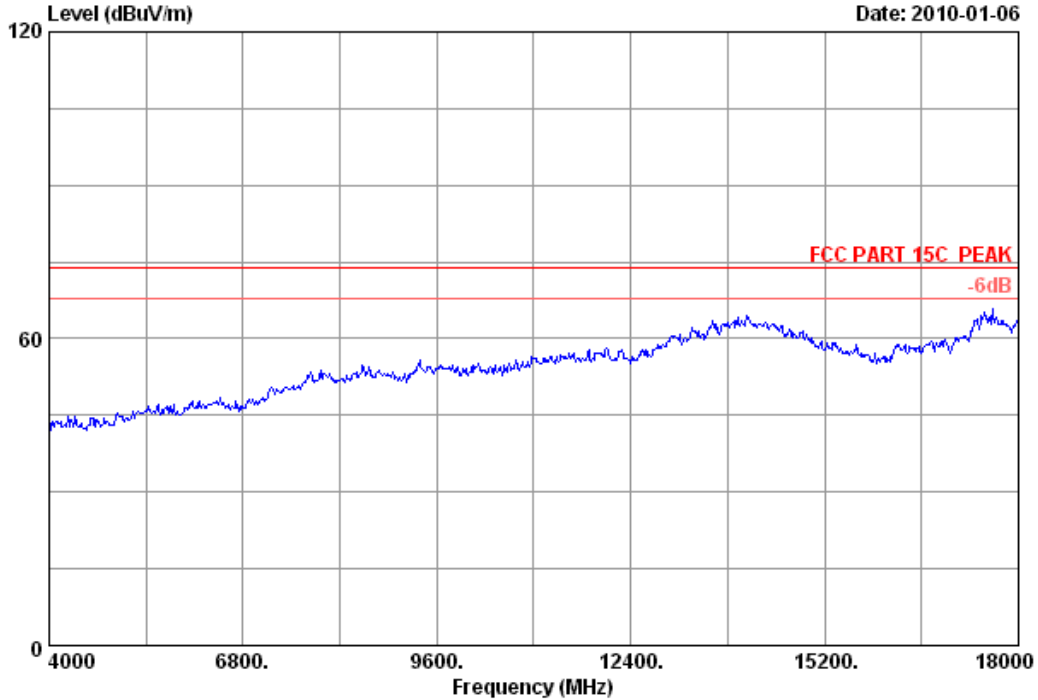
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4844.000	34.35	12.45	35.25	43.90	55.45	74.00	18.55	Peak
2	4844.000	34.35	12.45	35.25	34.86	46.41	54.00	7.59	Average

Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



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Data: 59 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

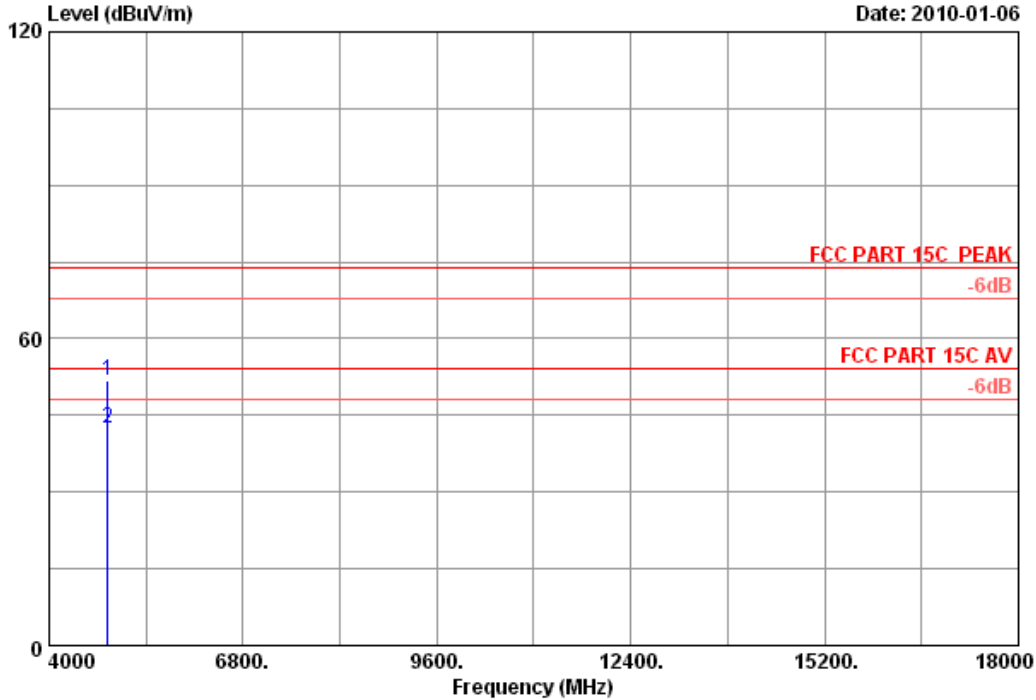


Site no.	: 3m Chamber	Data no.	: 59
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT40 CH1 2422MHz Tx		
	: TL-WN861N		



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Data: 60 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 60  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4844.000	34.35	12.45	35.25	40.19	51.74	74.00	22.26	Peak
2	4844.000	34.35	12.45	35.25	30.82	42.37	54.00	11.63	Average

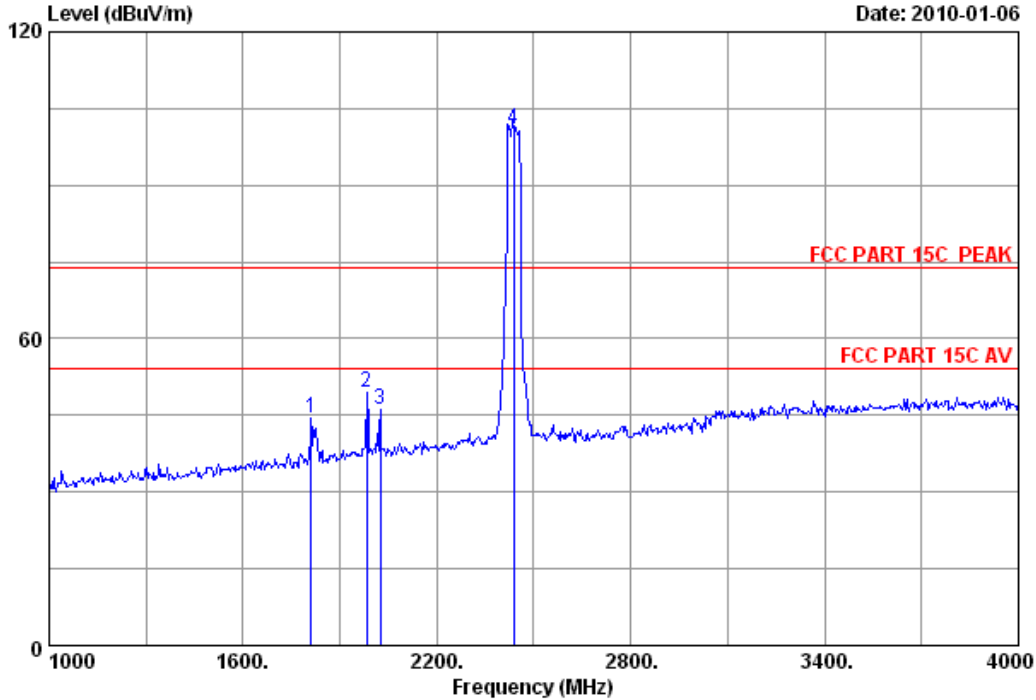
Remarks:  
 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.





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Data: 61 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 61  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH4 2437MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1810.000	28.17	7.46	36.34	45.30	44.59	74.00	29.41	Peak
2	1984.000	29.11	7.76	36.06	48.50	49.31	74.00	24.69	Peak
3	2026.000	29.21	7.80	36.12	45.12	46.01	74.00	27.99	Peak
4	2437.000	29.47	8.60	36.06	99.00	101.01	74.00	-27.01	Peak

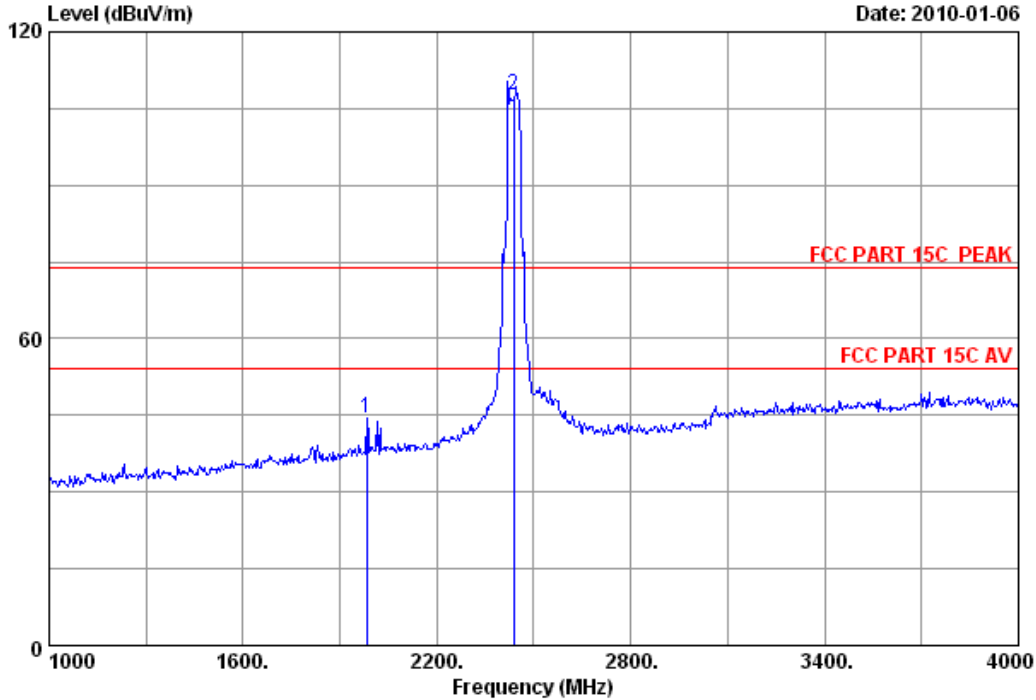
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 62 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 62  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH4 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1984.000	29.11	7.76	36.06	43.59	44.40	74.00	29.60	Peak
2	2437.000	29.47	8.60	36.06	105.58	107.59	74.00	-33.59	Peak

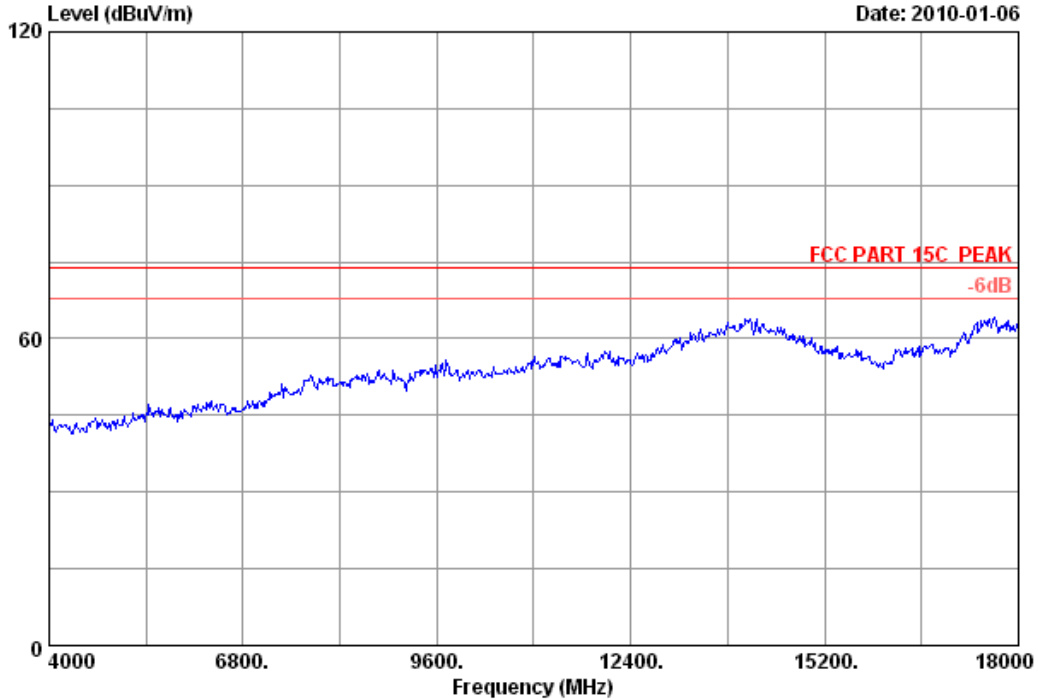
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 63 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

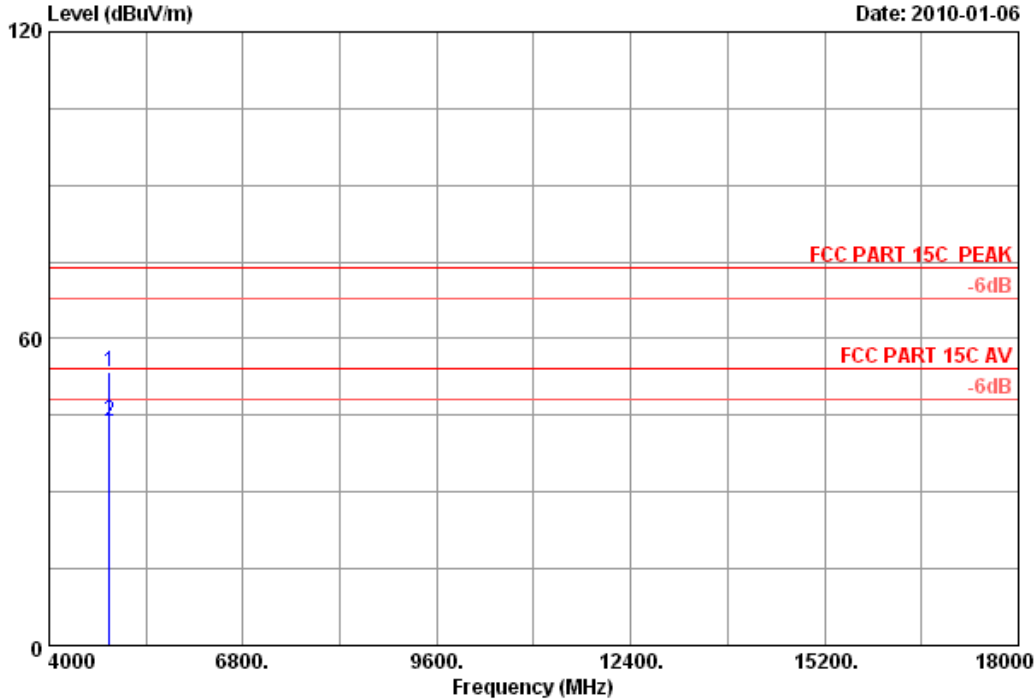


Site no.	: 3m Chamber	Data no.	: 63
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT40 CH4 2437MHz Tx		
	: TL-WN861N		



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Data: 64 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 64  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH4 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	42.20	53.48	74.00	20.52	Peak
2	4874.000	34.41	12.23	35.36	32.57	43.85	54.00	10.15	Average

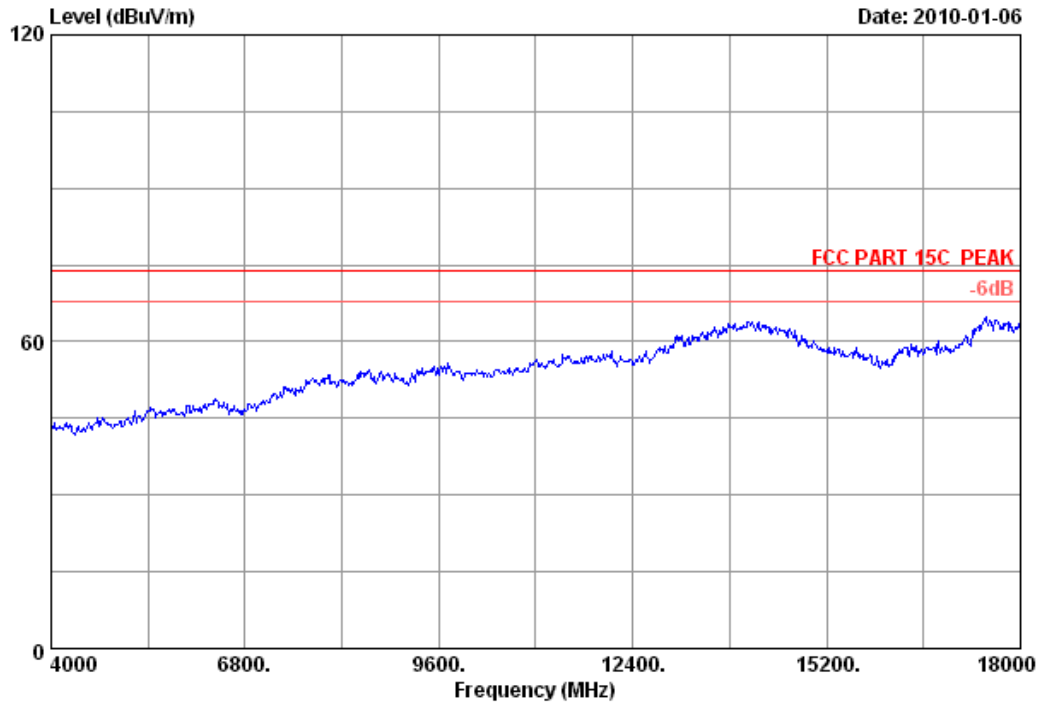
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 65 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

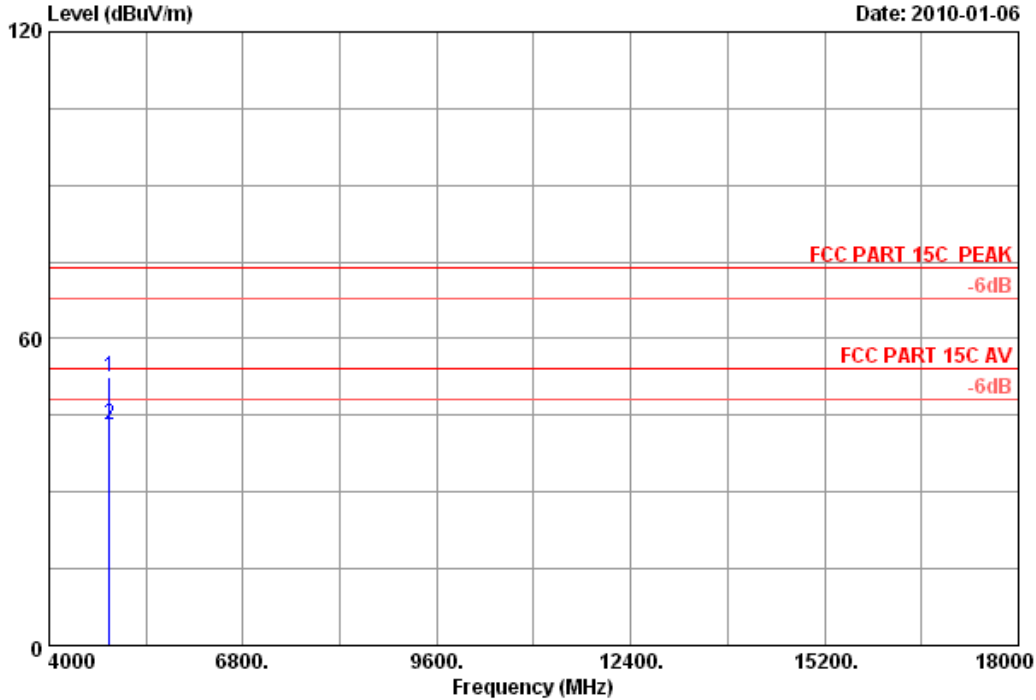


Site no.	: 3m Chamber	Data no.	: 65
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT40 CH4 2437MHz Tx		
	: TL-WN861N		



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Postcode:518057

Data: 66 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 66  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH4 2437MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.23	35.36	41.20	52.48	74.00	21.52	Peak
2	4874.000	34.41	12.23	35.36	31.86	43.14	54.00	10.86	Average

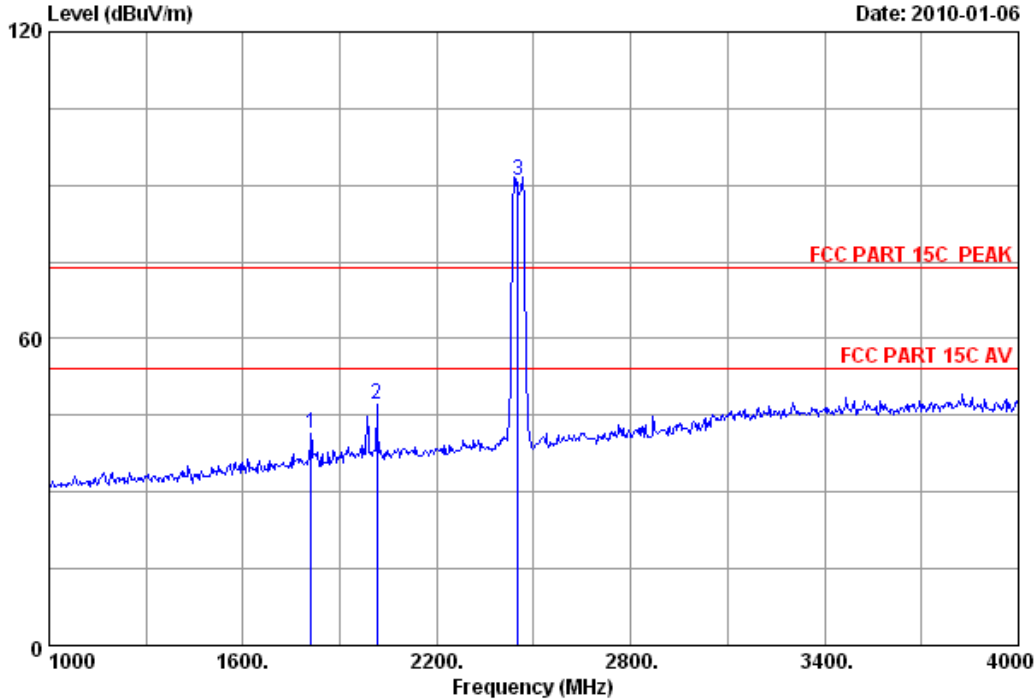
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 67 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 67  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1810.000	28.17	7.46	36.34	42.25	41.54	74.00	32.46	Peak
2	2014.000	29.21	7.92	36.12	46.07	47.08	74.00	26.92	Peak
3	2452.000	29.47	8.48	36.06	88.96	90.85	74.00	-16.85	Peak

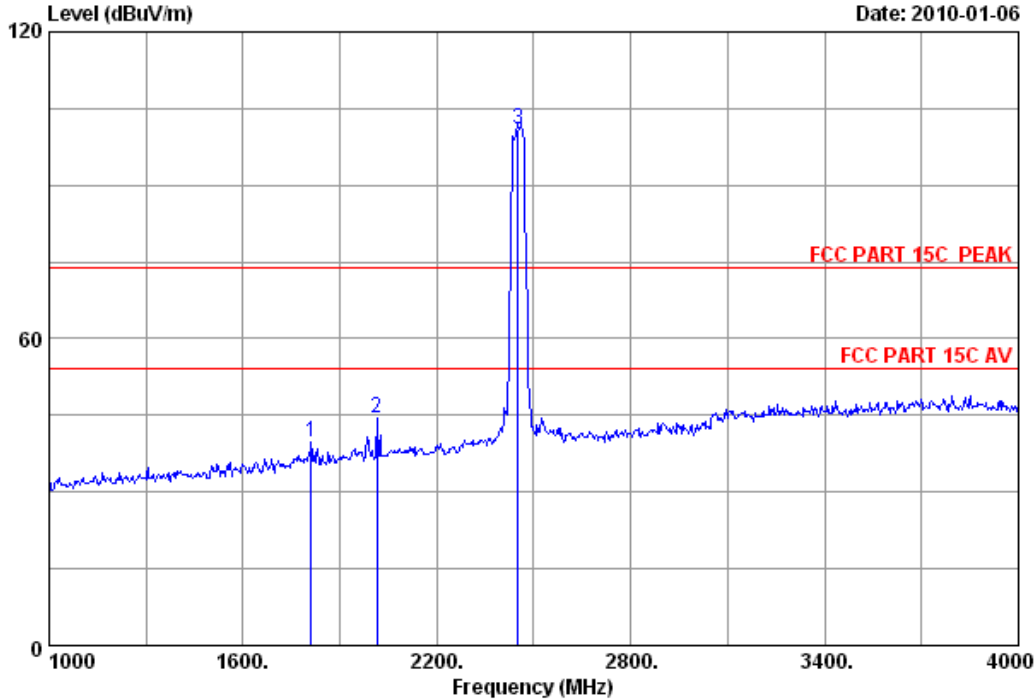
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Fax:+86-755-26632877  
Postcode:518057

Data: 68 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 68  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1810.000	28.17	7.46	36.34	40.40	39.69	74.00	34.31	Peak
2	2014.000	29.21	7.92	36.12	43.47	44.48	74.00	29.52	Peak
3	2452.000	29.47	8.48	36.06	98.96	100.85	74.00	-26.85	Peak

Remarks:

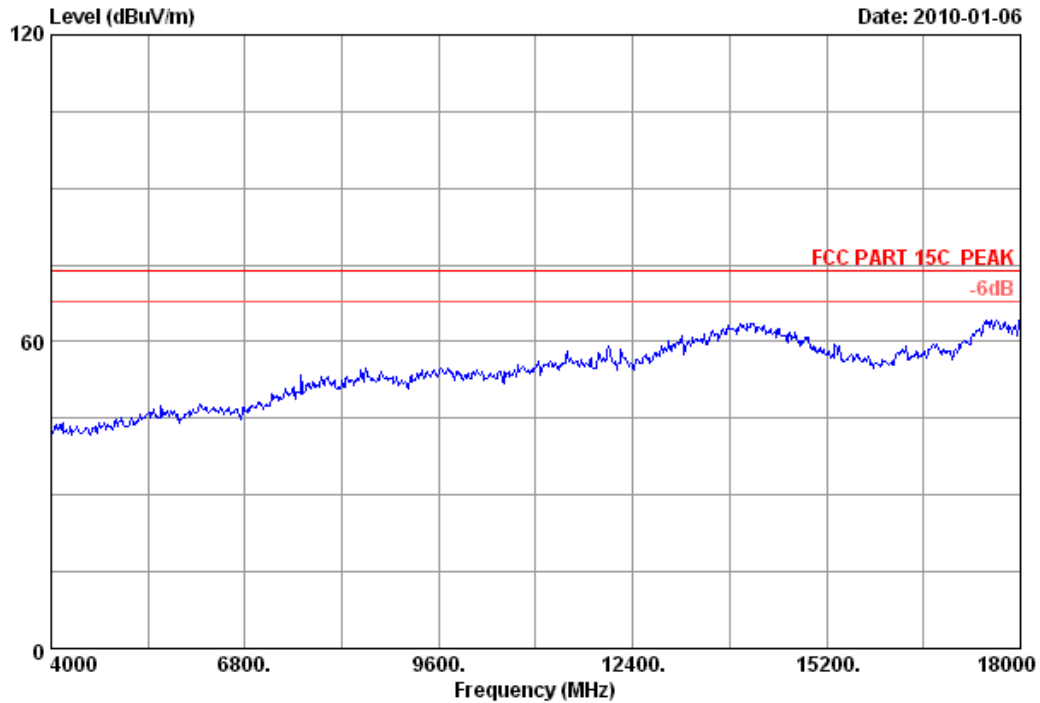
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 69 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

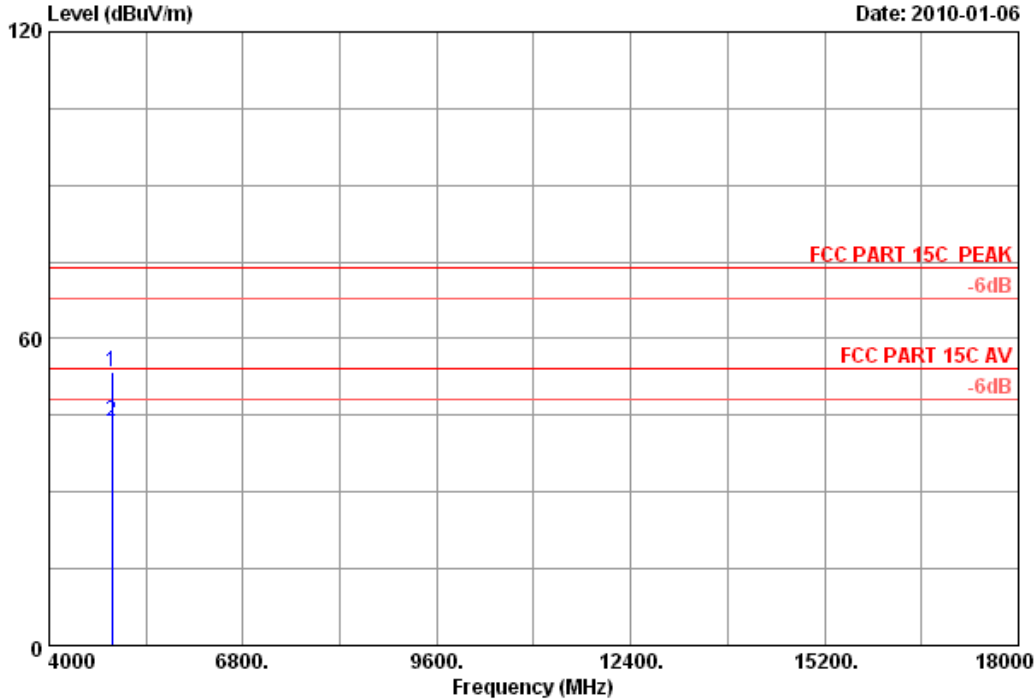


Site no.	: 3m Chamber	Data no.	: 69
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT40 CH7 2452MHz Tx		
	: TL-WN861N		



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Postcode:518057

Data: 70 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 70  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4904.000	34.46	12.43	35.27	41.82	53.44	74.00	20.56	Peak
2	4904.000	34.46	12.43	35.27	32.20	43.82	54.00	10.18	Average

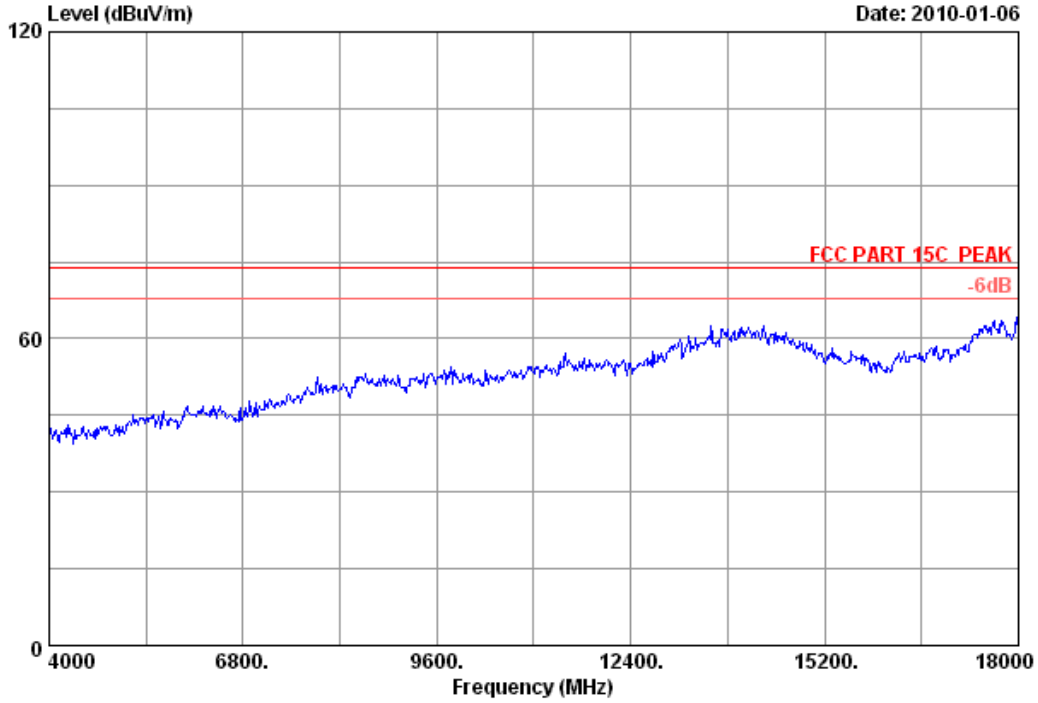
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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 Postcode:518057

Data: 71 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)

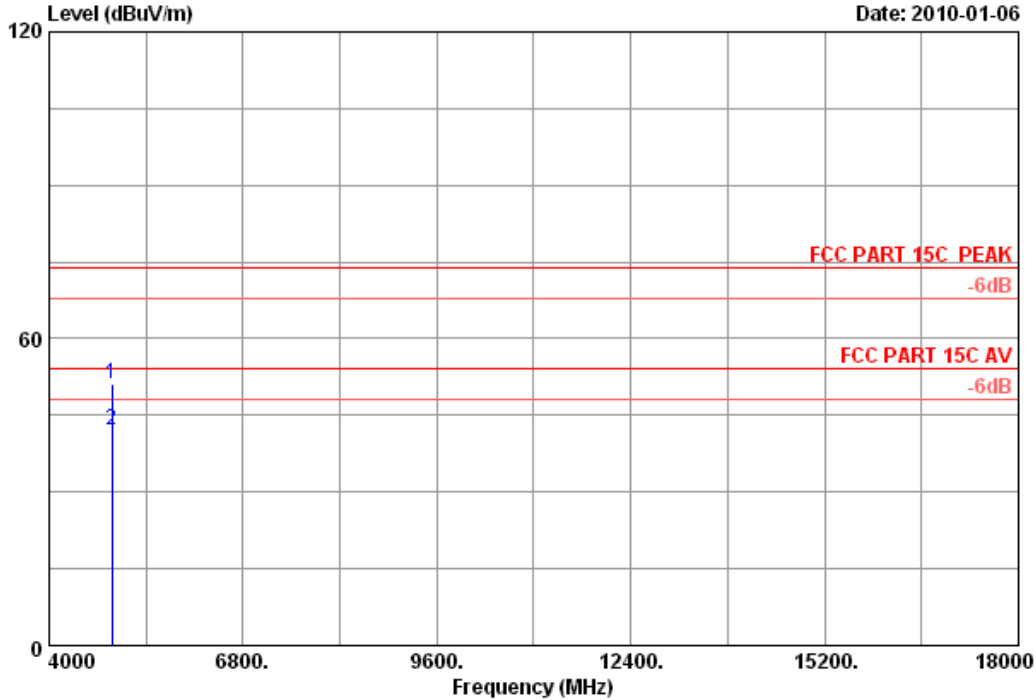


Site no.	: 3m Chamber	Data no.	: 71
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Paul Tian
EUT	: 300Mbps Wireless N Mini PCI Adapter		
Power	: DC 3.3V From PC Input 120V/60Hz		
Test mode	: IEEE802.11nHT40 CH7 2452MHz Tx		
	: TL-WN861N		



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 Postcode:518057

Data: 72 File: E:\2009 report data\T\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 72  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4904.000	34.46	12.43	35.27	39.50	51.12	74.00	22.88	Peak
2	4904.000	34.46	12.43	35.27	30.47	42.09	54.00	11.91	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 5. CONDUCTED SPURIOUS EMISSIONS

### 5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 09	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 09	1Year

### 5.2. Limit

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

### 5.3. Test Procedure

The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz.

### 5.4. Test result

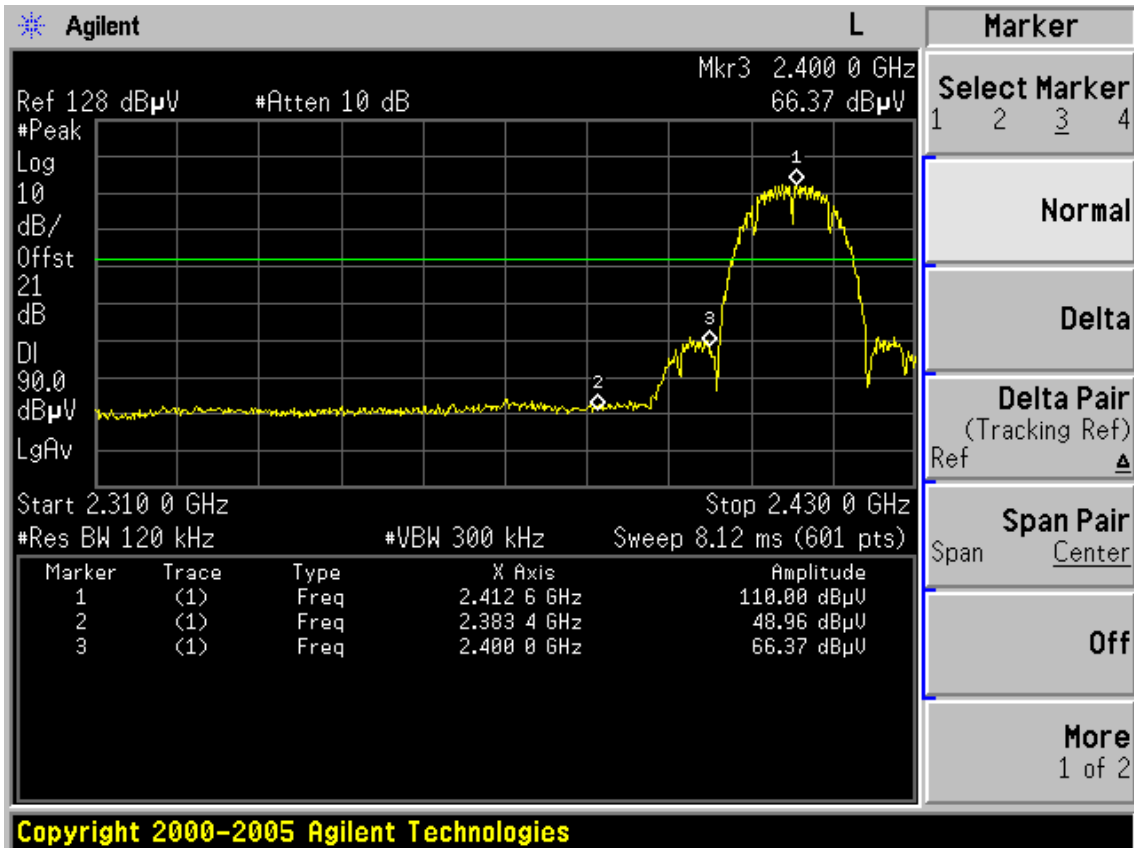
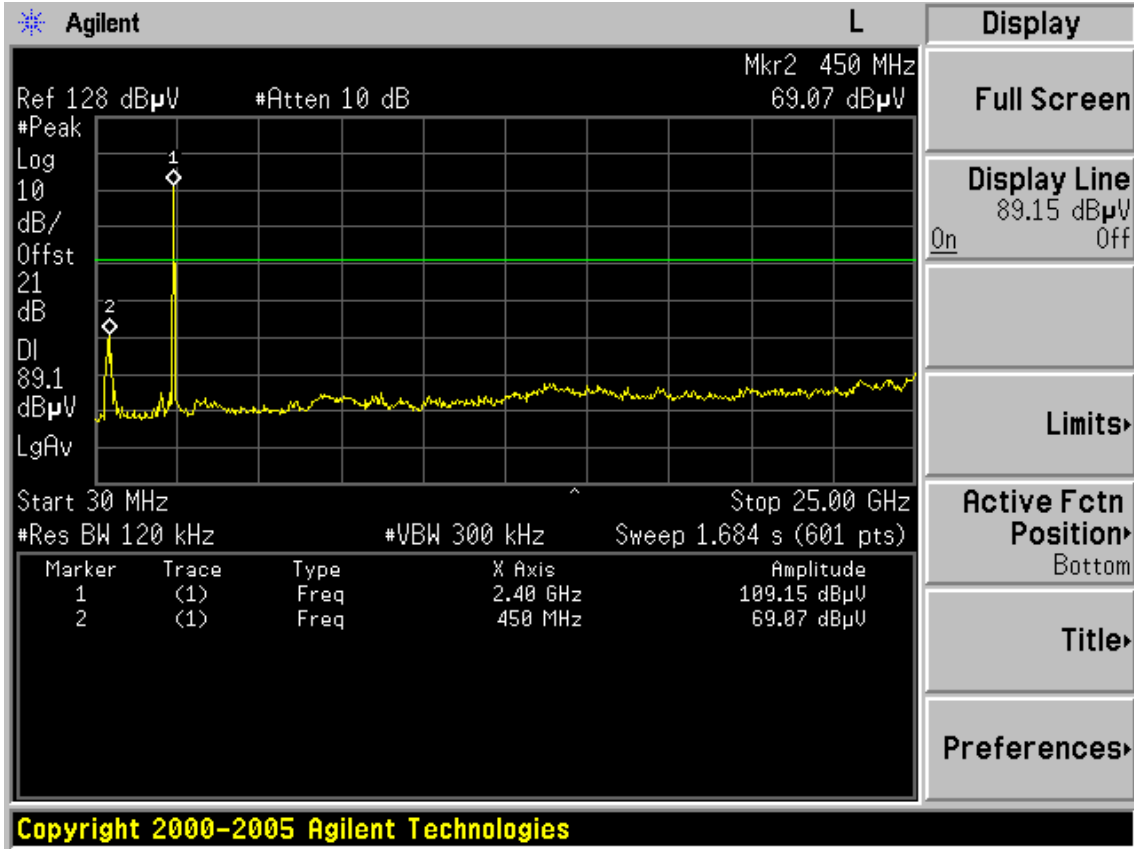
**PASS** (The testing data was attached in the next pages.)

**Conducted emission test data:**

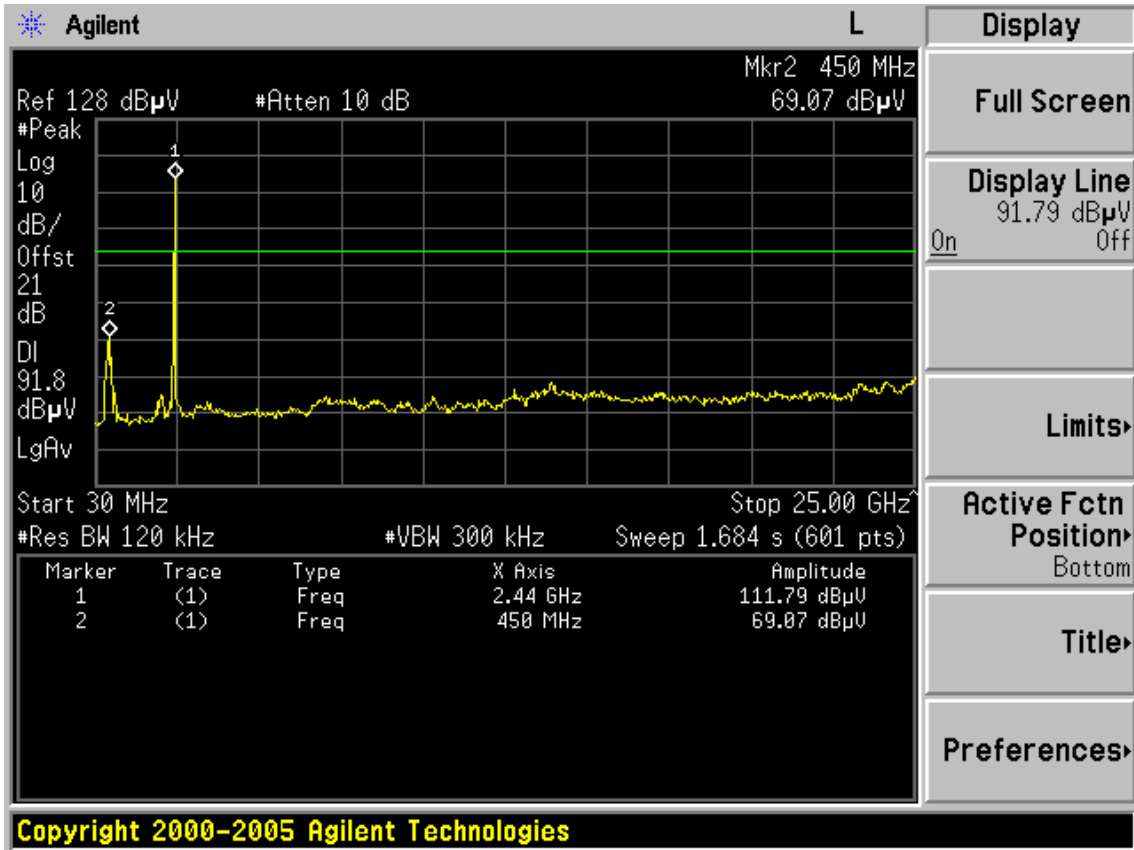
**Chain 1:**

Test Mode: IEEE 802.11b TX

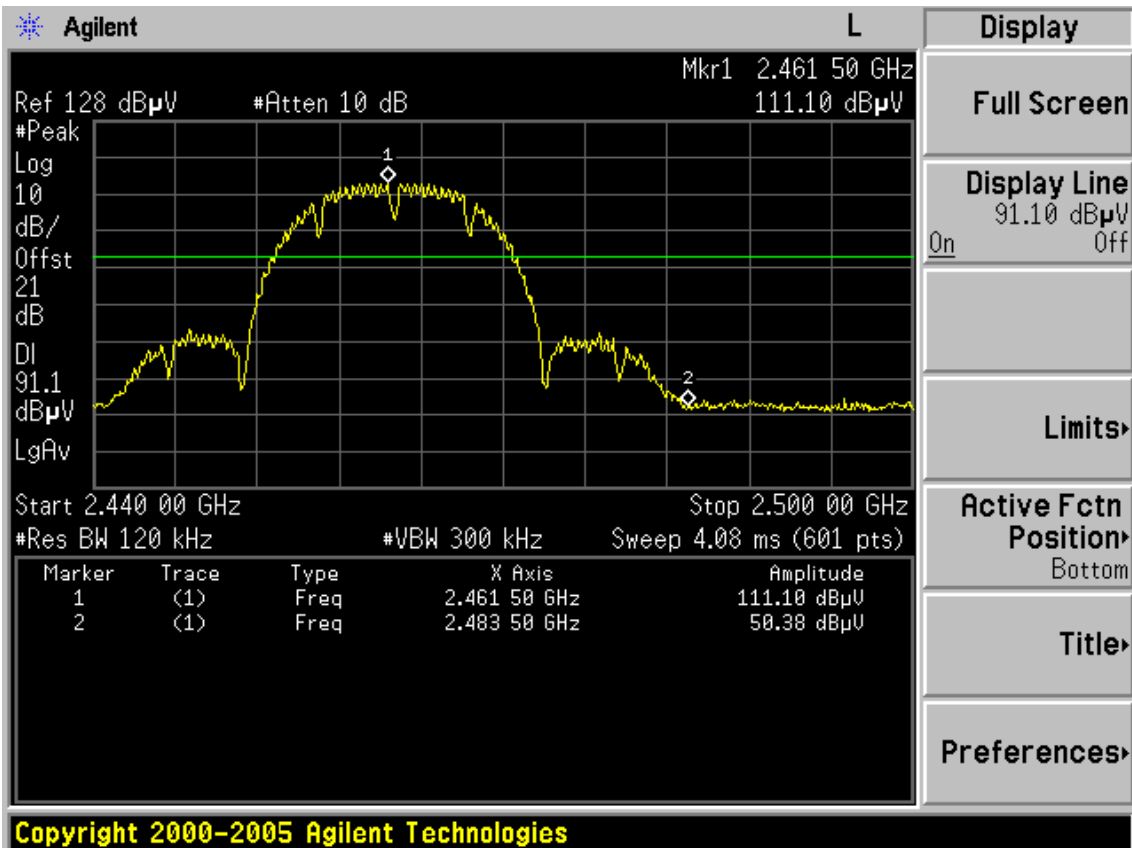
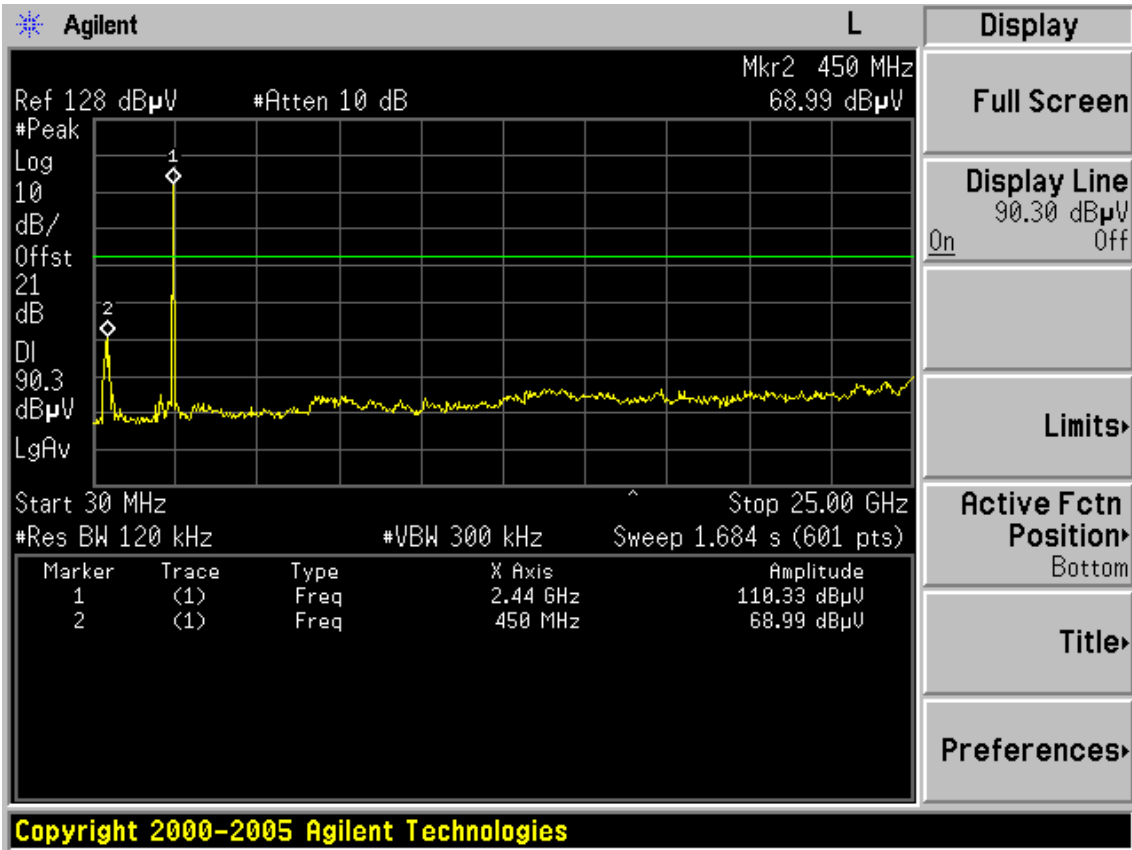
Test CH1: 2412MHz



Test CH6: 2437MHz



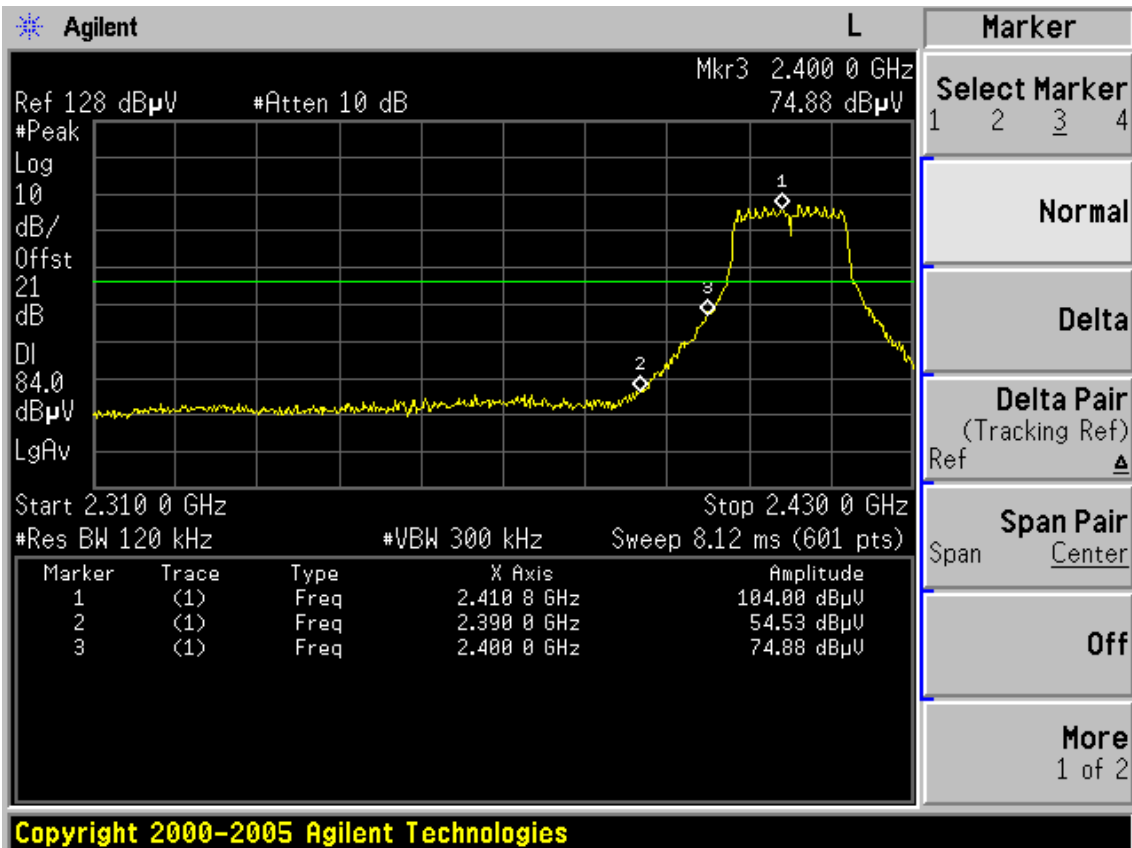
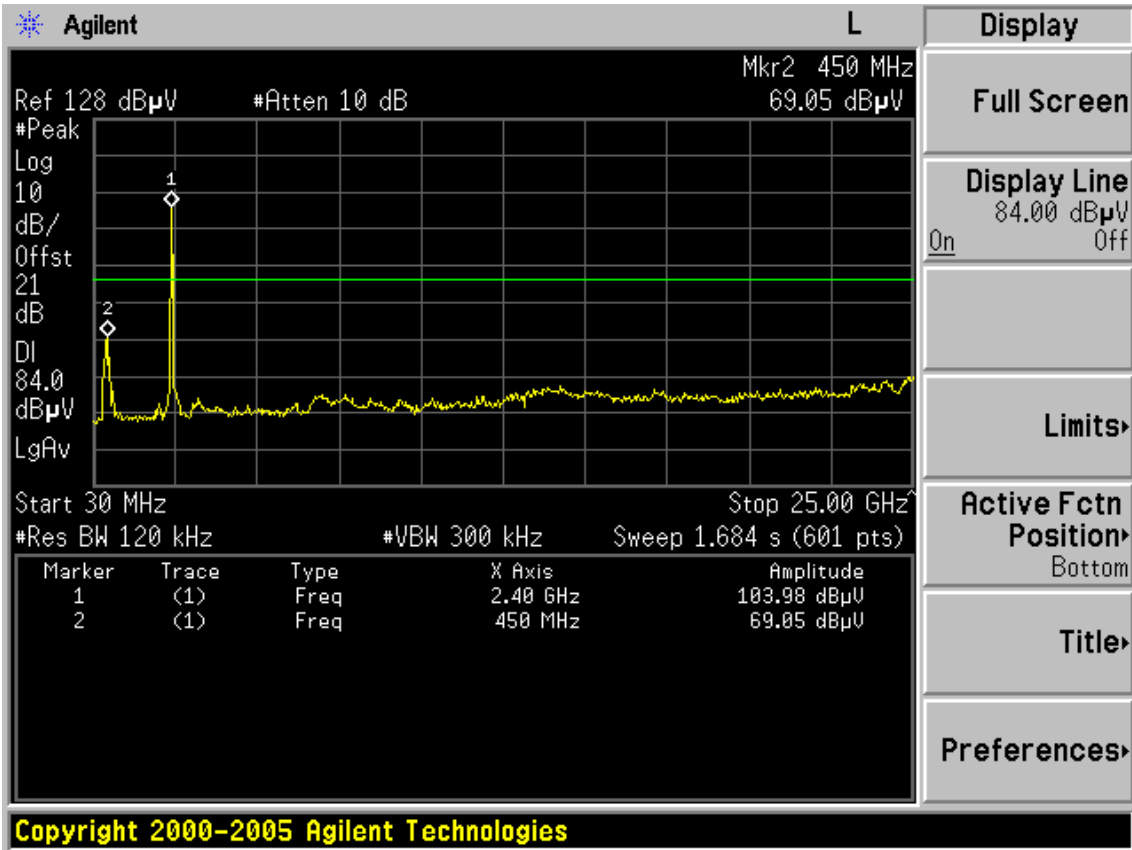
Test CH11: 2462MHz



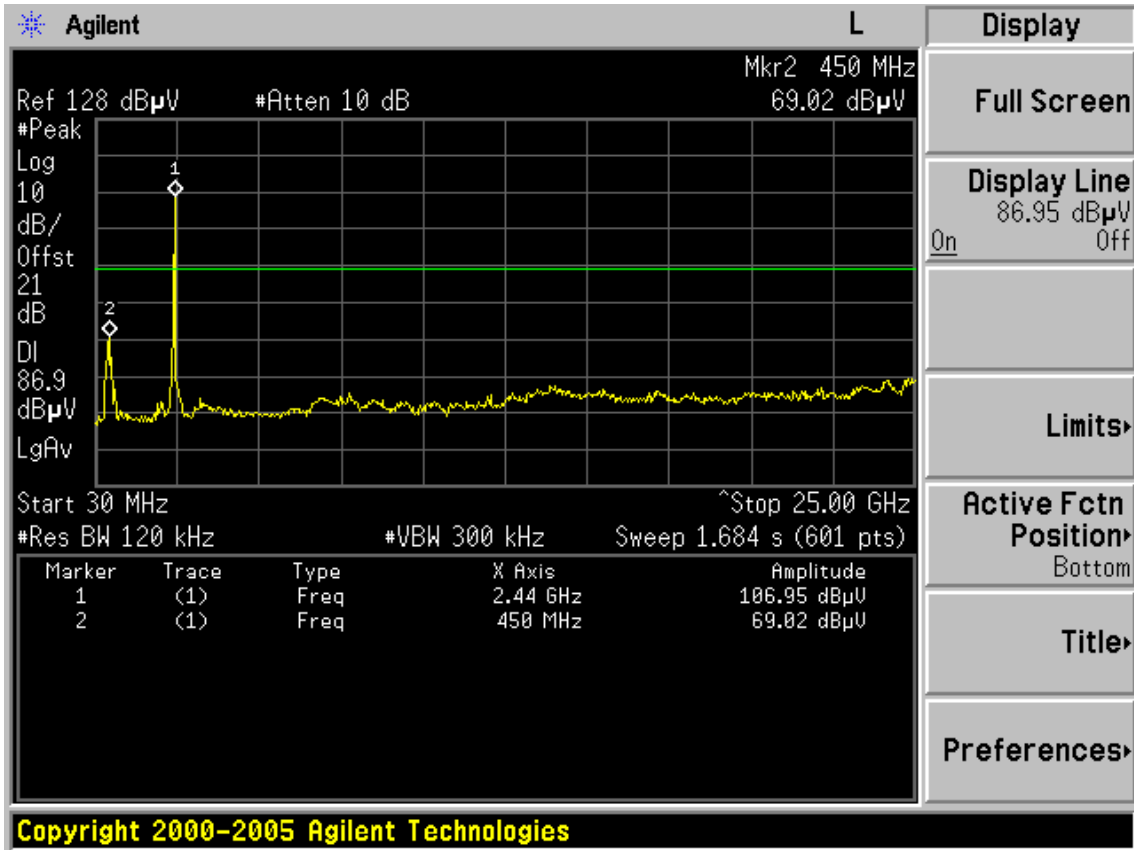


Test Mode: IEEE 802.11g TX

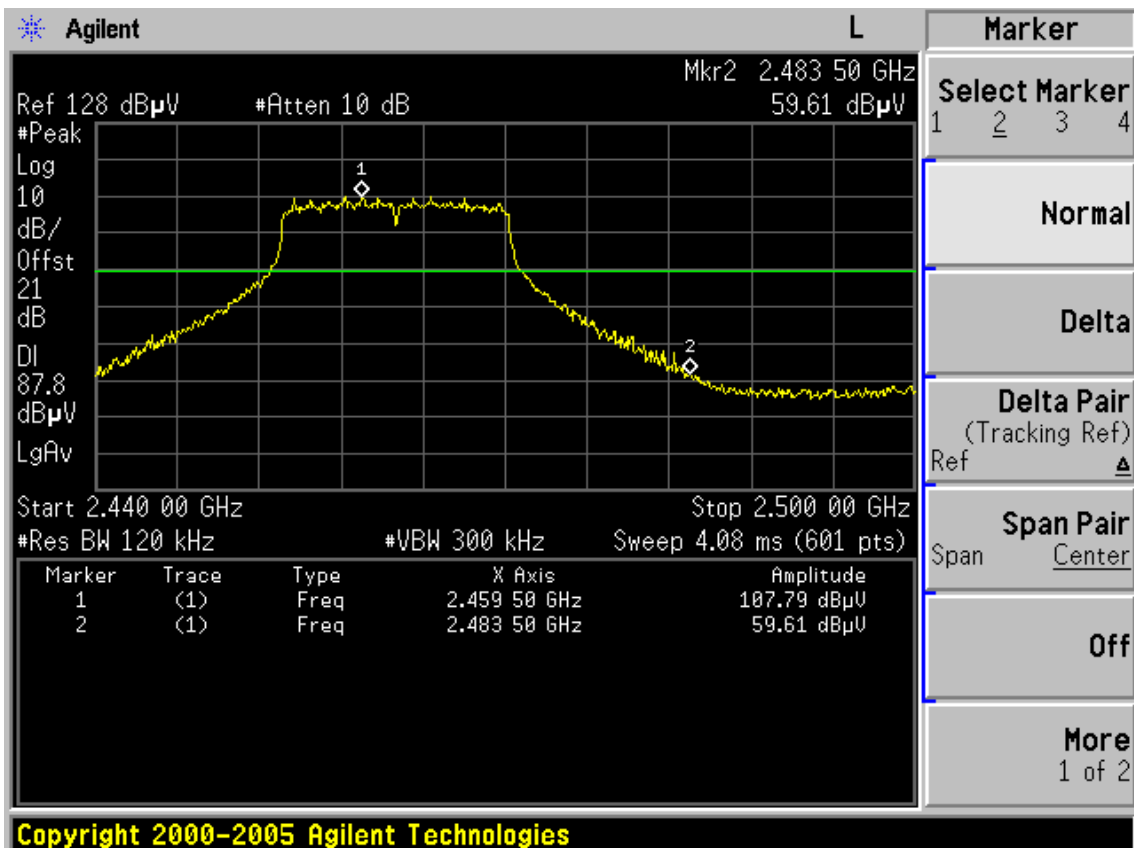
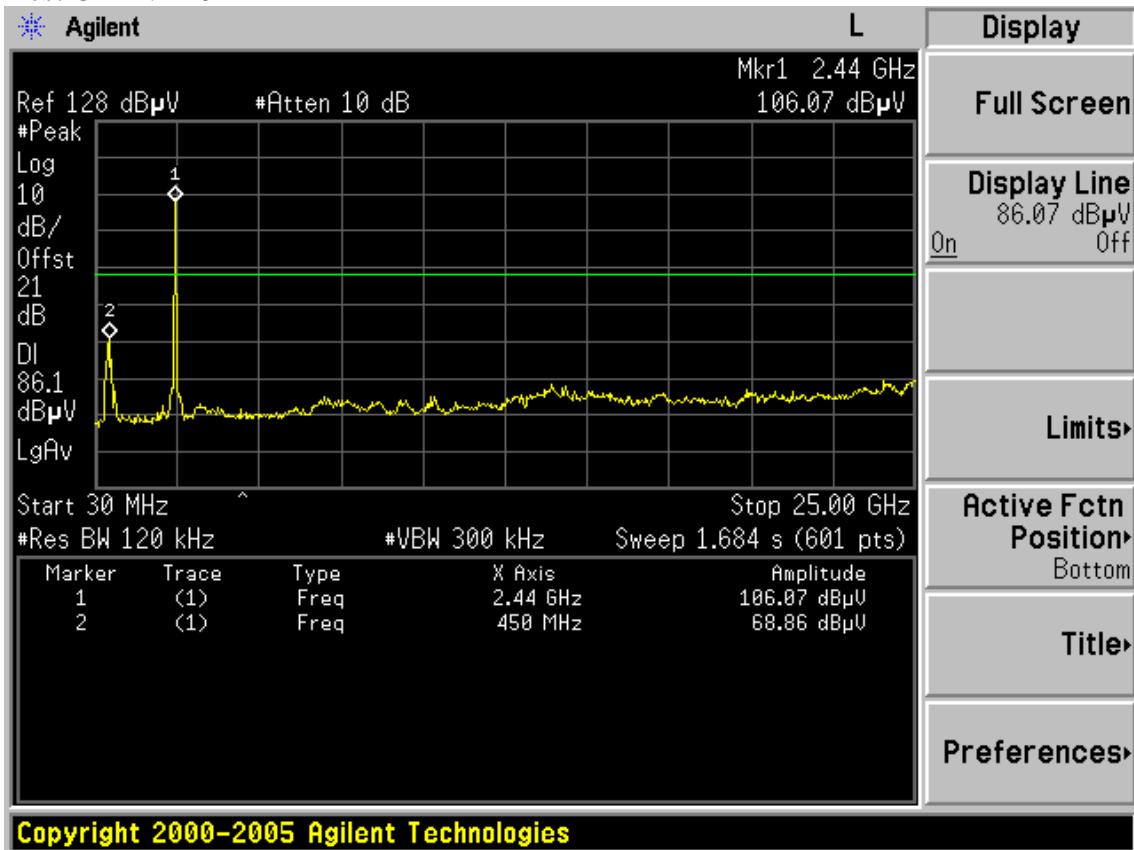
Test CH1: 2412MHz



Test CH6: 2437MHz

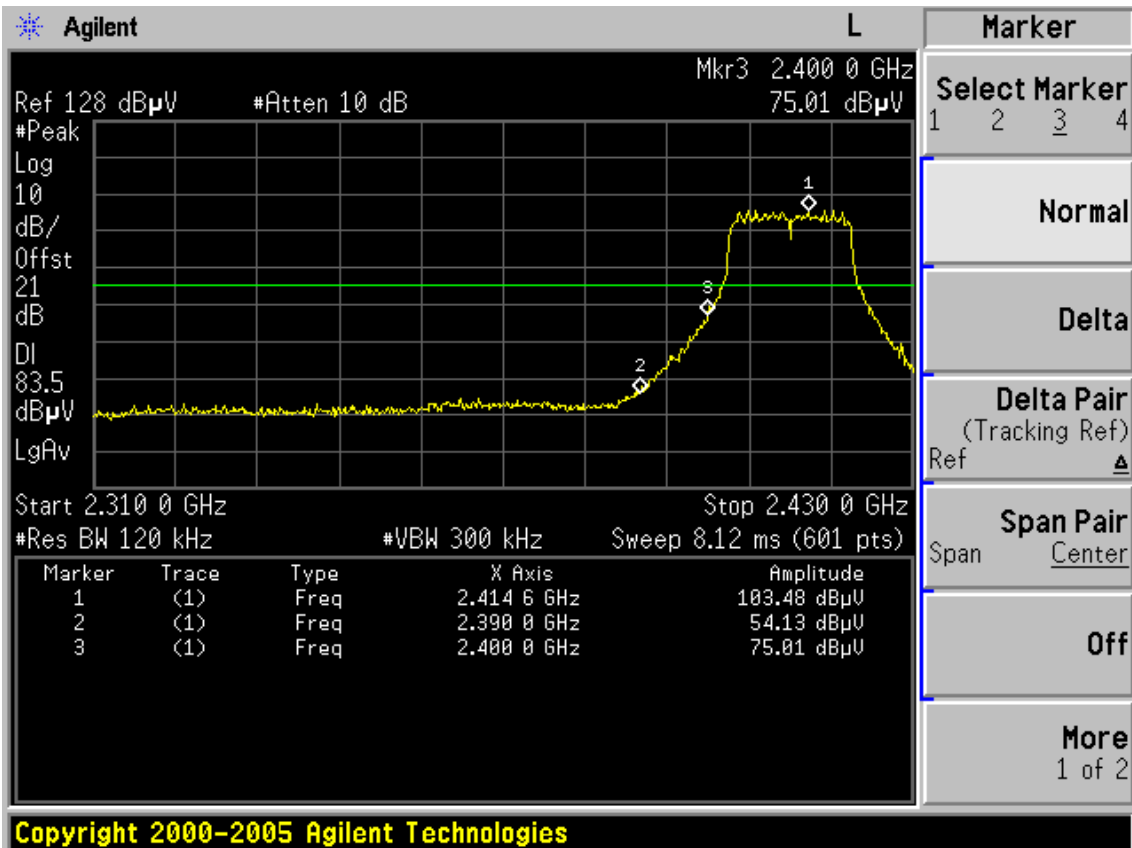
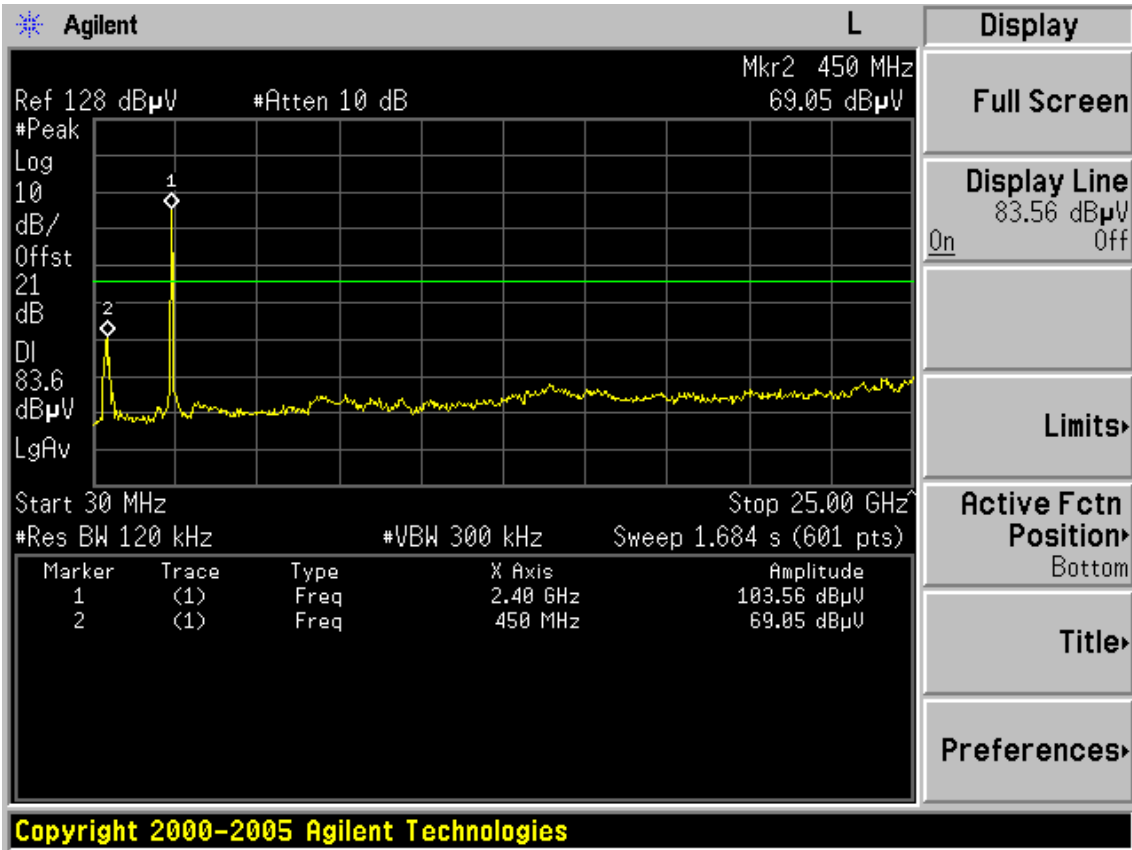


Test CH11: 2462MHz

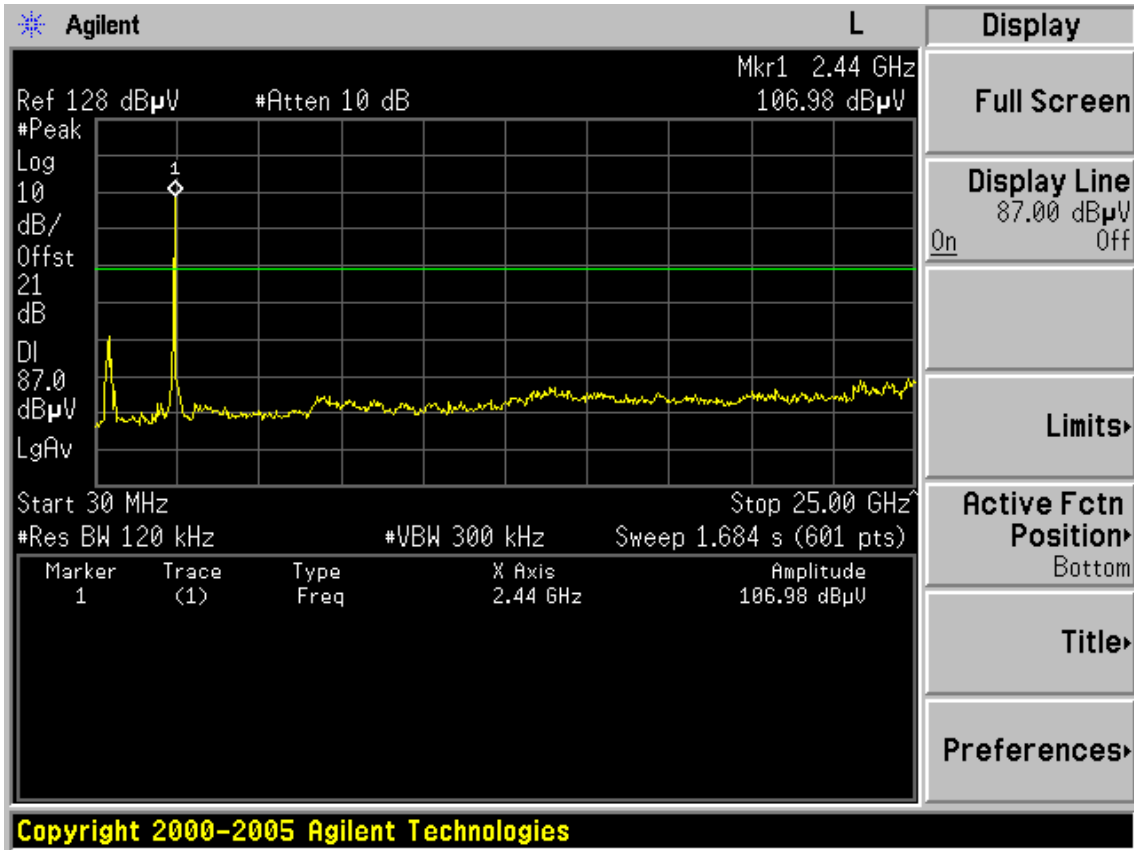


Test Mode: IEEE 802.11n HT20 TX

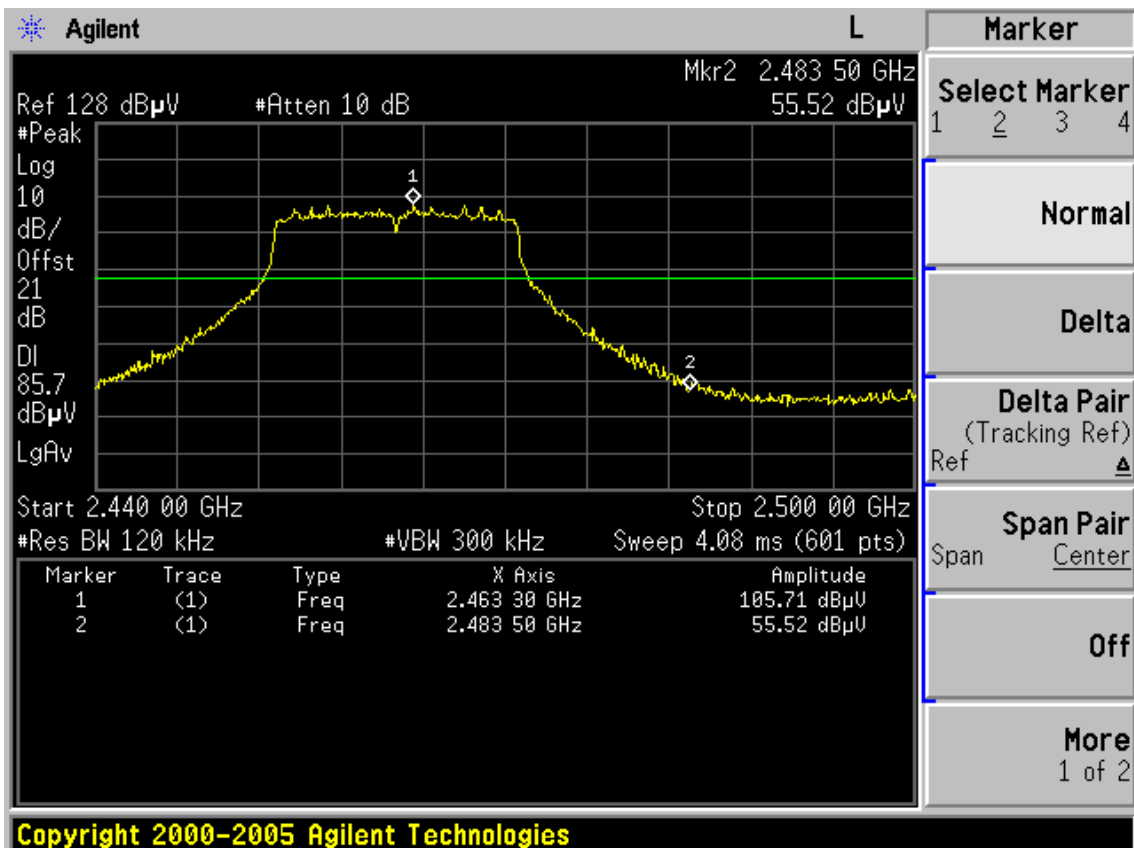
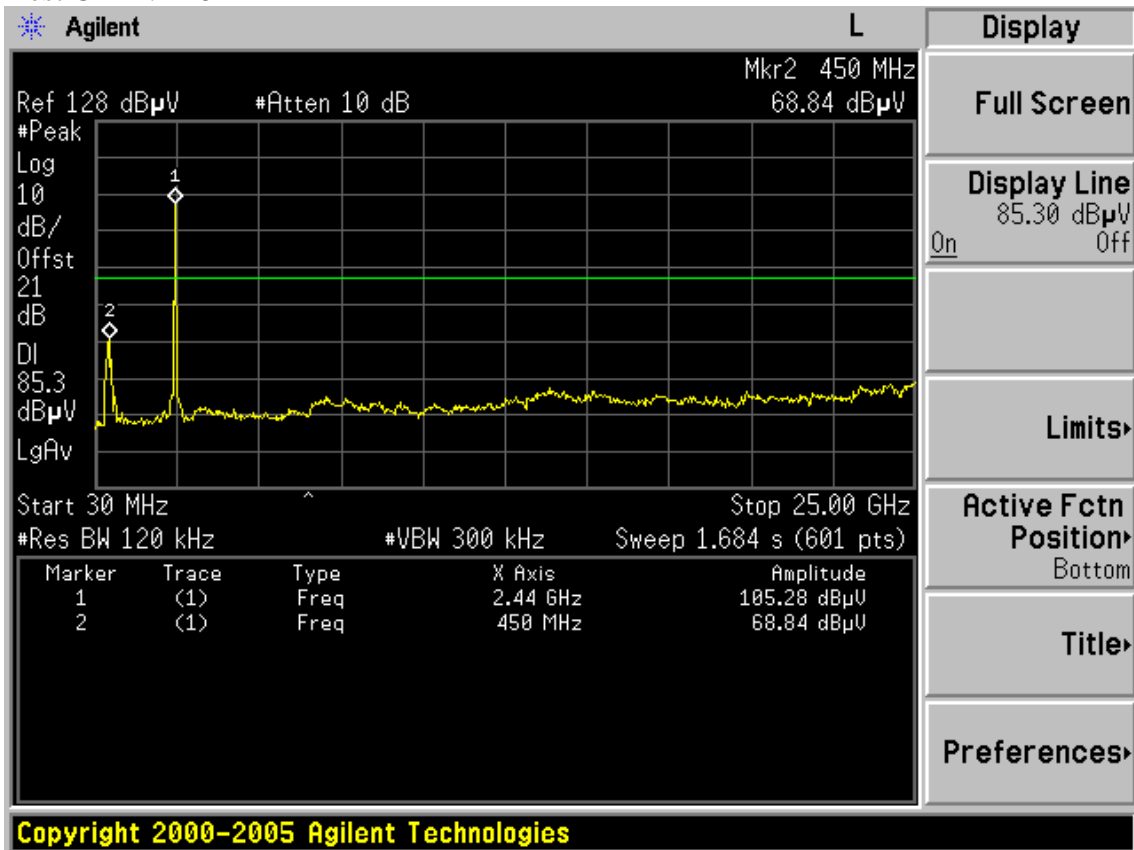
Test CH1: 2412MHz



Test CH6: 2437MHz

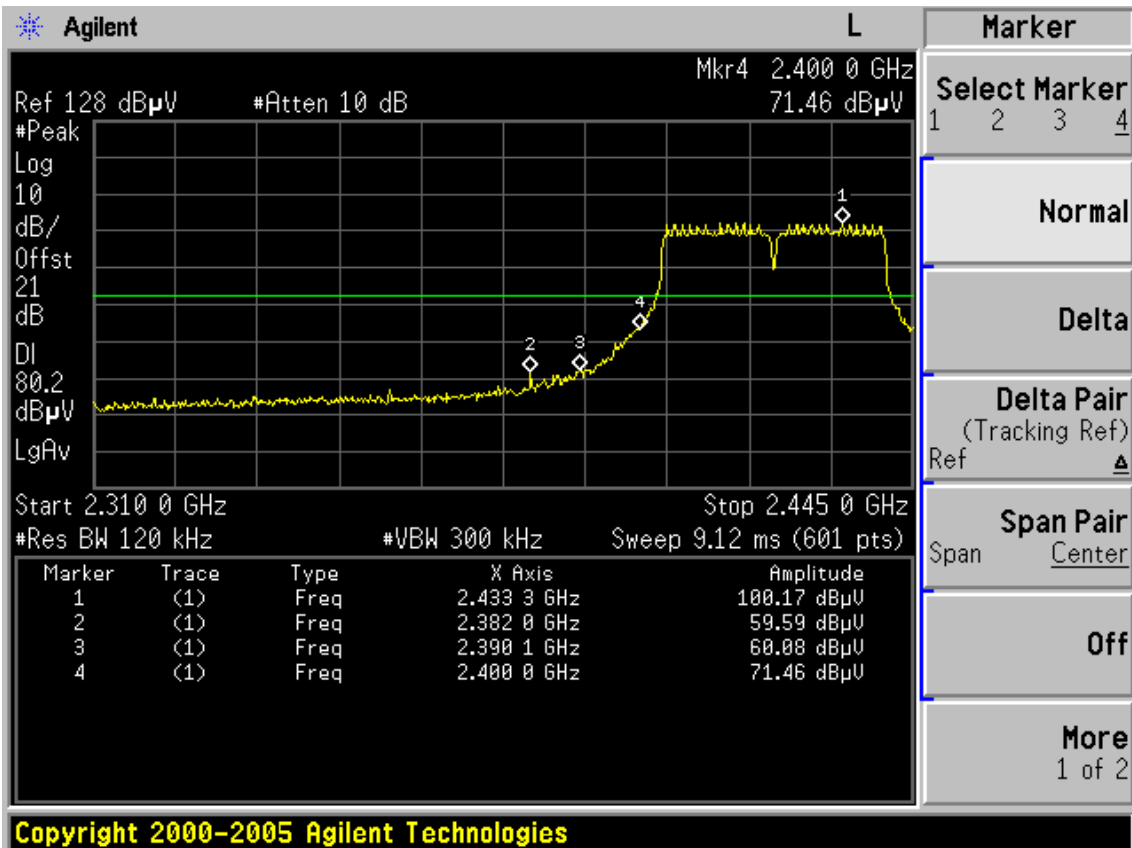
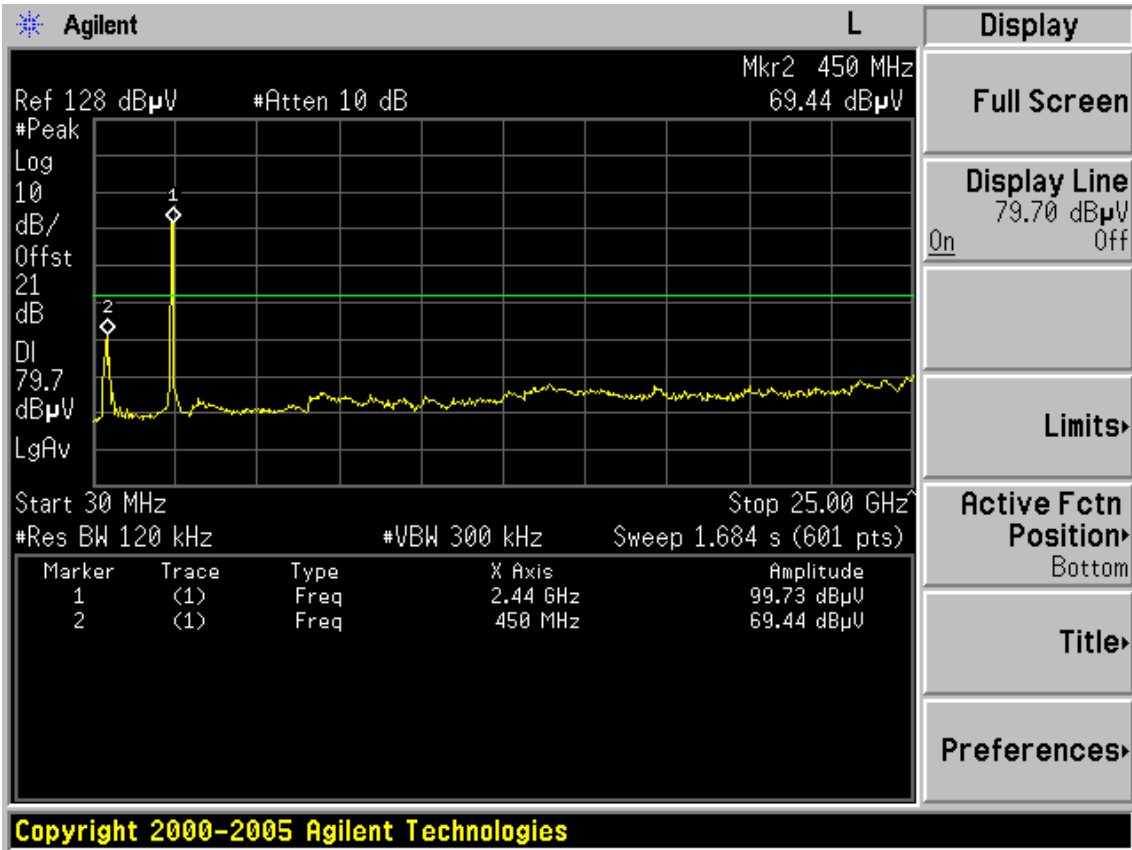


Test CH11: 2462MHz

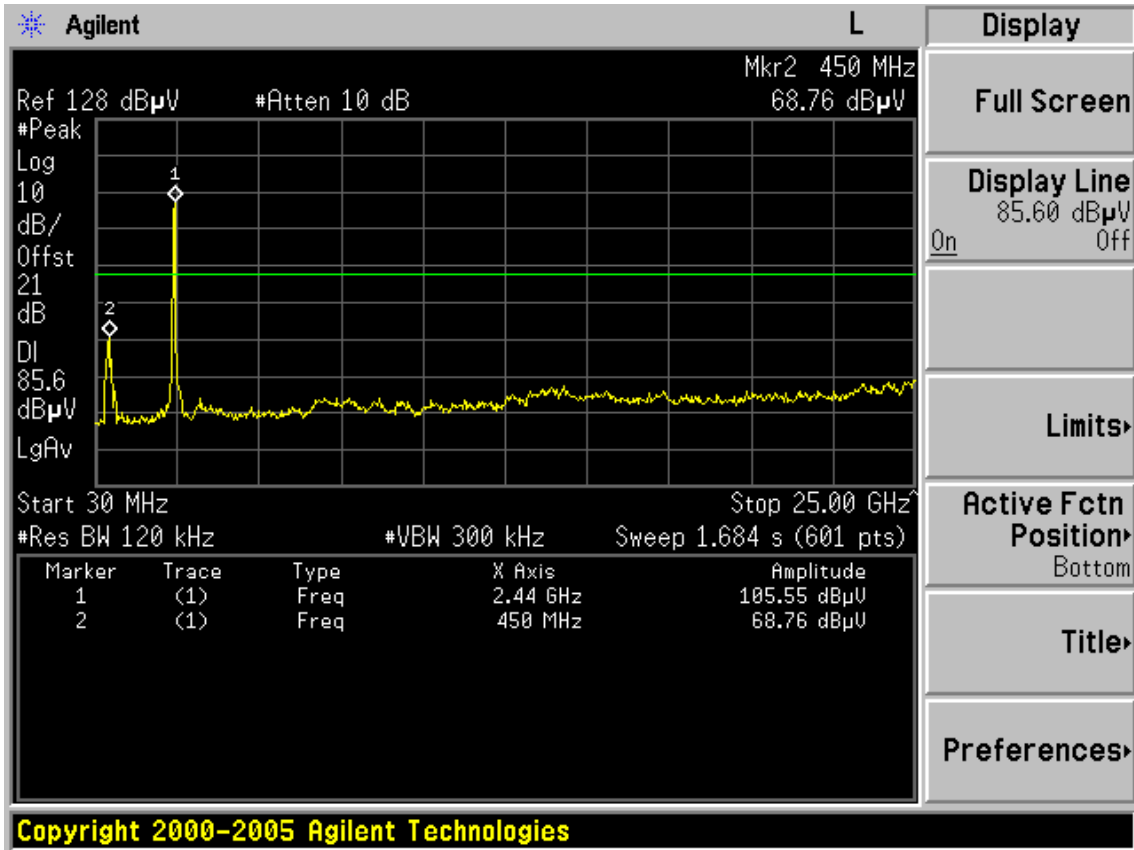


Test Mode: IEEE 802.11n HT40 TX

Test CH1: 2422MHz

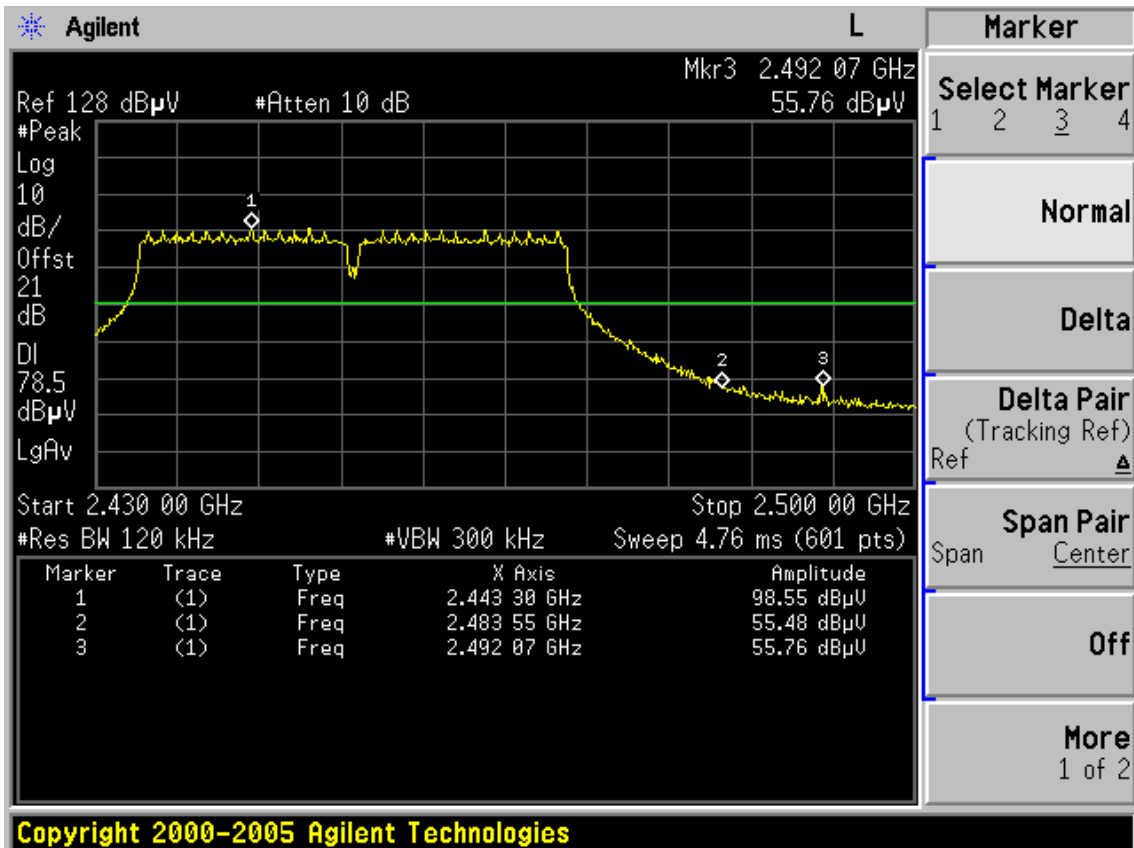
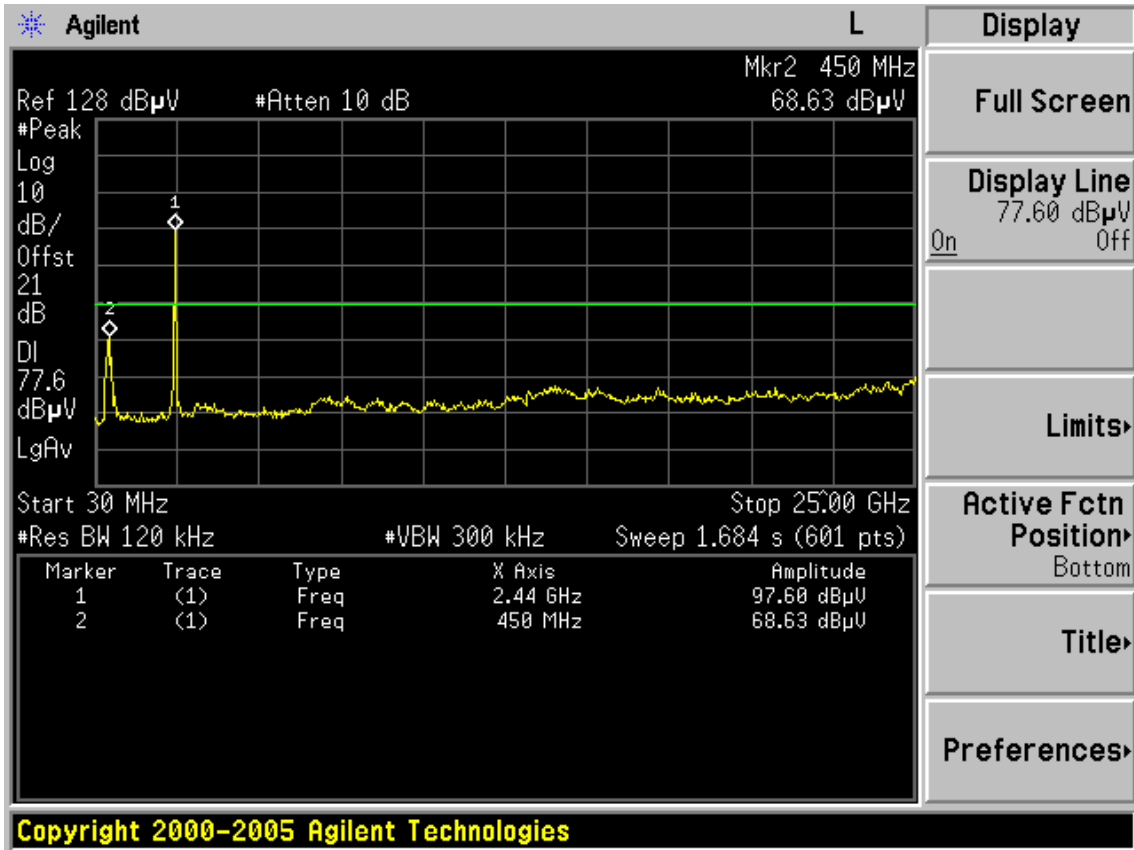


Test CH4: 2437MHz





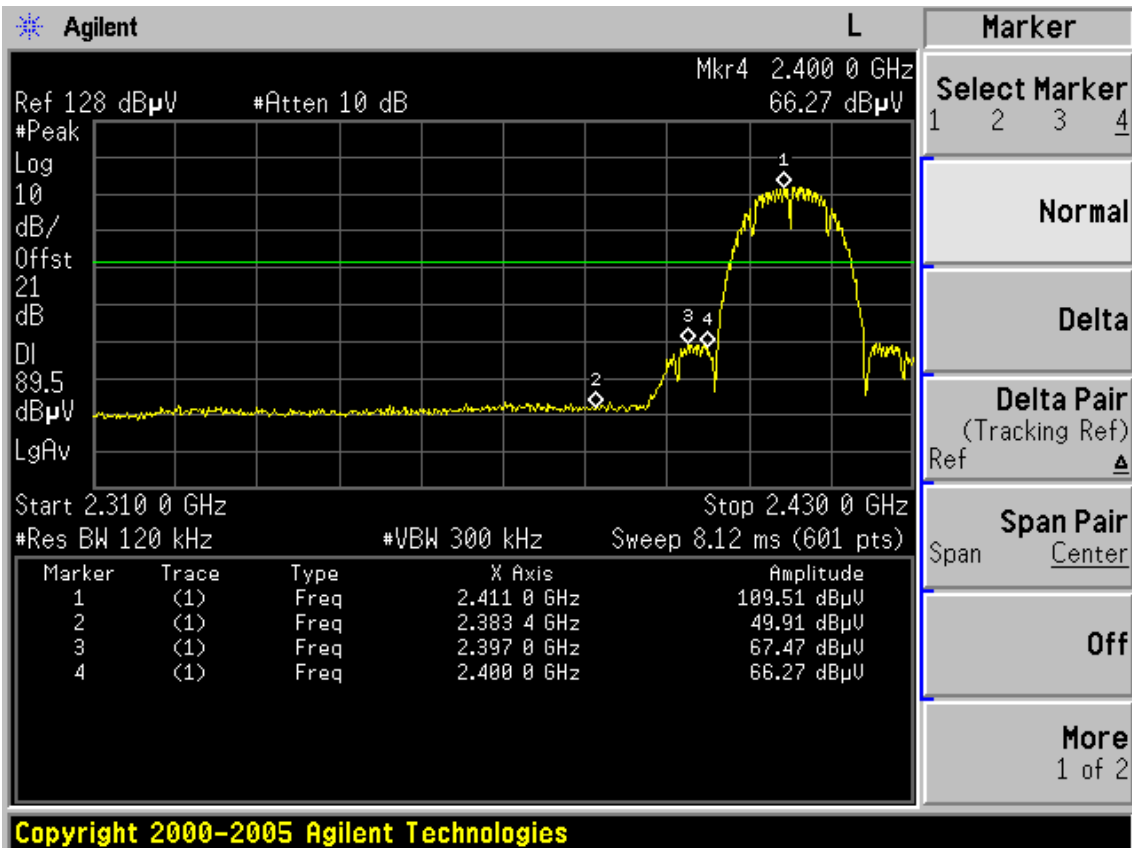
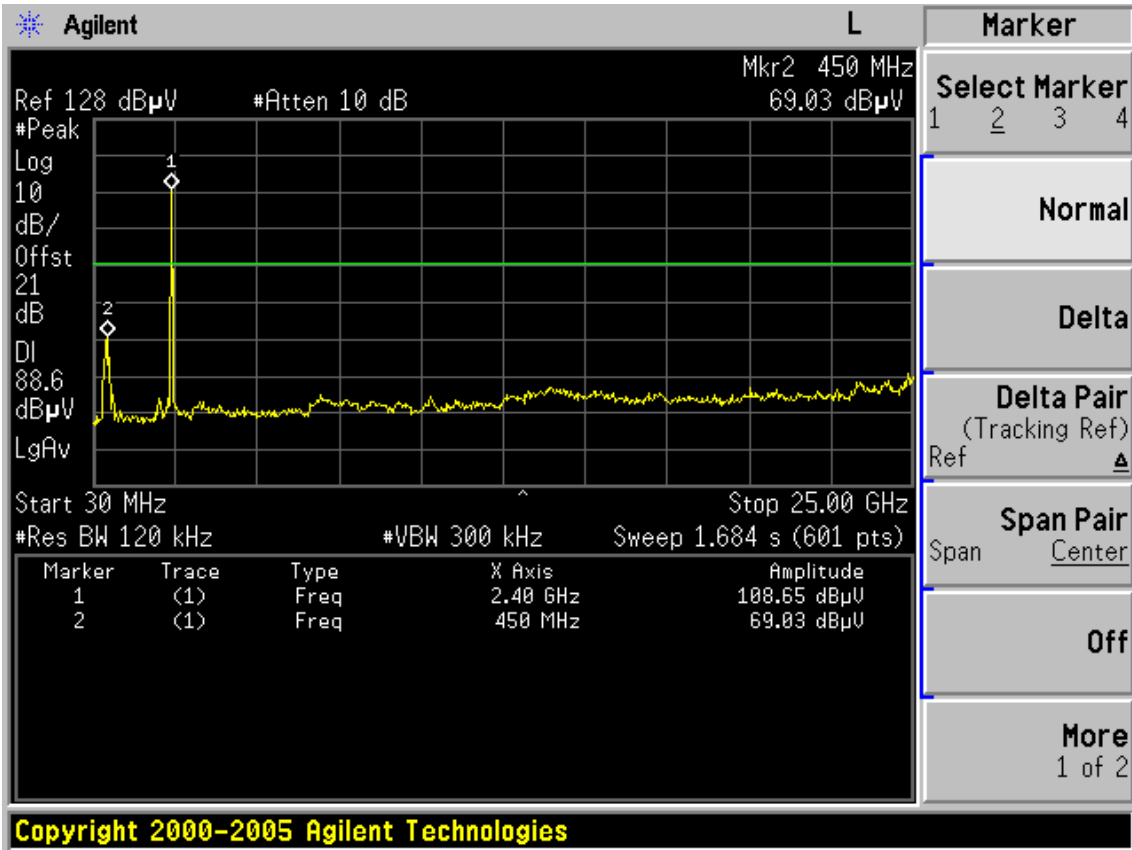
Test CH7: 2452MHz



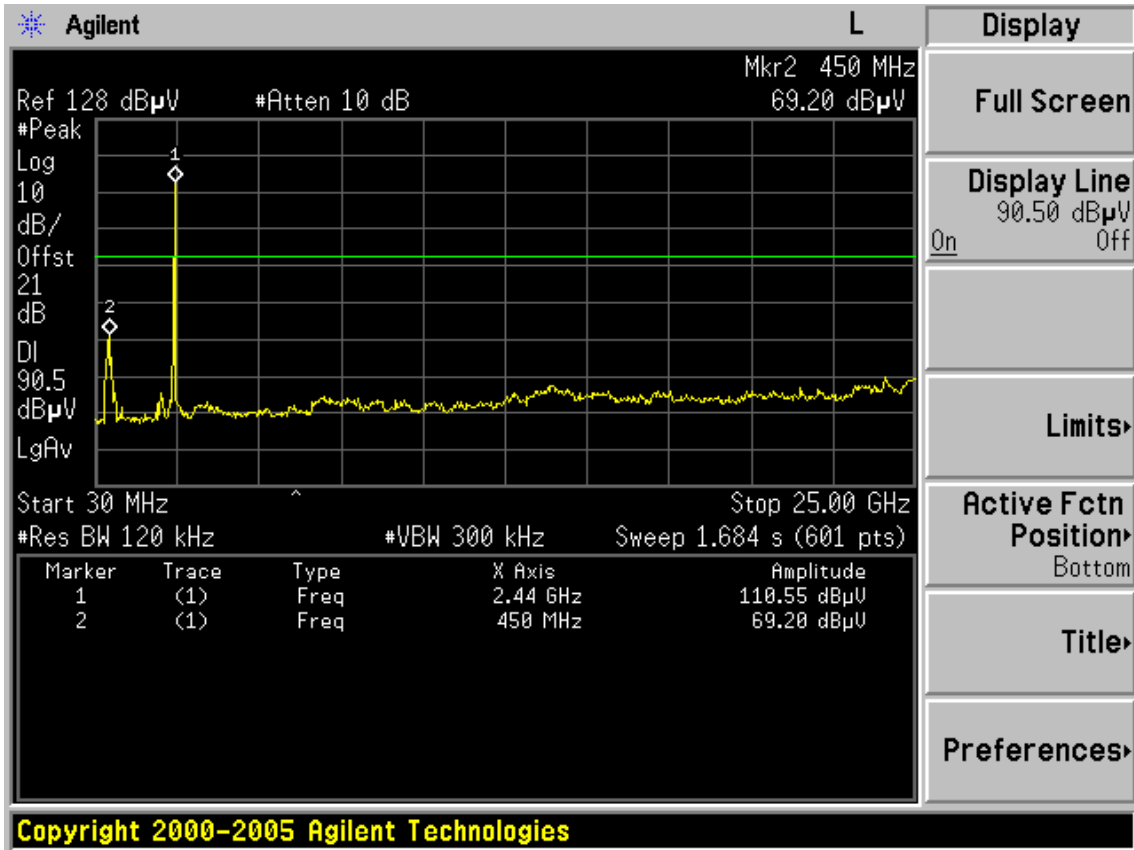
**Chain 2:**

Test Mode: IEEE 802.11b TX

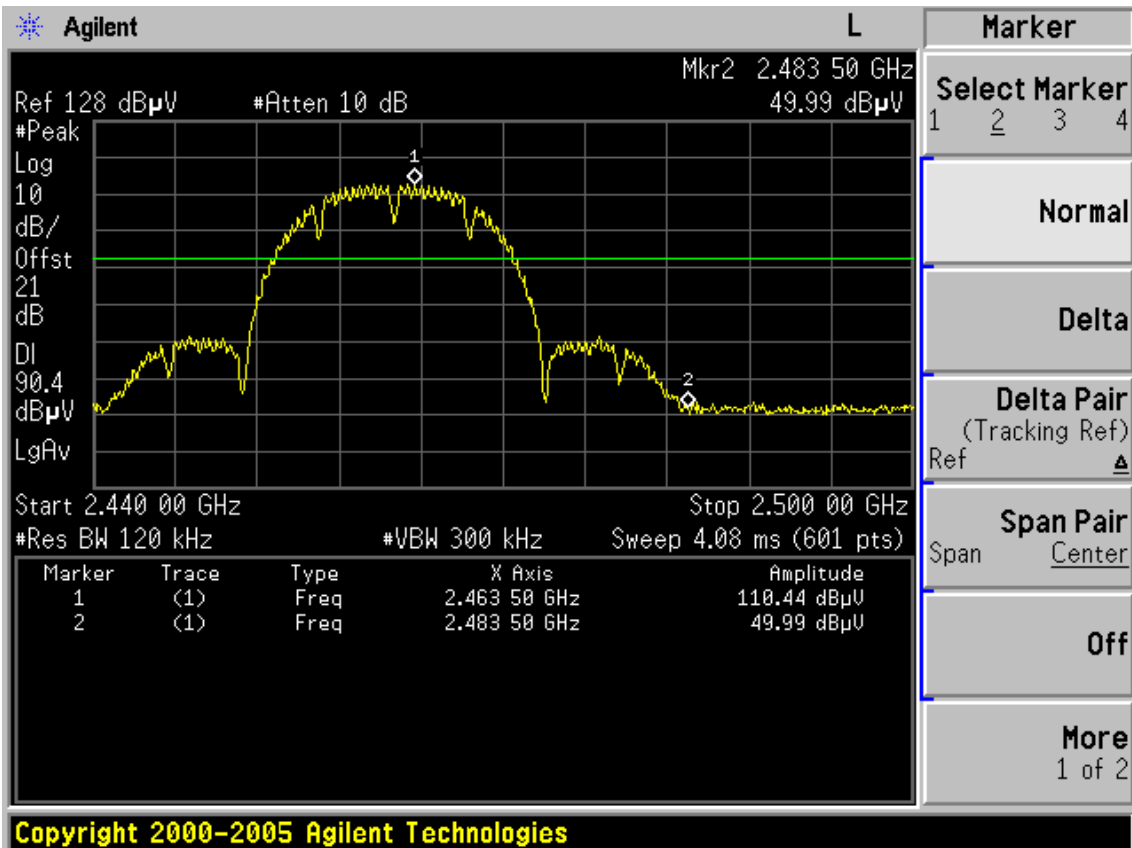
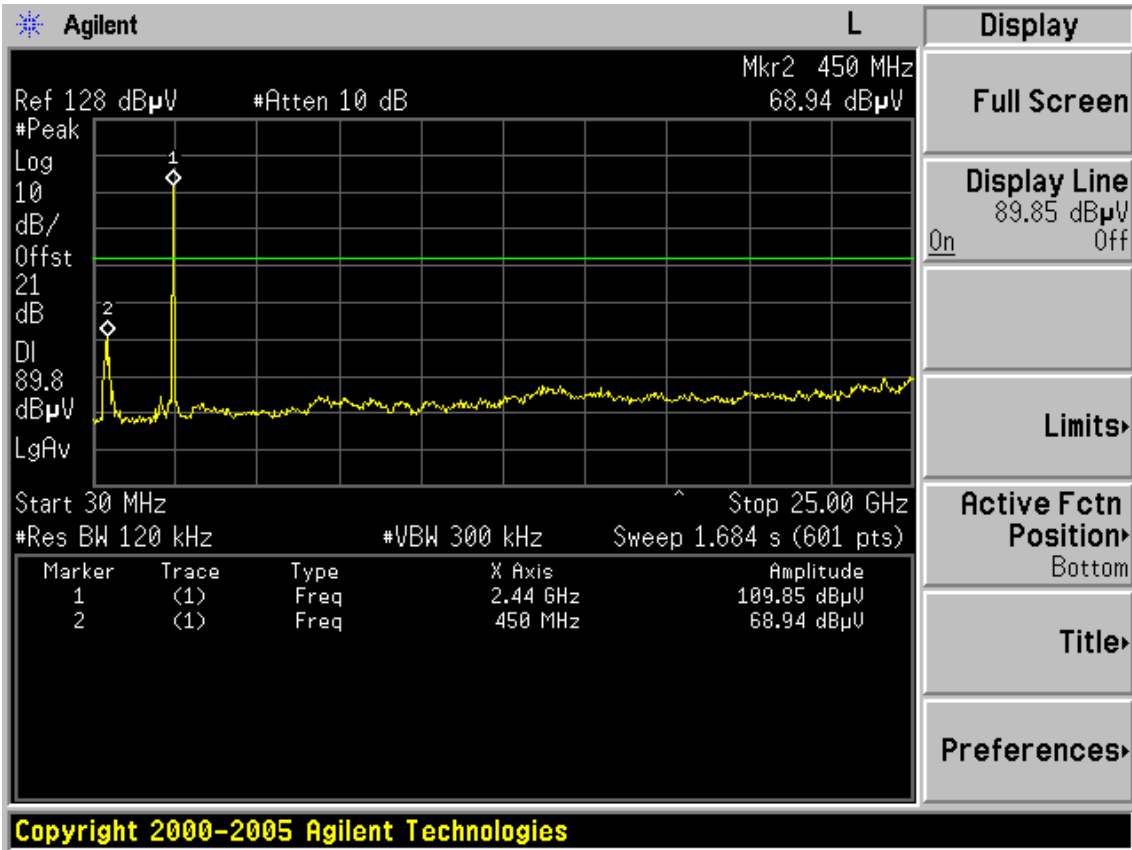
Test CH1: 2412MHz



Test CH6: 2437MHz

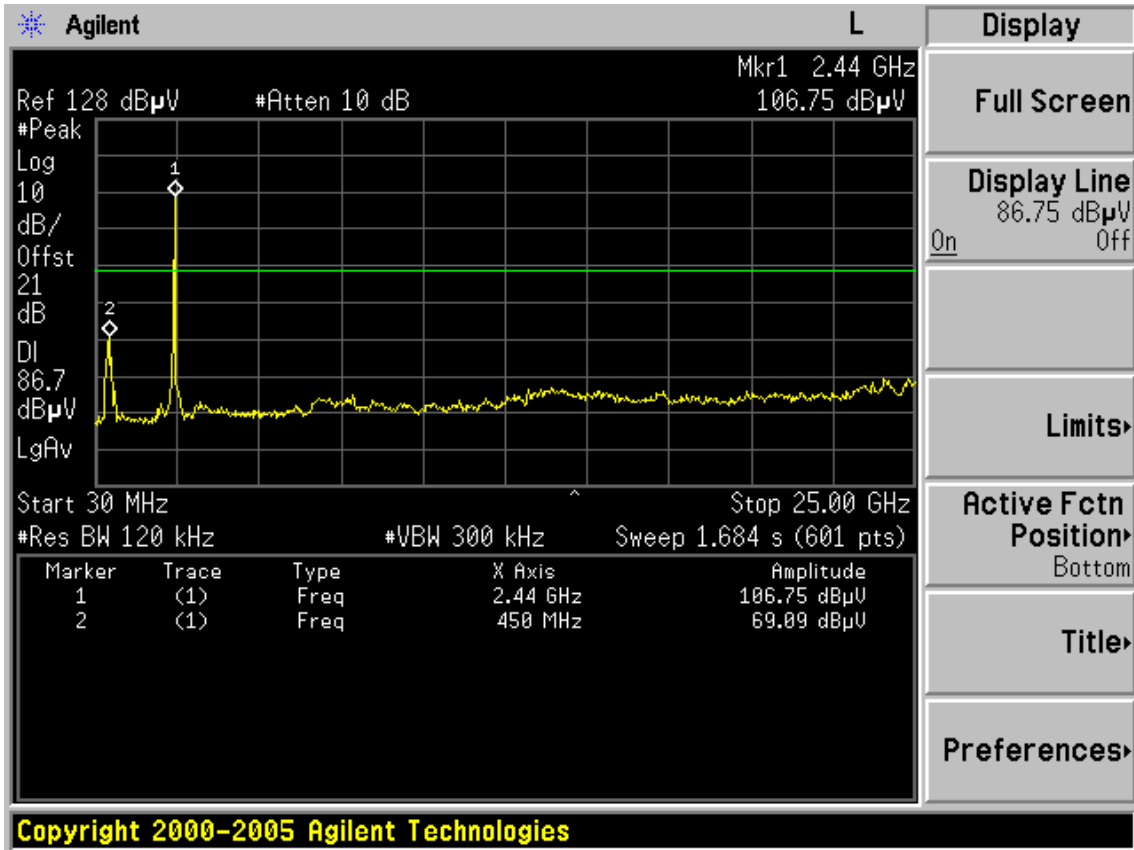


Test CH11: 2462MHz

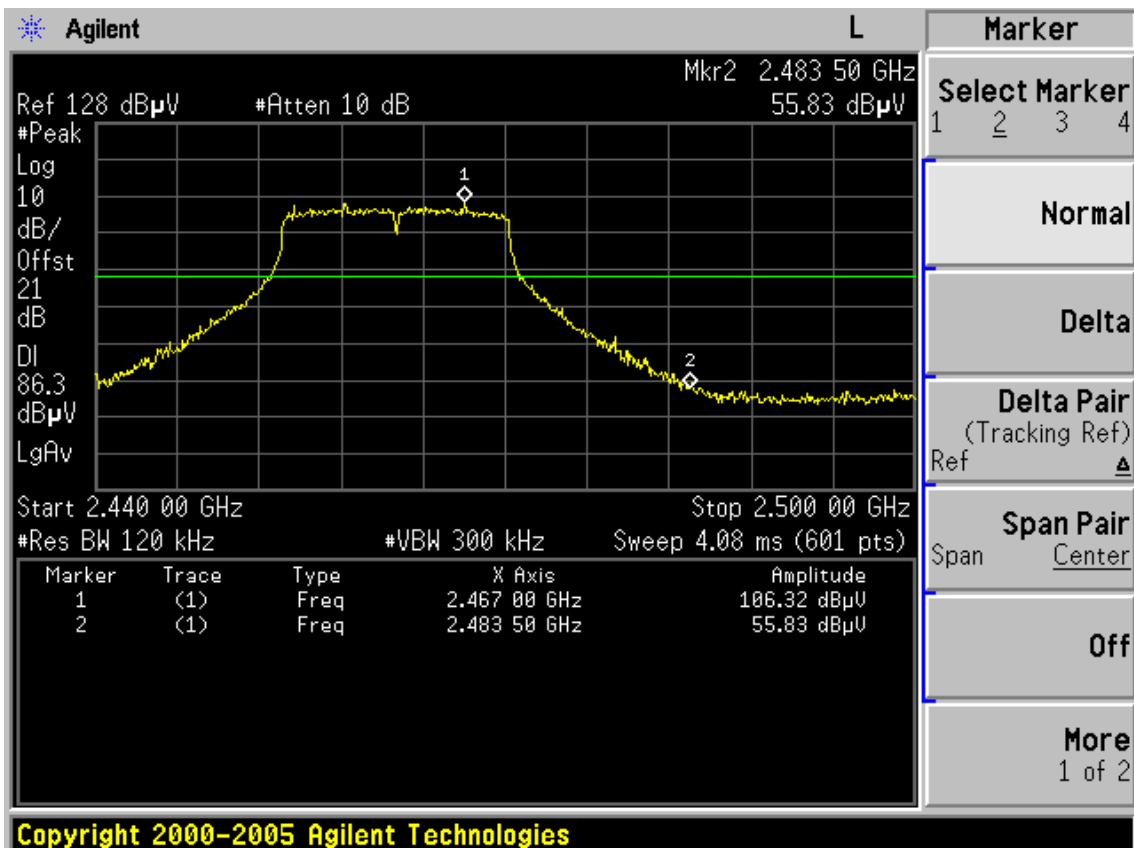
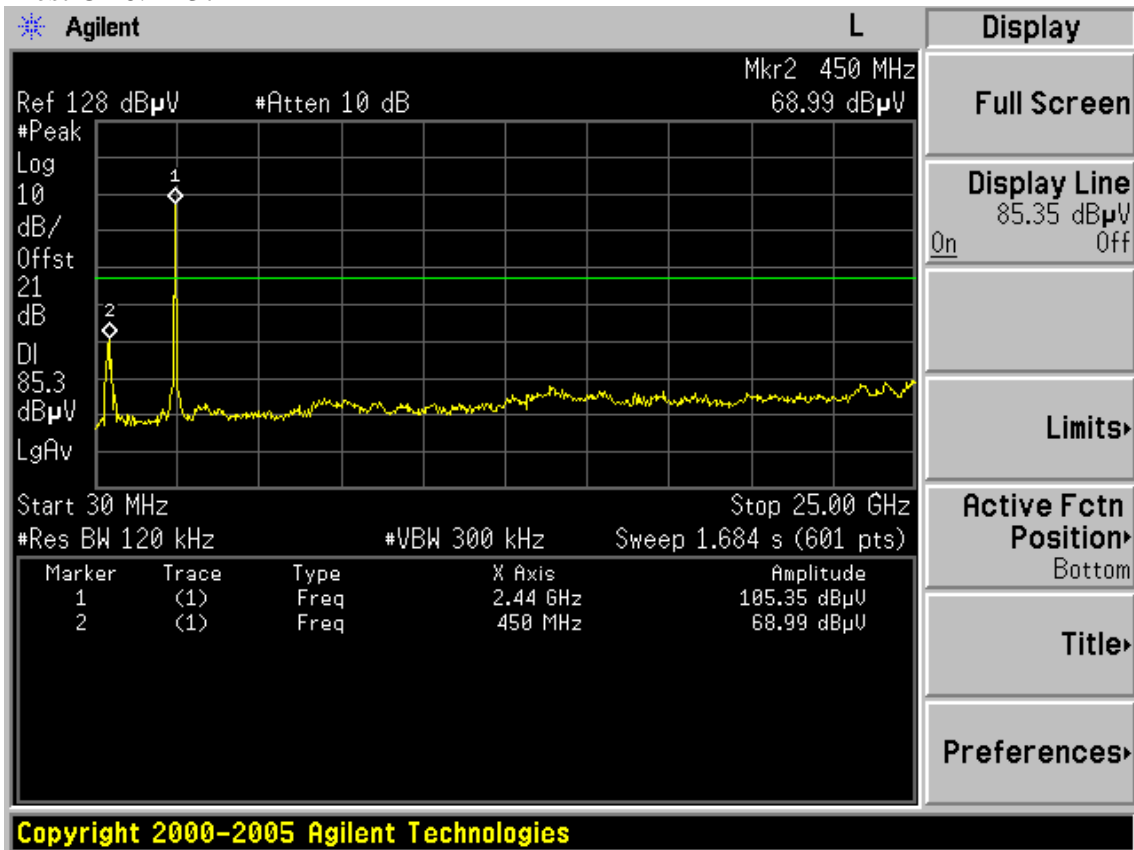


Test Mode: IEEE 802.11g TX

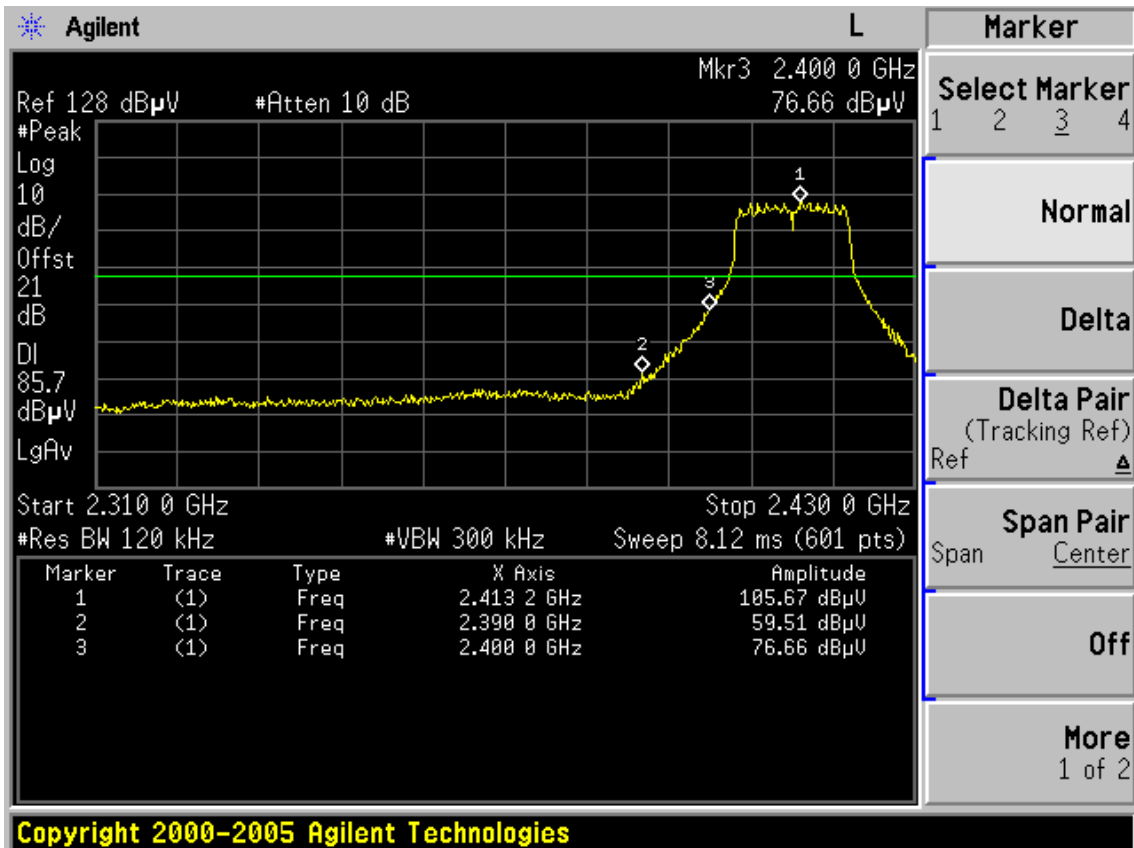
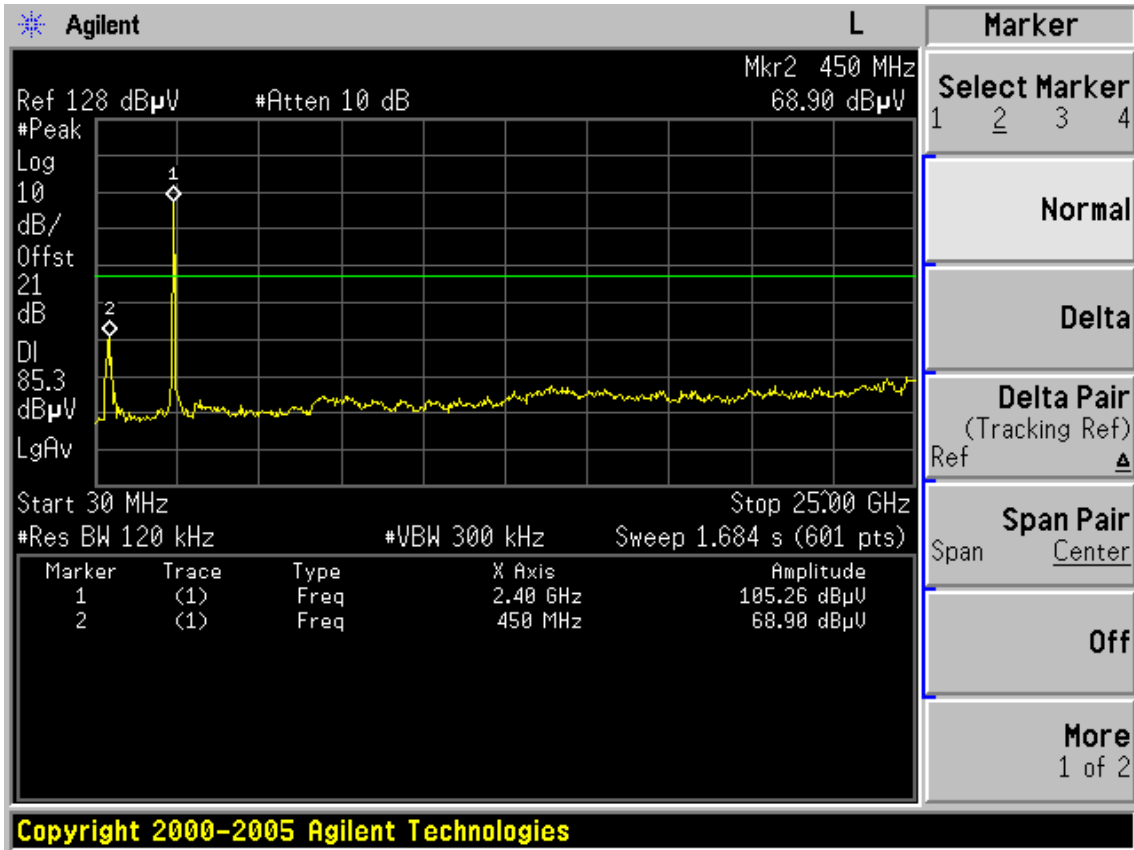
Test CH1: 2412MHz



Test CH6: 2437MHz

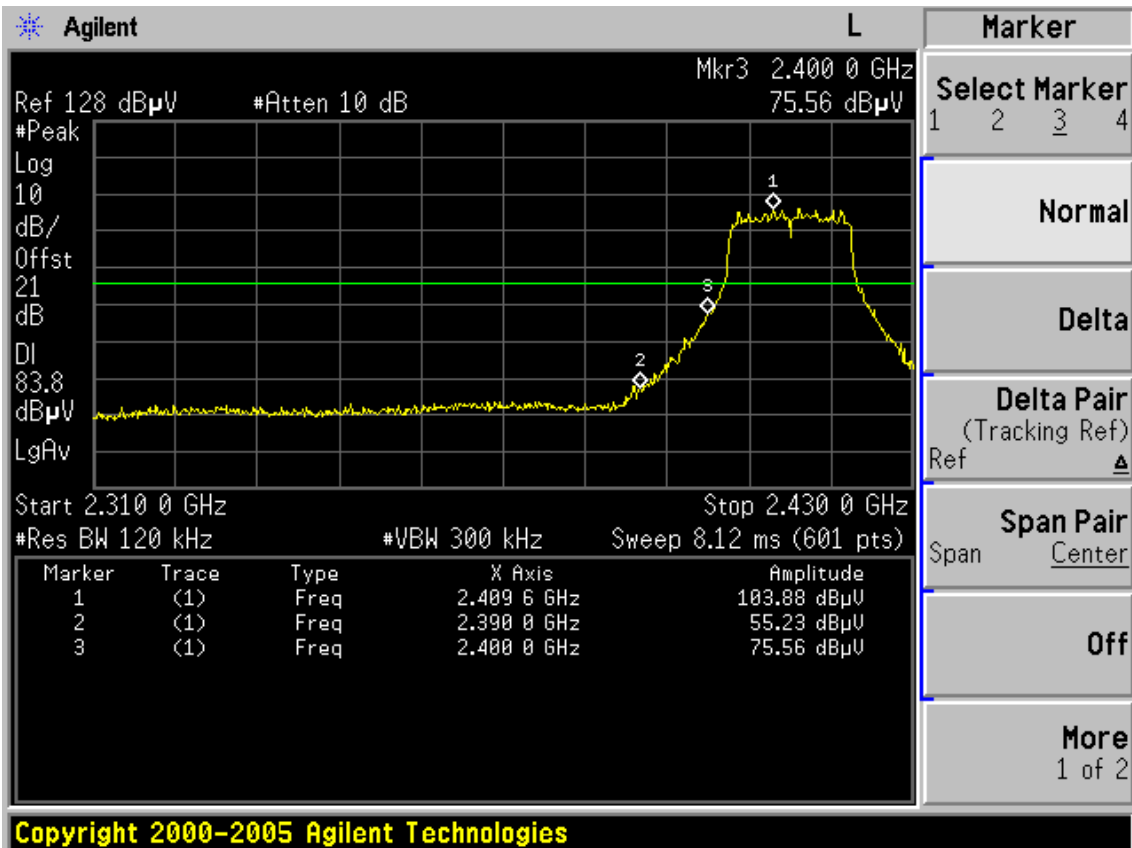
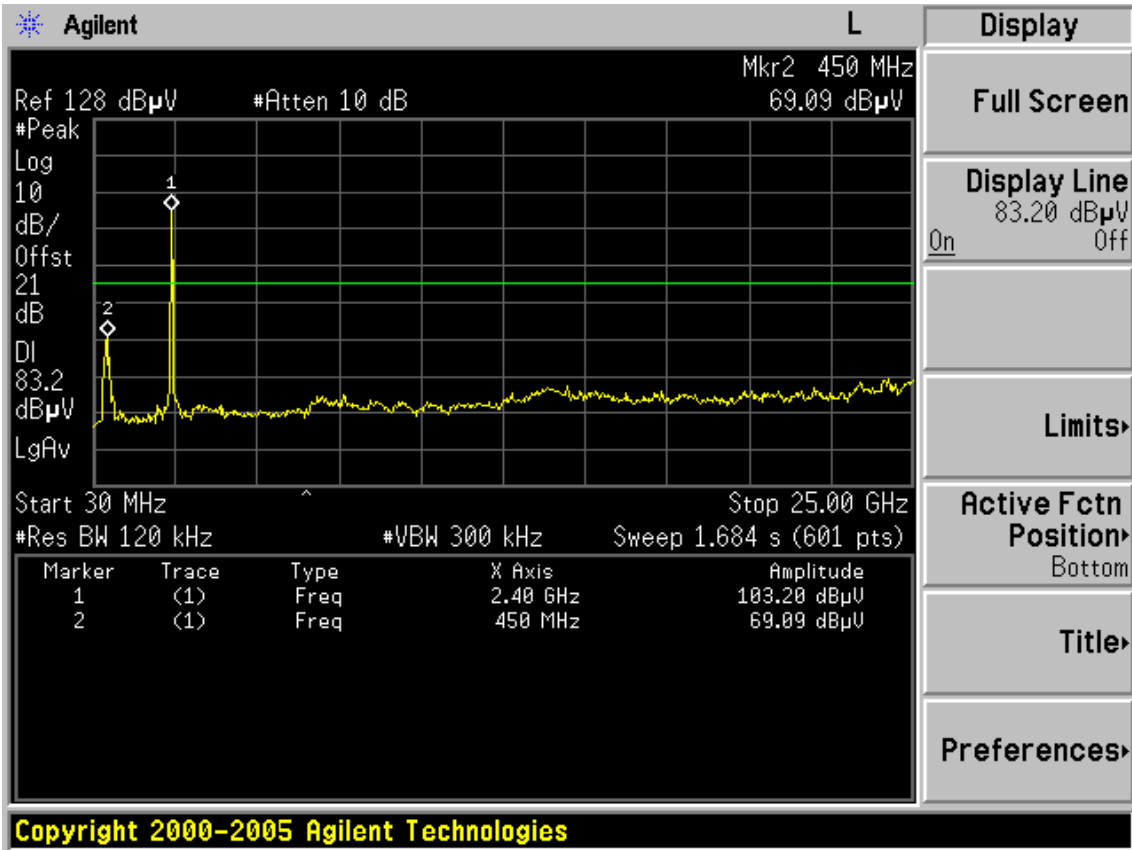


Test CH11: 2462MHz



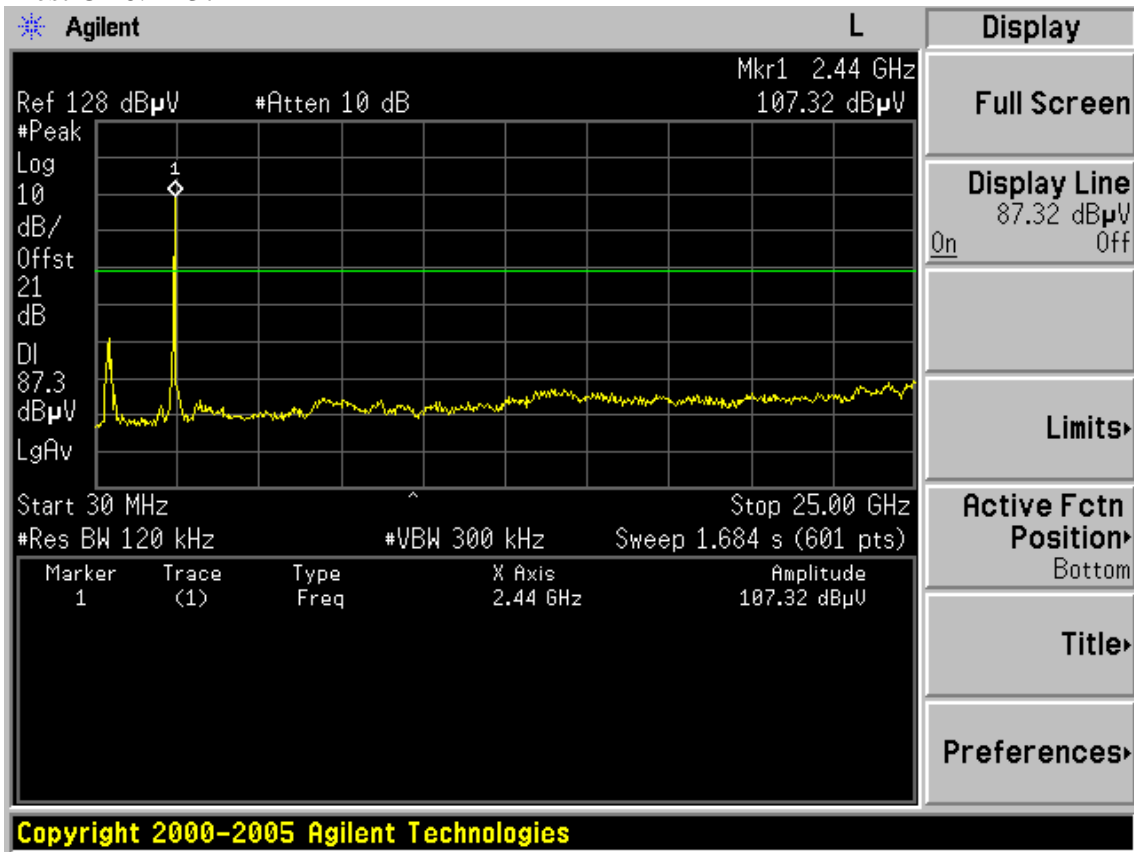
Test Mode: IEEE 802.11n HT20 TX

Test CH1: 2412MHz

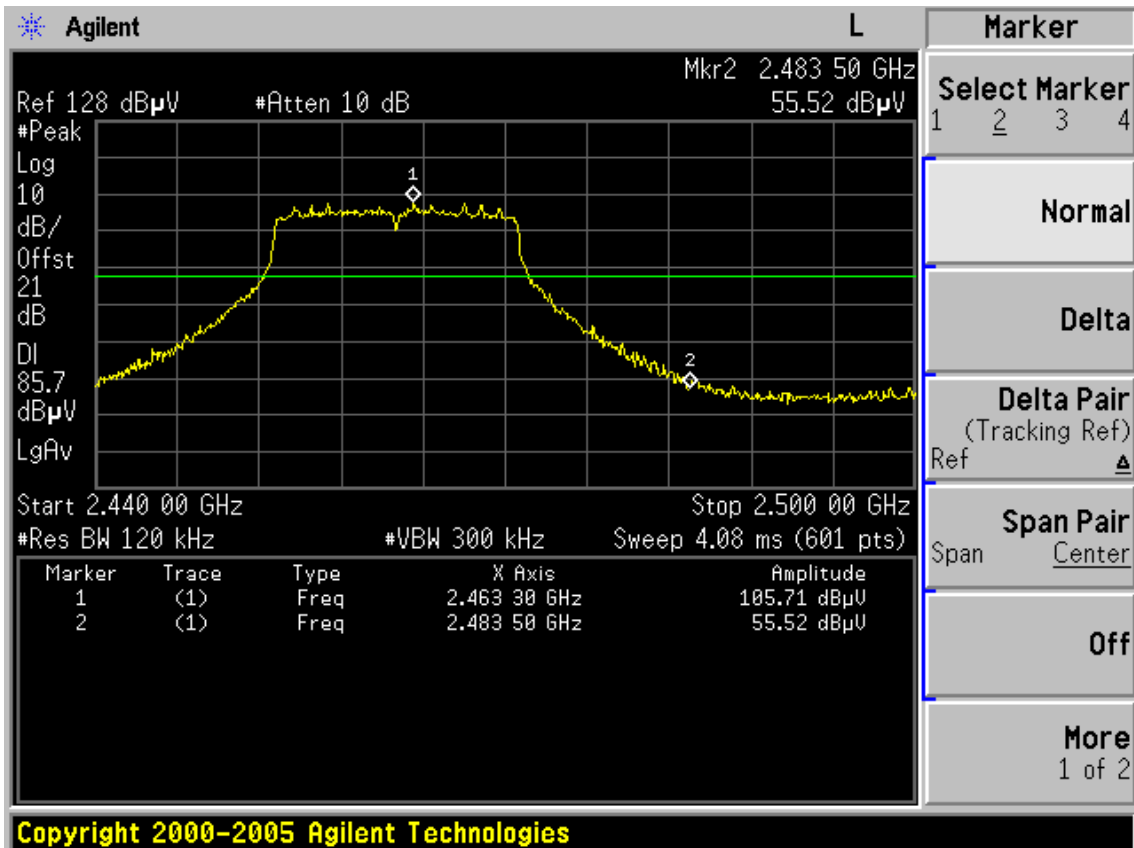
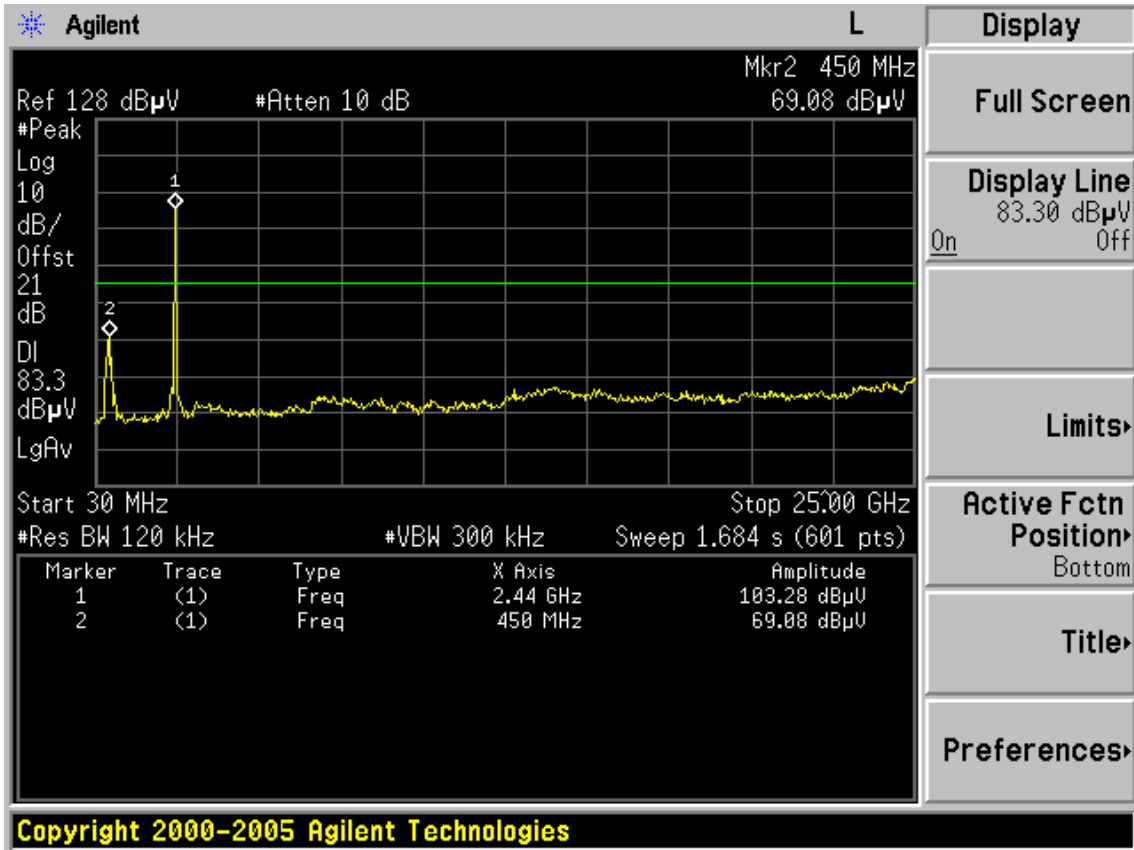




Test CH6: 2437MHz

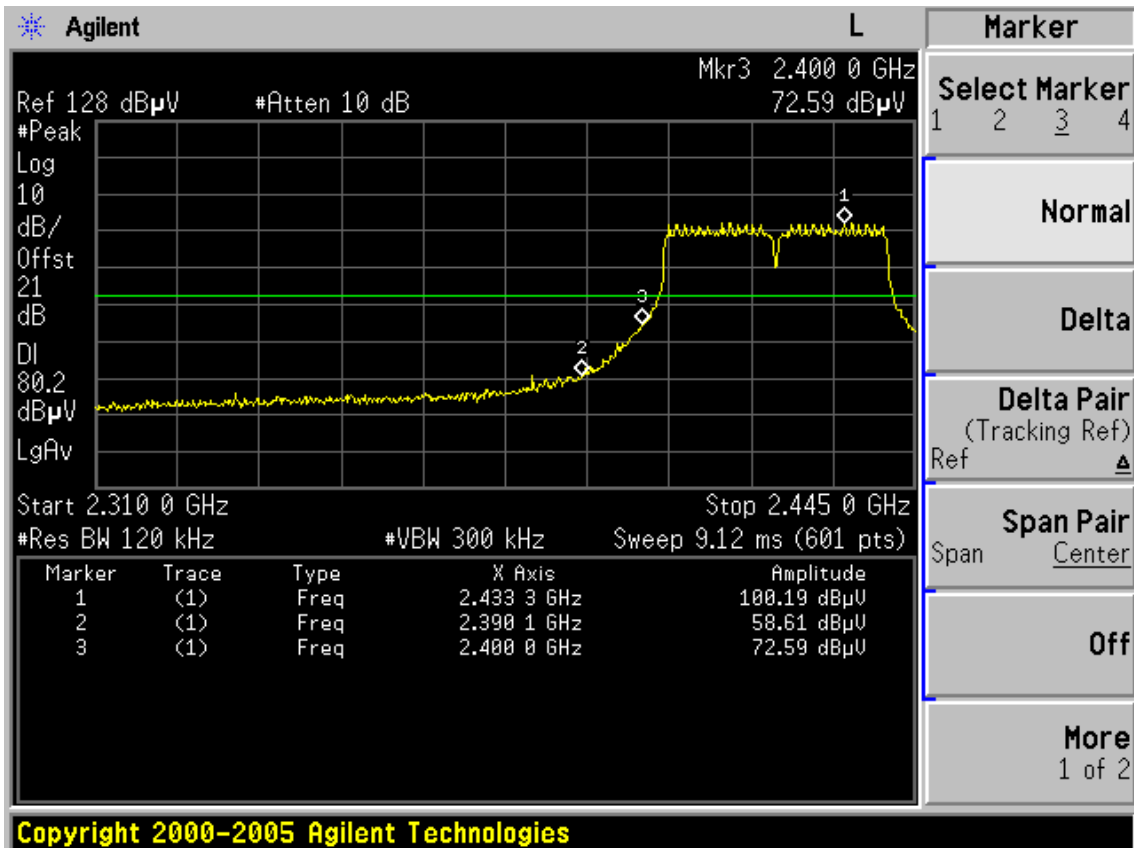
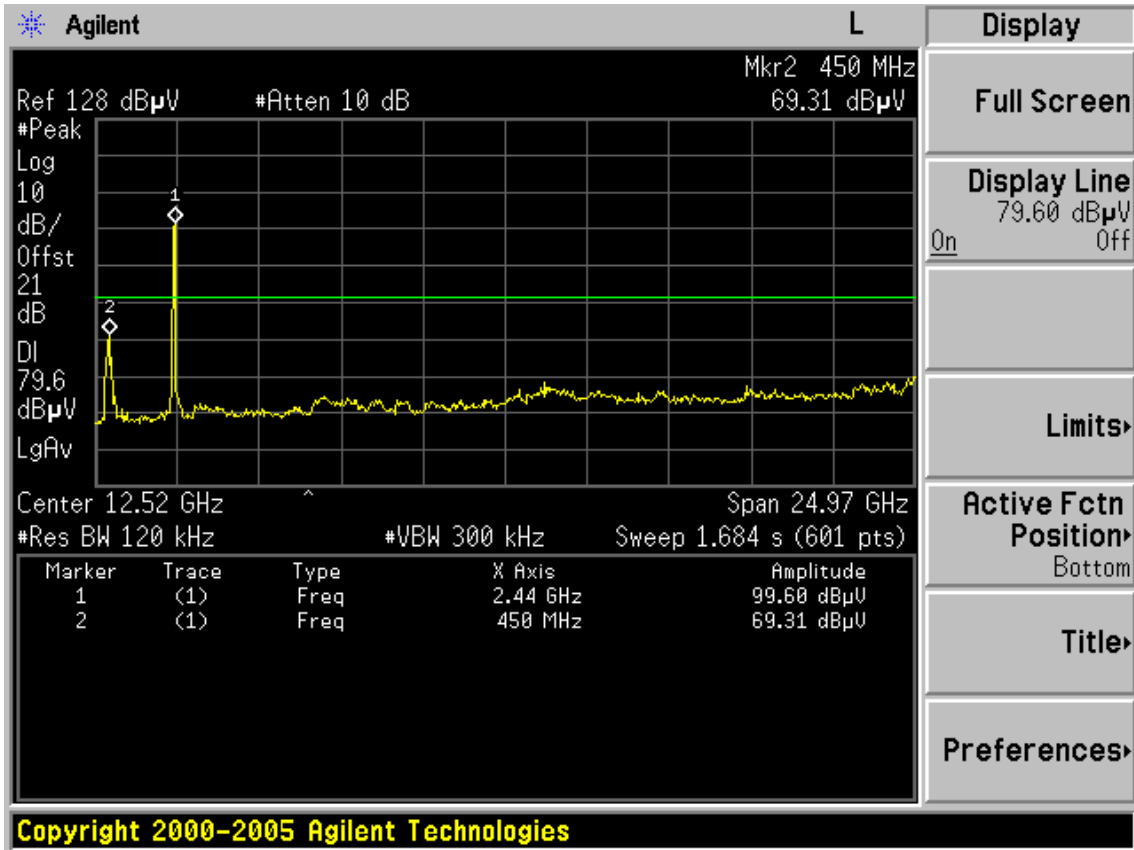


Test CH11: 2462MHz

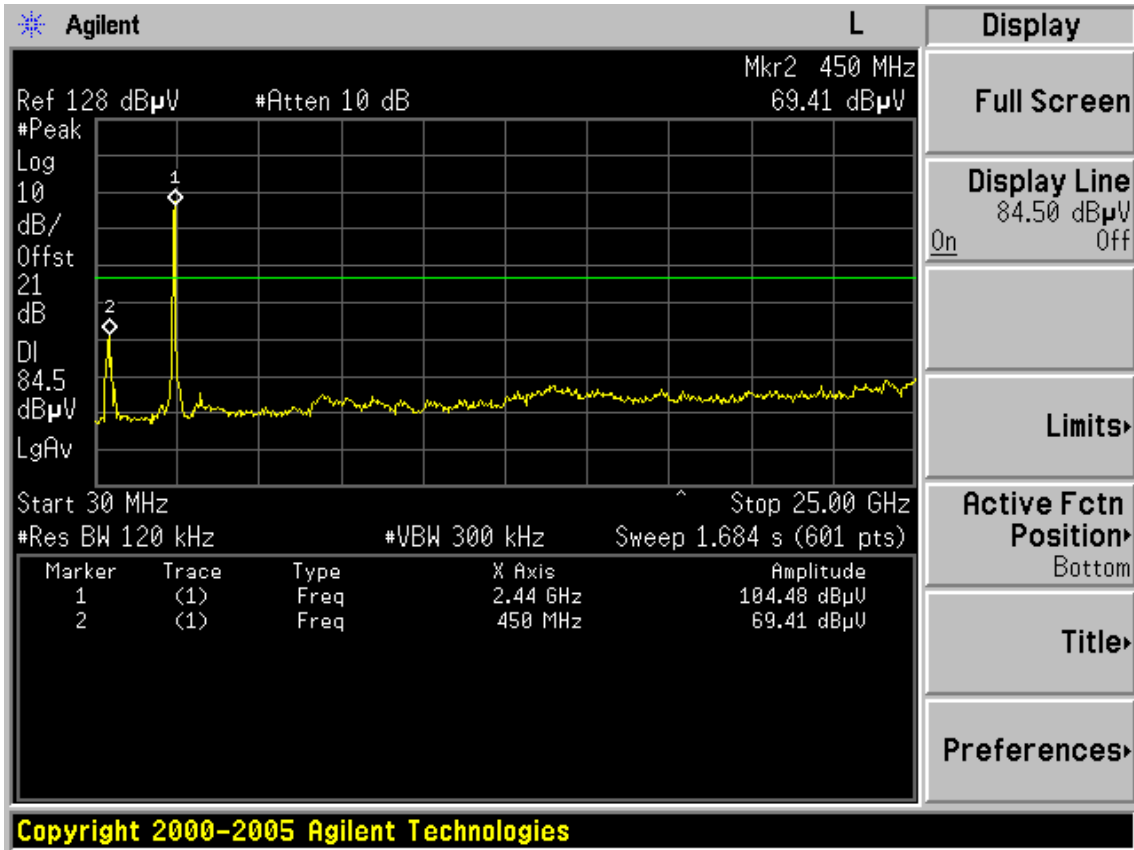


Test Mode: IEEE 802.11n HT40 TX

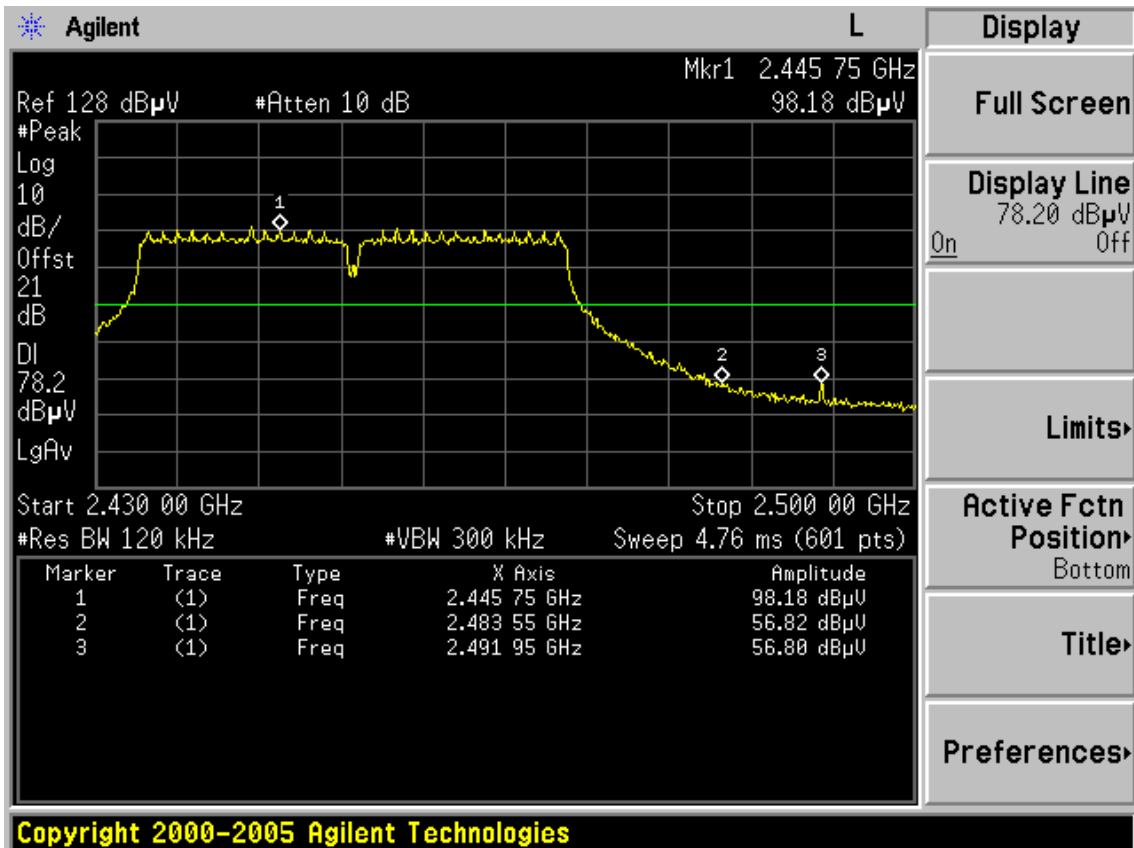
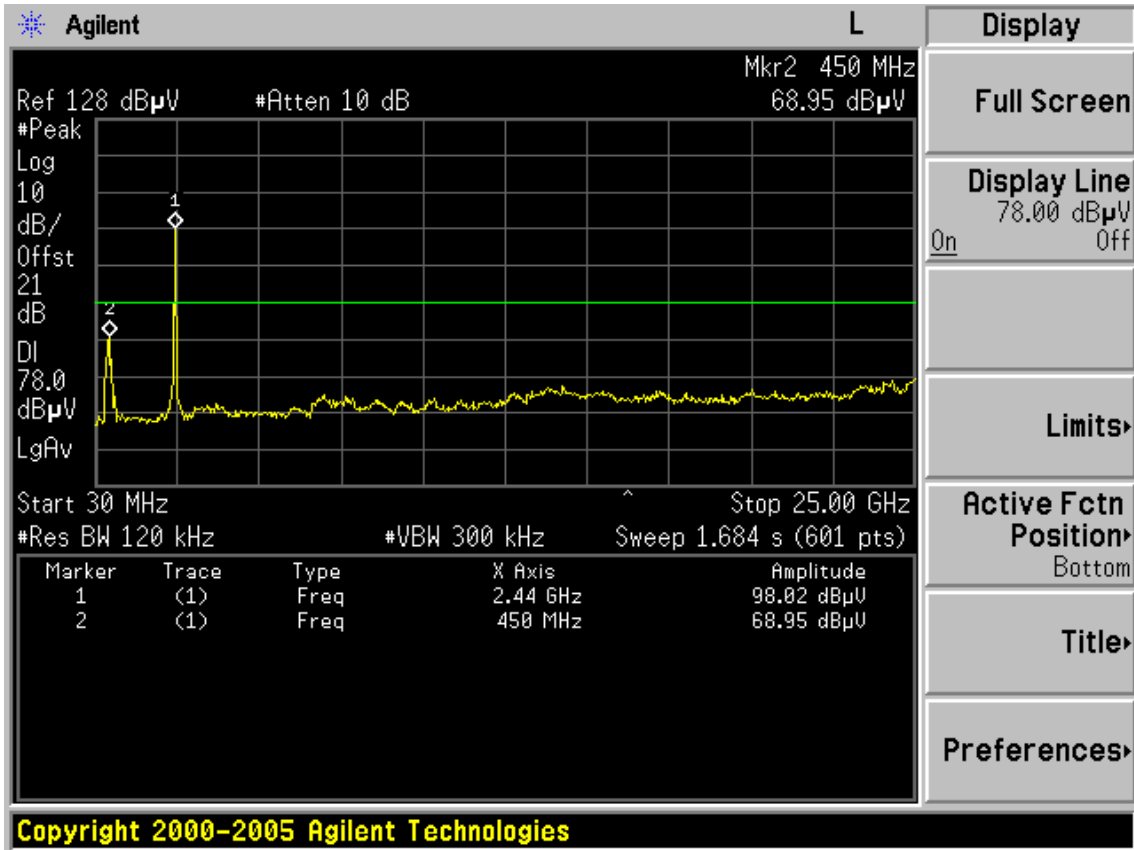
Test CH1: 2422MHz



Test CH4: 2437MHz



Test CH7: 2452MHz



## 6. BAND EDGE COMPLIANCE TEST

### 6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.08, 09	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX 102	28620/2	May.08, 09	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX 102	271471/4	May.08, 09	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX 102	29086/2	May.08, 09	1 Year

### 6.2. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 6.3. Test Produce

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
  - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

### 6.4. Test Results

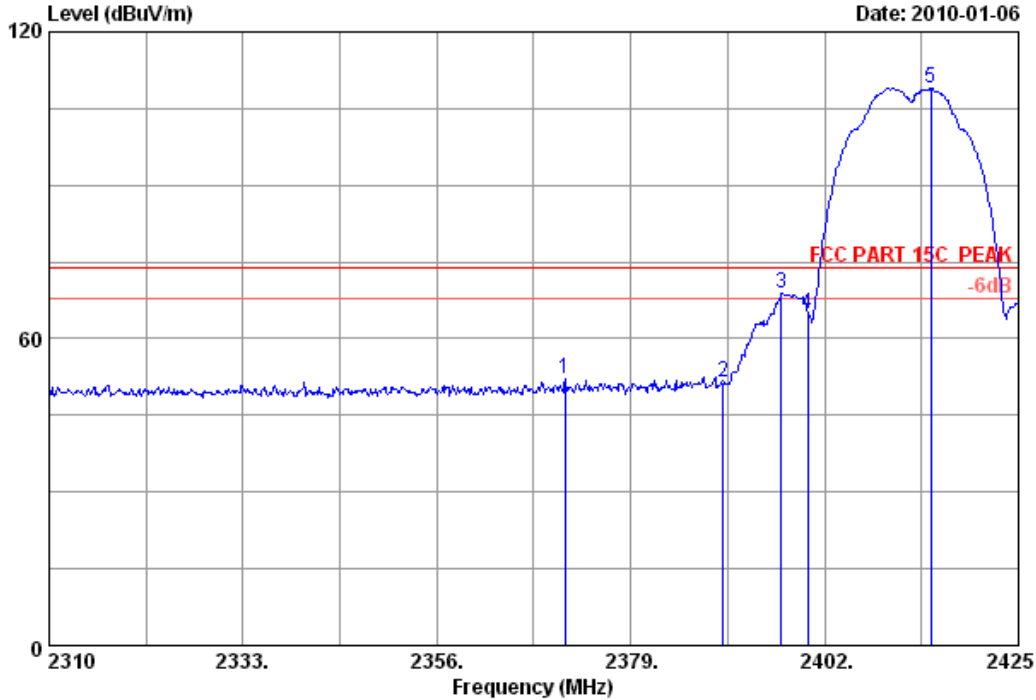
Pass (The testing data was attached in the next pages.)

All the emissions outside operation frequency band were comply with 15.209 limit



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Postcode:518057

Data: 73 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 73  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2371.180	29.43	8.44	36.00	50.43	52.30	74.00	21.70	Peak
2	2390.000	29.44	8.41	36.09	49.65	51.41	74.00	22.59	Peak
3	2396.825	29.44	8.41	36.09	67.22	68.98	74.00	5.02	Peak
4	2400.000	29.44	8.60	36.09	62.85	64.80	74.00	9.20	Peak
5	2414.650	29.45	8.60	35.95	106.86	108.96	74.00	-34.96	Peak

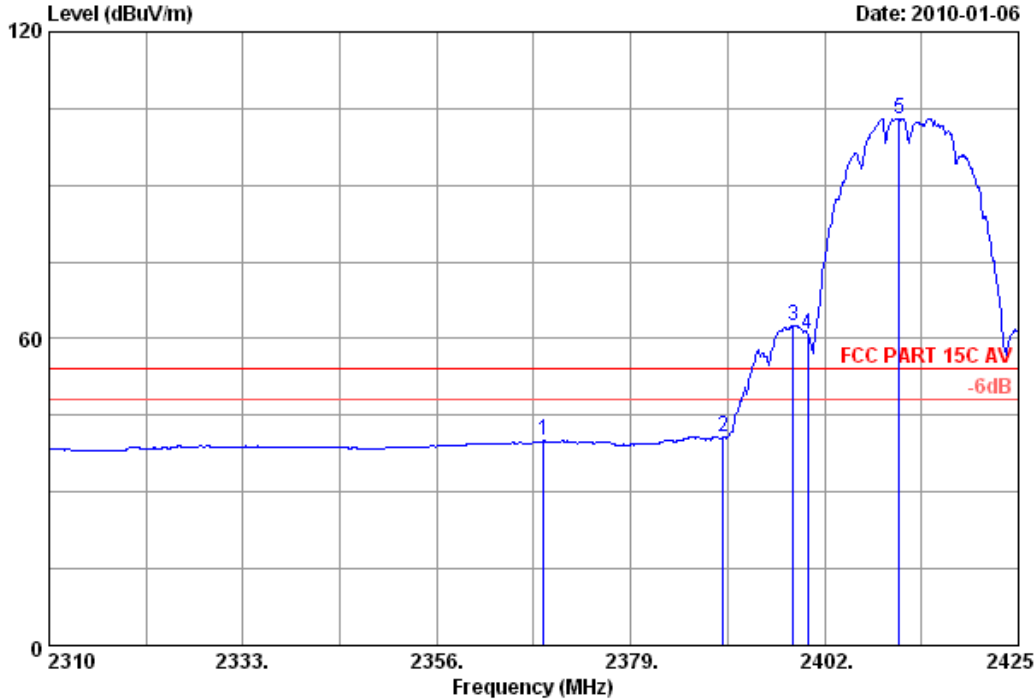
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Postcode:518057

Data: 74 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 74  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2368.650	29.43	8.44	36.00	38.13	40.00	54.00	14.00	Average
2	2390.000	29.44	8.41	36.09	38.93	40.69	54.00	13.31	Average
3	2398.320	29.44	8.41	36.09	60.77	62.53	54.00	-8.53	Average
4	2400.000	29.44	8.60	36.09	58.72	60.67	54.00	-6.67	Average
5	2410.855	29.45	8.60	35.95	100.95	103.05	54.00	-49.05	Average

Remarks:

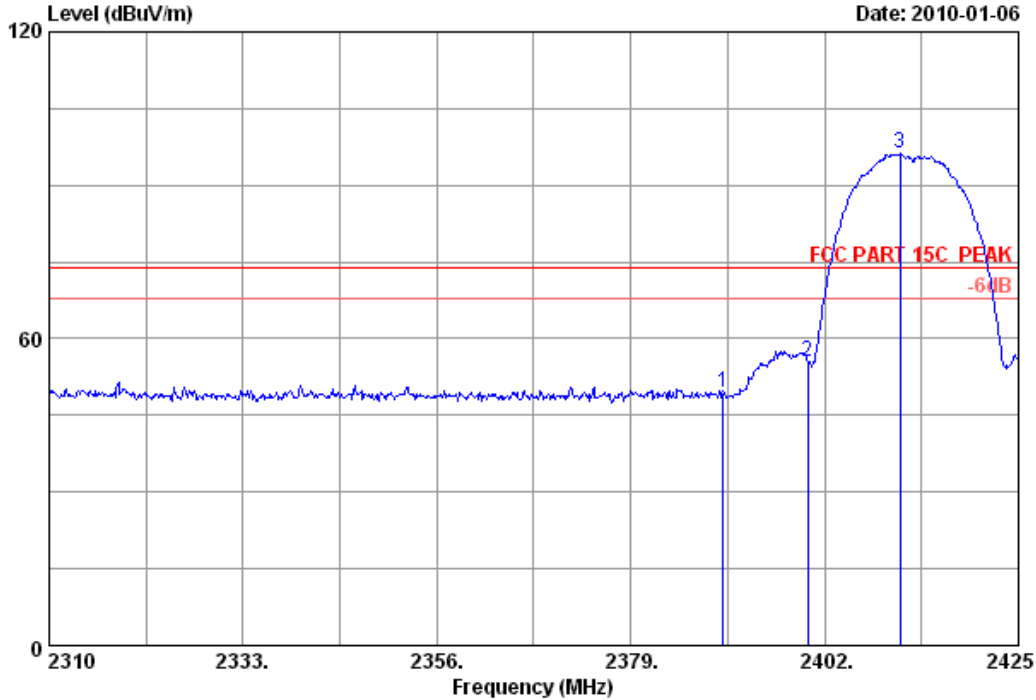
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 75 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 75  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	8.41	36.09	47.63	49.39	74.00	24.61	Peak
2	2400.000	29.44	8.60	36.09	53.69	55.64	74.00	18.36	Peak
3	2410.970	29.45	8.60	35.95	94.01	96.11	74.00	-22.11	Peak

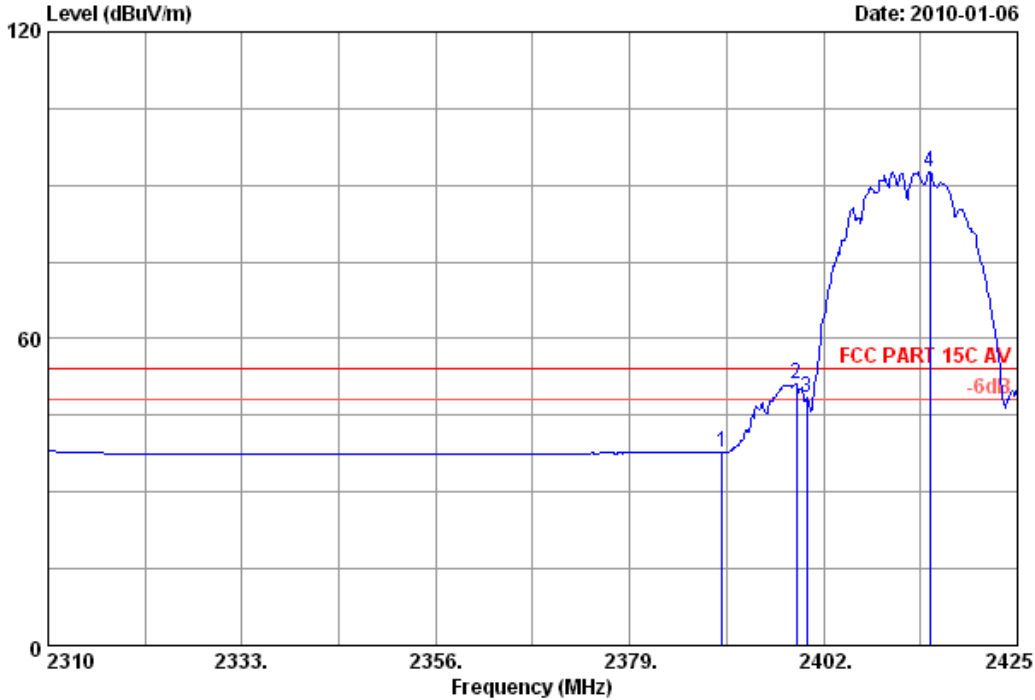
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 76 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 76  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 : TL-WN861N

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2390.000	29.44	8.41	36.09	36.09	37.85	54.00	16.15	Average
2	2398.780	29.44	8.41	36.09	49.32	51.08	54.00	2.92	Average
3	2400.000	29.44	8.60	36.09	46.51	48.46	54.00	5.54	Average
4	2414.650	29.45	8.60	35.95	90.63	92.73	54.00	-38.73	Average

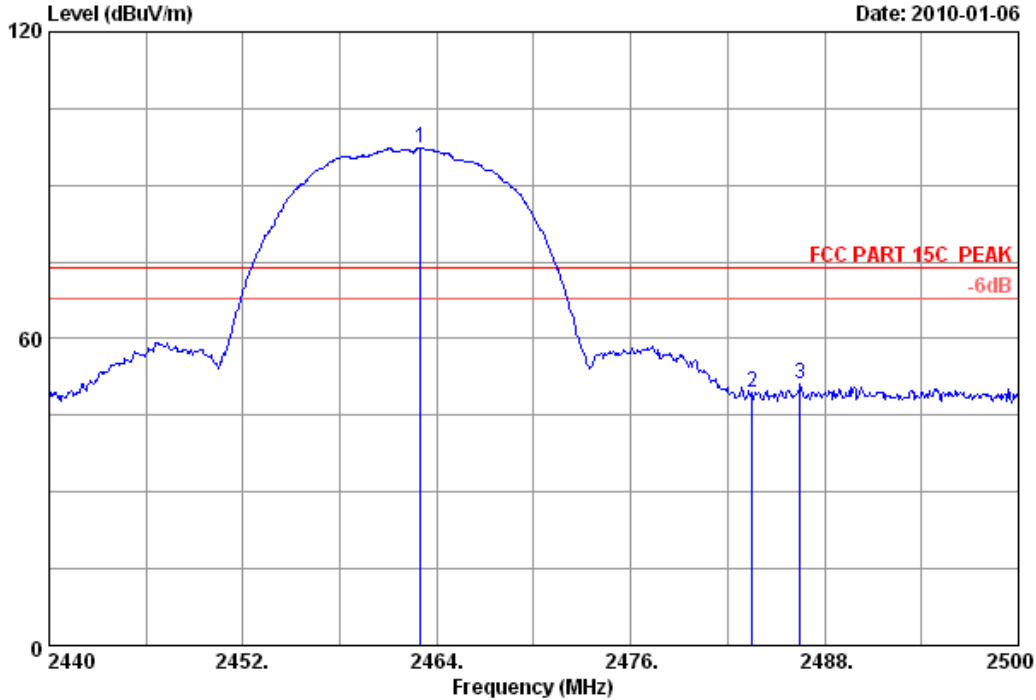
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 77  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.980	29.48	8.76	36.02	95.17	97.39	74.00	-23.39	Peak
2	2483.500	29.49	8.94	35.97	46.89	49.35	74.00	24.65	Peak
3	2486.500	29.49	8.94	35.97	48.70	51.16	74.00	22.84	Peak

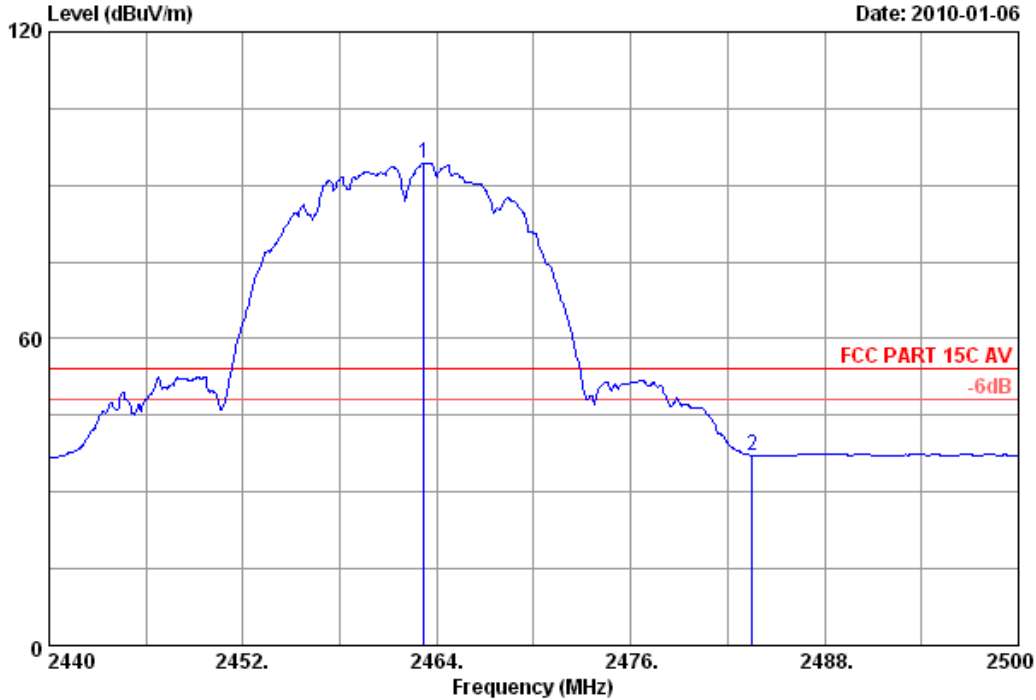
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 78 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 78  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2463.220	29.48	8.76	36.02	92.10	94.32	54.00	-40.32	Average
2	2483.500	29.49	8.94	35.97	34.73	37.19	54.00	16.81	Average

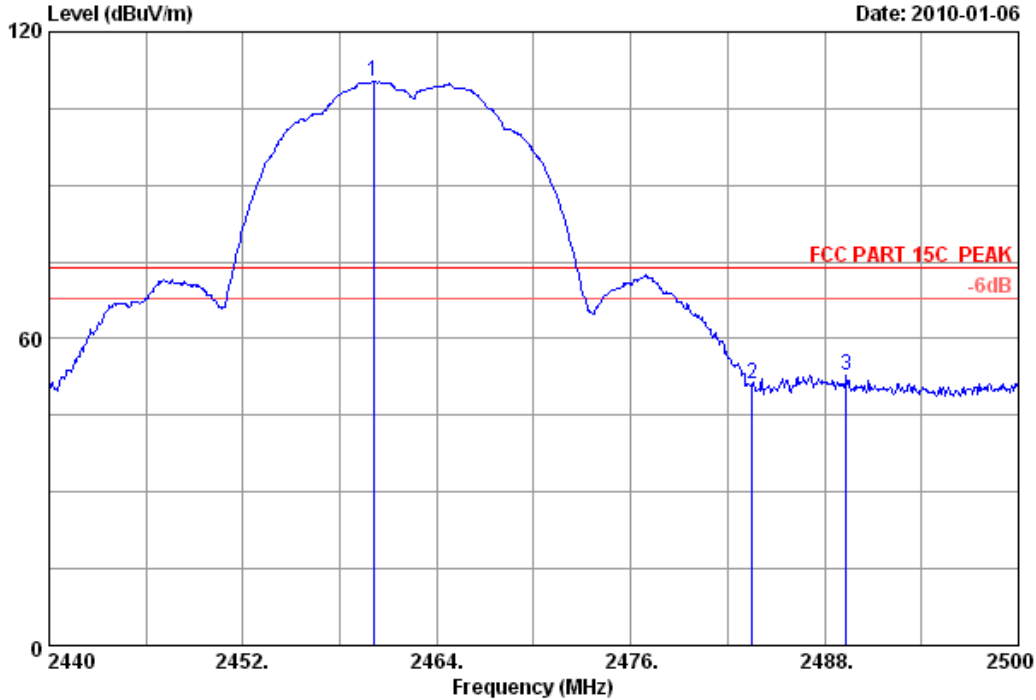
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 79 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 79  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.100	29.48	8.76	36.02	107.94	110.16	74.00	-36.16	Peak
2	2483.500	29.49	8.94	35.97	48.63	51.09	74.00	22.91	Peak
3	2489.320	29.50	8.94	36.00	50.51	52.95	74.00	21.05	Peak

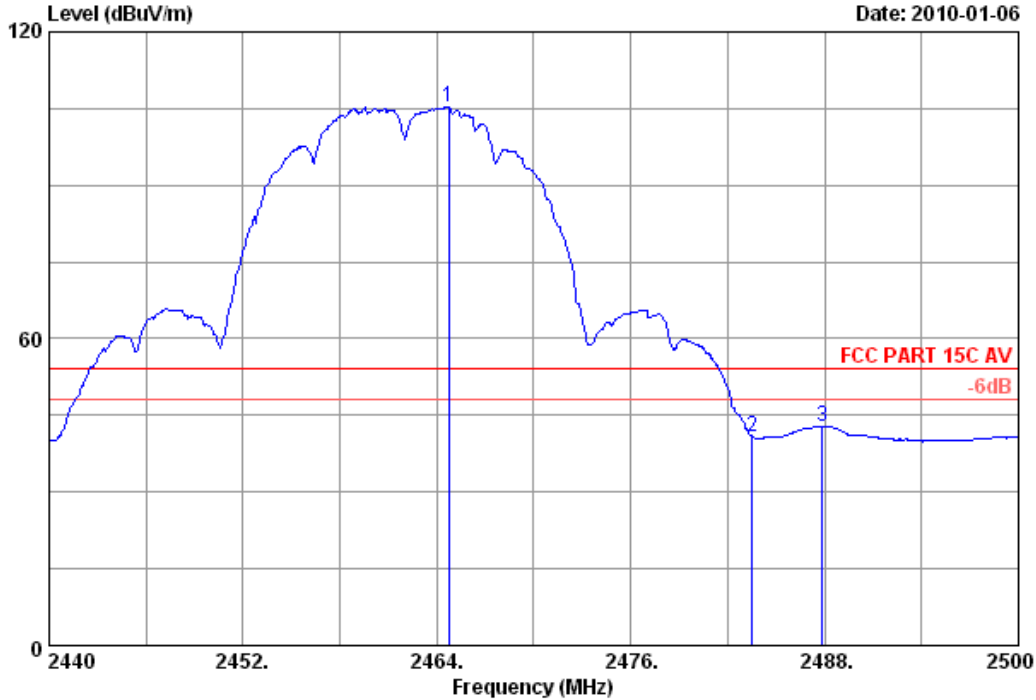
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 80  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.720	29.48	8.76	36.02	103.21	105.43	54.00	-51.43	Average
2	2483.500	29.49	8.94	35.97	38.39	40.85	54.00	13.15	Average
3	2487.880	29.50	8.94	36.00	40.46	42.90	54.00	11.10	Average

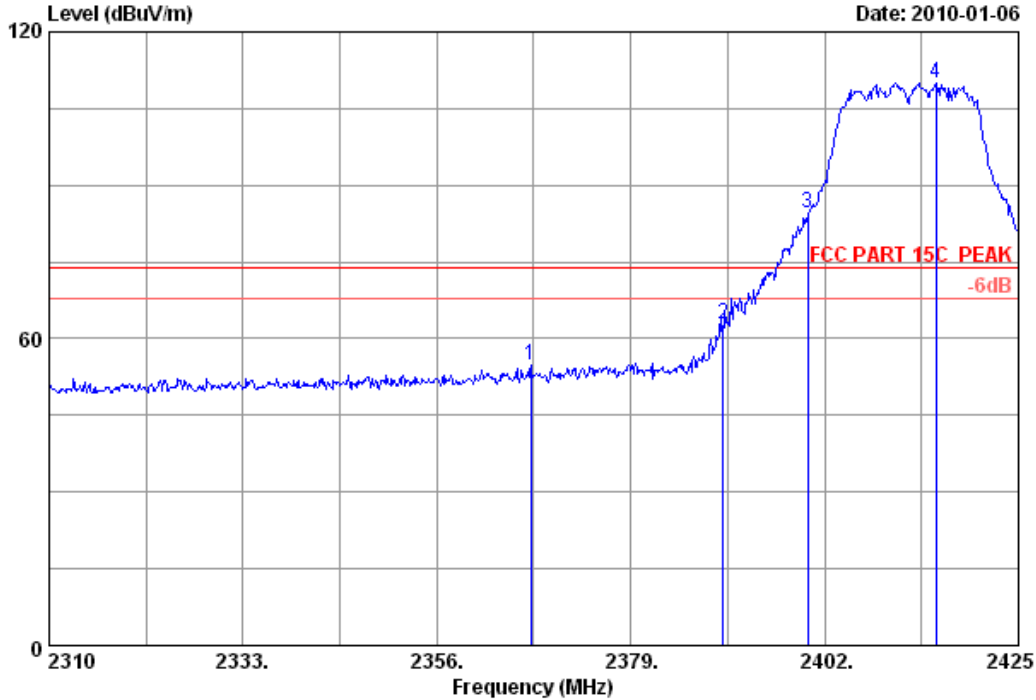
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 81 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 81  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2367.155	29.42	8.44	35.91	52.83	54.78	74.00	19.22	Peak
2	2390.000	29.44	8.41	36.09	60.99	62.75	74.00	11.25	Peak
3	2400.000	29.44	8.60	36.09	82.49	84.44	74.00	-10.44	Peak
4	2415.225	29.45	8.60	35.95	107.83	109.93	74.00	-35.93	Peak

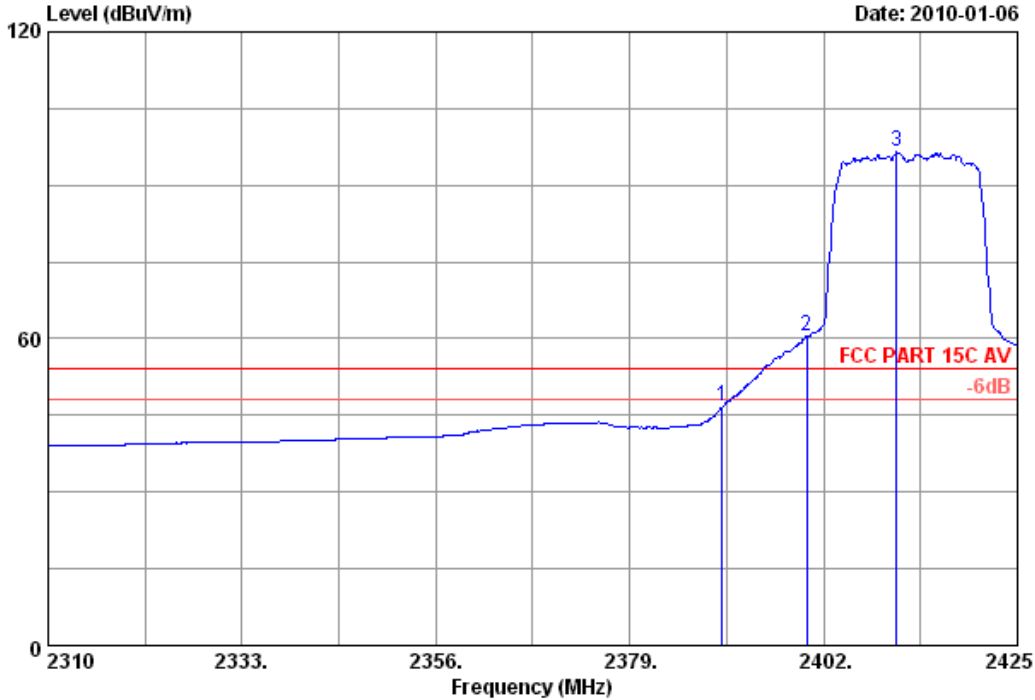
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 82 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 82  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	8.41	36.09	44.99	46.75	54.00	7.25	Average
2	2400.000	29.44	8.60	36.09	58.53	60.48	54.00	-6.48	Average
3	2410.625	29.45	8.60	35.95	94.38	96.48	54.00	-42.48	Average

Remarks:

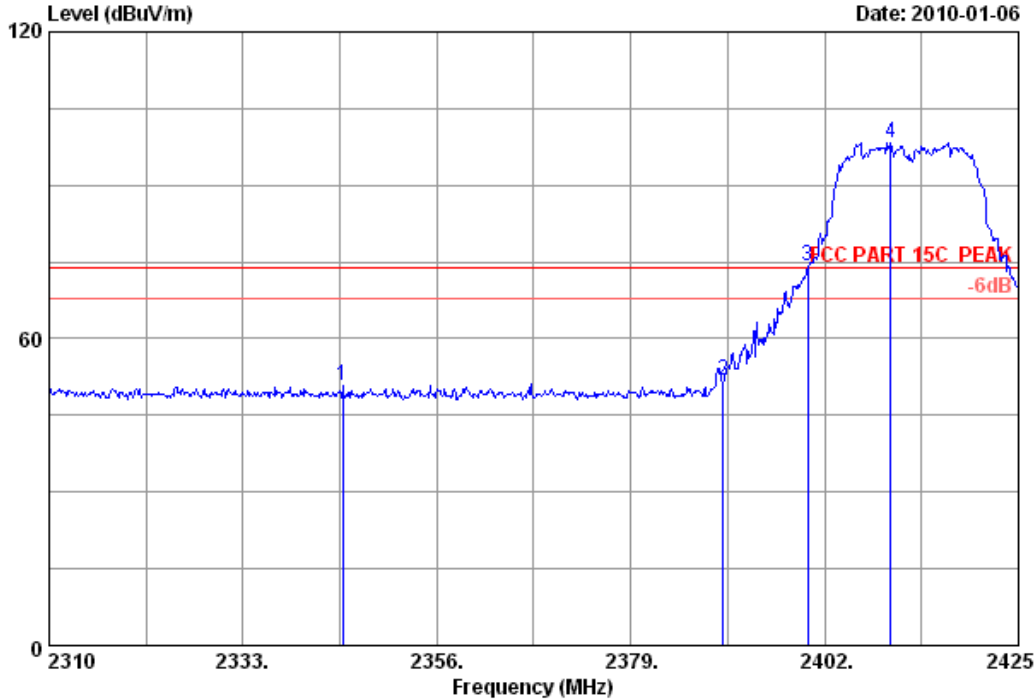
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 83 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 83  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2344.845	29.41	8.57	35.99	48.85	50.84	74.00	23.16	Peak
2	2390.000	29.44	8.41	36.09	50.16	51.92	74.00	22.08	Peak
3	2400.000	29.44	8.60	36.09	72.15	74.10	74.00	-0.10	Peak
4	2409.820	29.45	8.60	35.95	96.30	98.40	74.00	-24.40	Peak

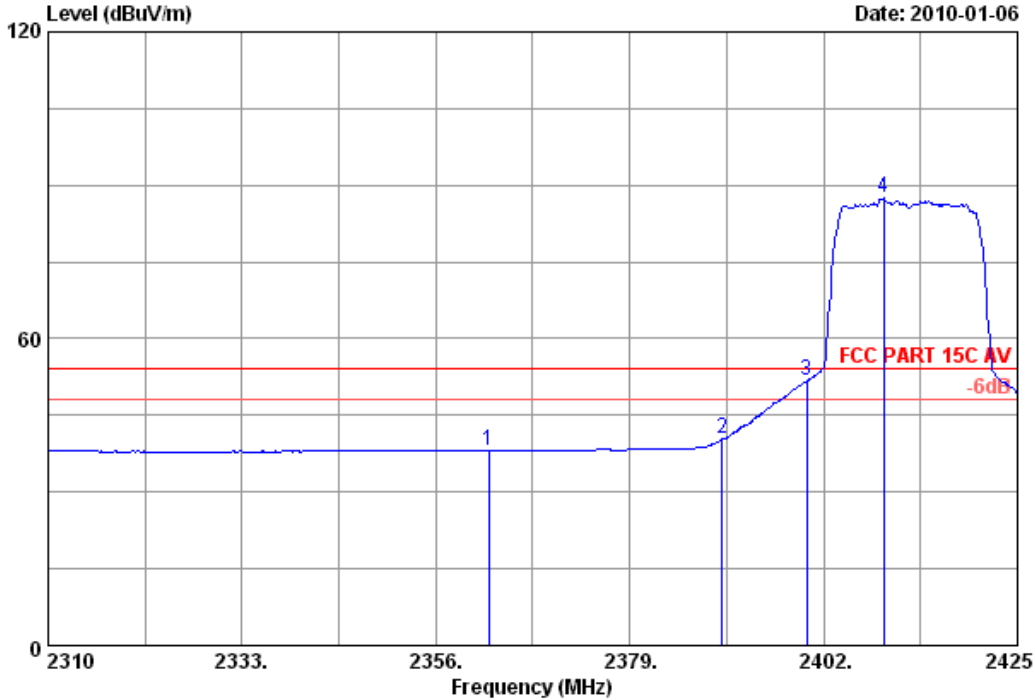
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 84 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 84  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2362.325	29.42	8.44	35.91	36.28	38.23	54.00	15.77	Average
2	2390.000	29.44	8.41	36.09	38.56	40.32	54.00	13.68	Average
3	2400.000	29.44	8.60	36.09	49.92	51.87	54.00	2.13	Average
4	2409.130	29.45	8.60	35.95	85.33	87.43	54.00	-33.43	Average

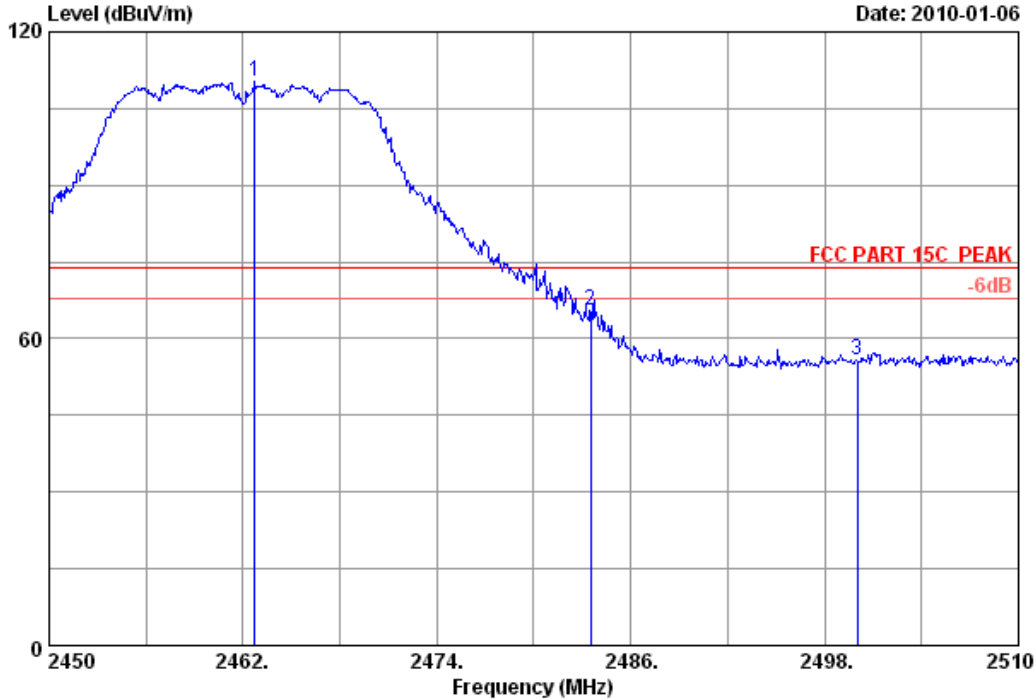
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 85 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 85  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2462.720	29.48	8.76	36.02	108.01	110.23	74.00	-36.23	Peak
2	2483.500	29.49	8.94	35.97	62.94	65.40	74.00	8.60	Peak
3	2500.000	29.50	8.89	36.00	53.34	55.73	74.00	18.27	Peak

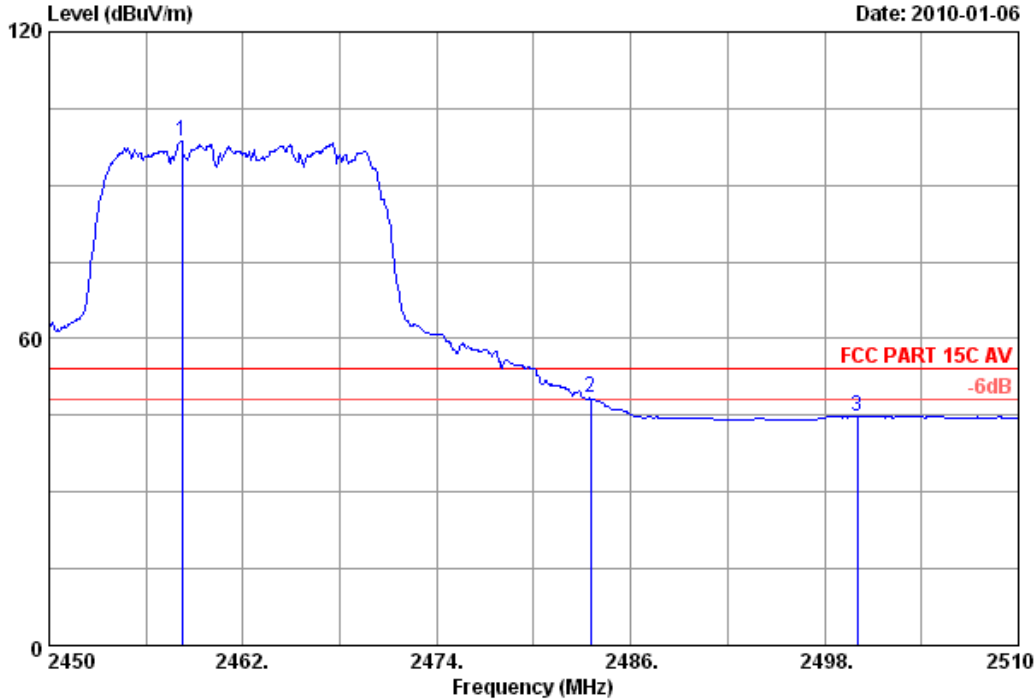
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 86 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 86  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2458.220	29.48	8.48	36.02	96.57	98.51	54.00	-44.51	Average
2	2483.500	29.49	8.94	35.97	45.85	48.31	54.00	5.69	Average
3	2500.000	29.50	8.89	36.00	42.39	44.78	54.00	9.22	Average

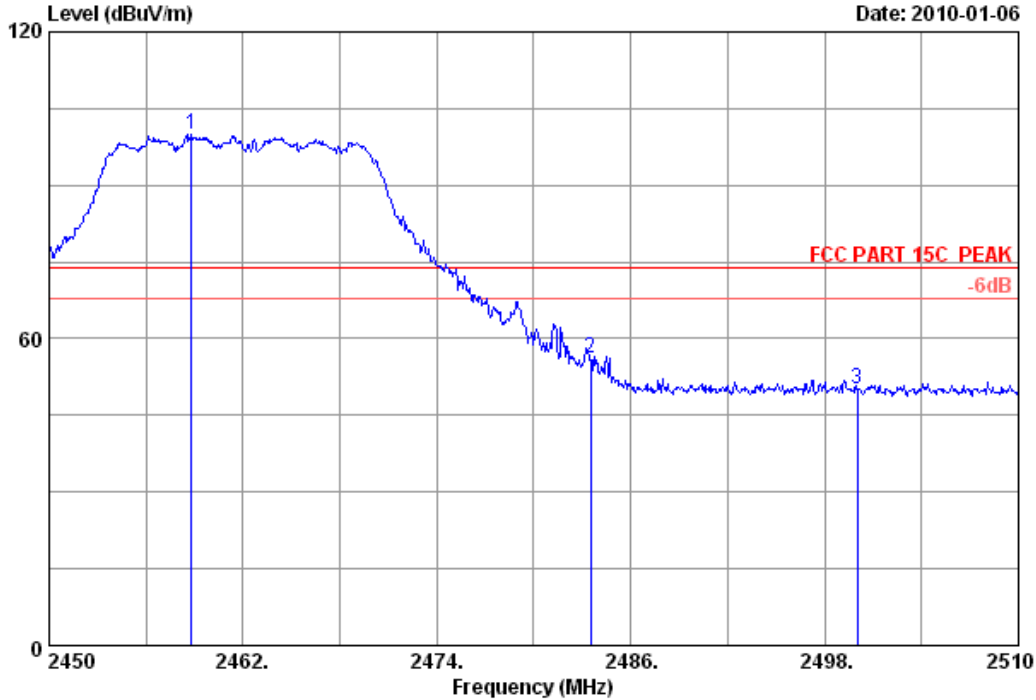
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 87 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 87  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2458.820	29.48	8.76	36.02	97.77	99.99	74.00	-25.99	Peak
2	2483.500	29.49	8.94	35.97	53.77	56.23	74.00	17.77	Peak
3	2500.000	29.50	8.89	36.00	47.71	50.10	74.00	23.90	Peak

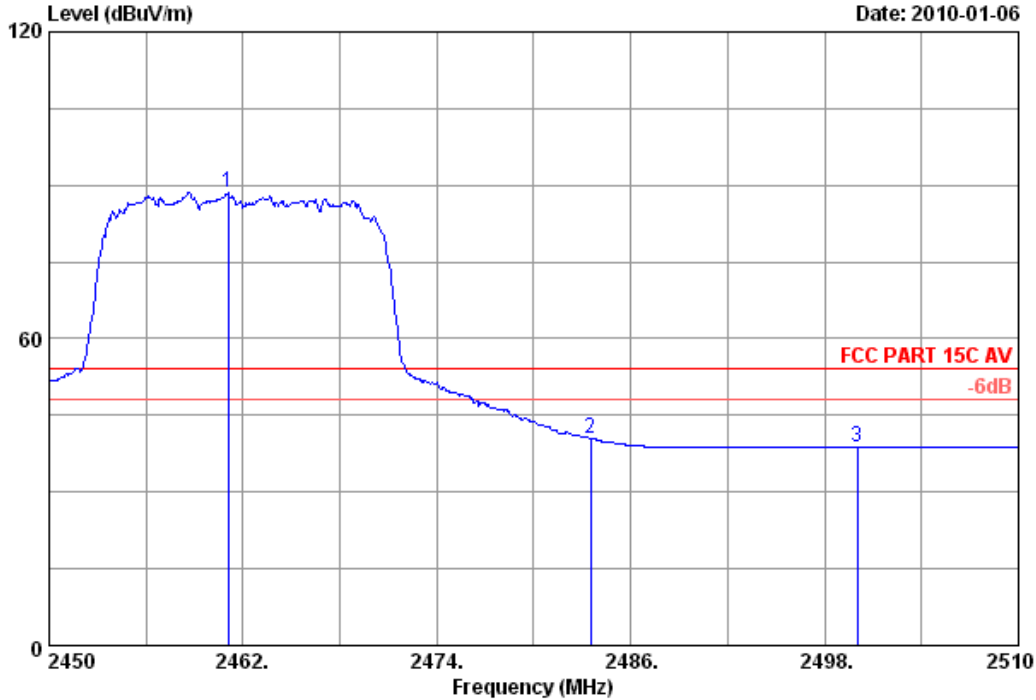
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 88 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 88  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2461.100	29.48	8.76	36.02	86.43	88.65	54.00	-34.65	Average
2	2483.500	29.49	8.94	35.97	37.89	40.35	54.00	13.65	Average
3	2500.000	29.50	8.89	36.00	36.42	38.81	54.00	15.19	Average

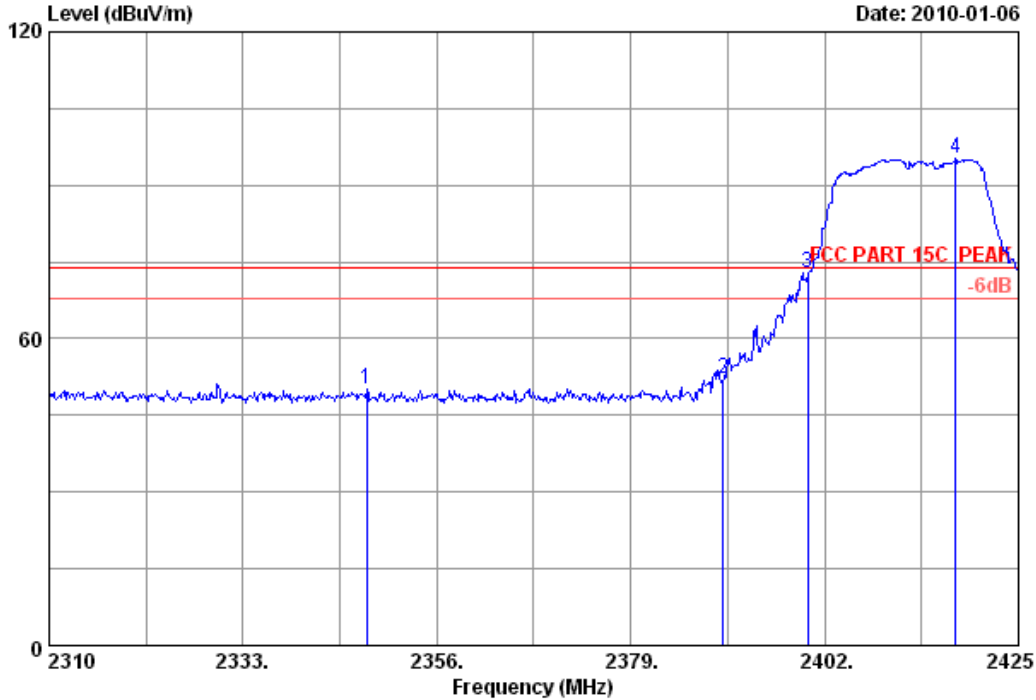
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Postcode:518057

Data: 89 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 89  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2347.720	29.41	8.57	35.99	48.11	50.10	74.00	23.90	Peak
2	2390.000	29.44	8.41	36.09	50.30	52.06	74.00	21.94	Peak
3	2400.000	29.44	8.60	36.09	71.08	73.03	74.00	0.97	Peak
4	2417.525	29.45	8.60	35.95	93.06	95.16	74.00	-21.16	Peak

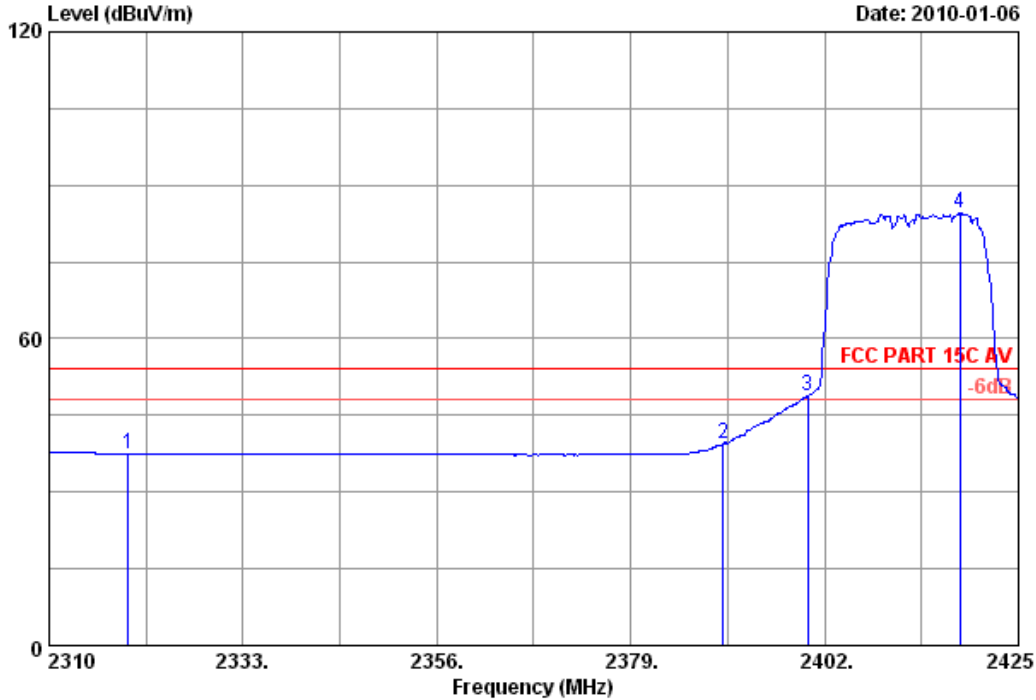
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 90 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 90  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2319.430	29.40	8.64	36.06	35.55	37.53	54.00	16.47	Average
2	2390.000	29.44	8.41	36.09	37.75	39.51	54.00	14.49	Average
3	2400.000	29.44	8.60	36.09	46.98	48.93	54.00	5.07	Average
4	2418.100	29.45	8.60	35.95	82.61	84.71	54.00	-30.71	Average

Remarks:

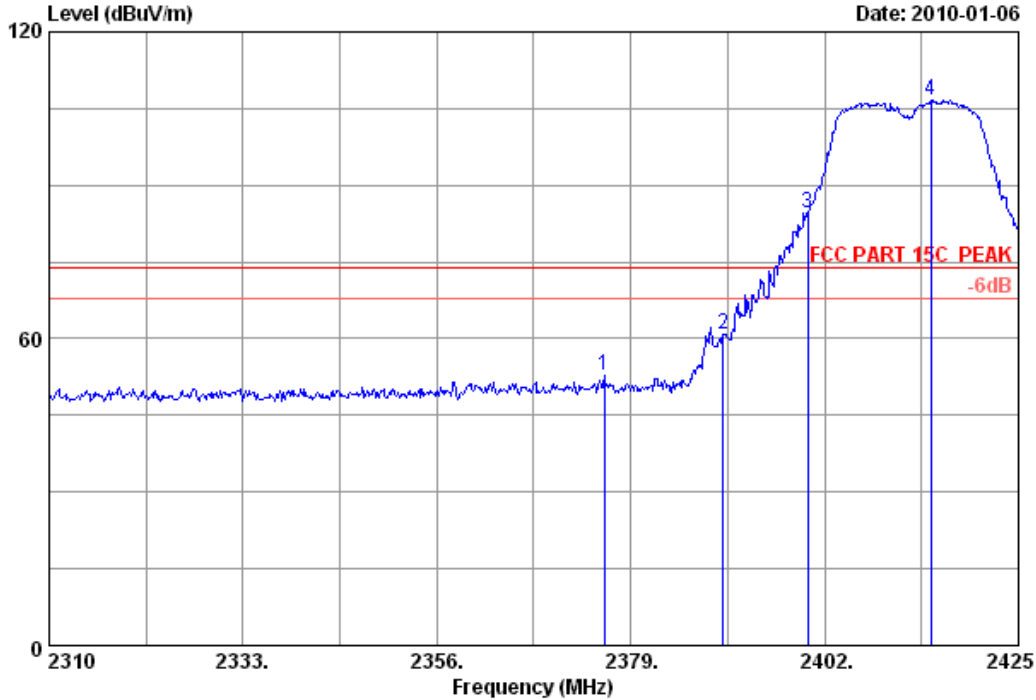
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 91 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 91  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2375.895	29.43	8.44	36.00	50.90	52.77	74.00	21.23	Peak
2	2390.000	29.44	8.41	36.09	59.12	60.88	74.00	13.12	Peak
3	2400.000	29.44	8.60	36.09	82.69	84.64	74.00	-10.64	Peak
4	2414.650	29.45	8.60	35.95	104.65	106.75	74.00	-32.75	Peak

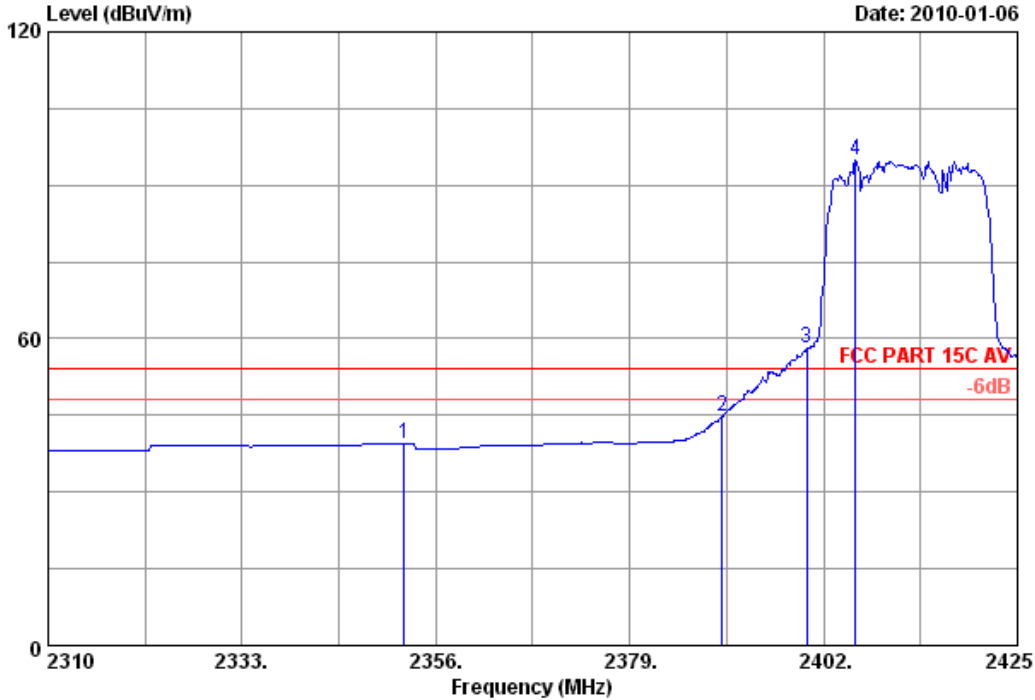
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 92 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 92  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH1 2412MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2352.205	29.42	8.57	35.91	37.38	39.46	54.00	14.54	Average
2	2390.000	29.44	8.41	36.09	43.06	44.82	54.00	9.18	Average
3	2400.000	29.44	8.60	36.09	56.06	58.01	54.00	-4.01	Average
4	2405.795	29.45	8.60	35.95	92.68	94.78	54.00	-40.78	Average

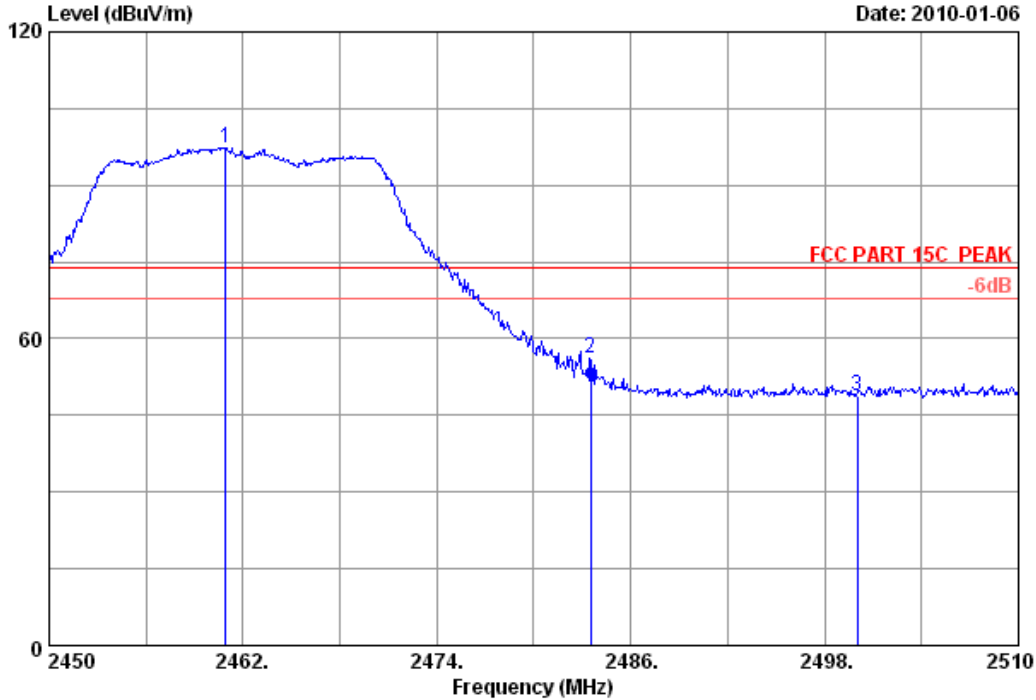
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 93 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 93  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.920	29.48	8.76	36.02	95.21	97.43	74.00	-23.43	Peak
2	2483.500	29.49	8.94	35.97	53.59	56.05	74.00	17.95	Peak
3	2500.000	29.50	8.89	36.00	46.40	48.79	74.00	25.21	Peak

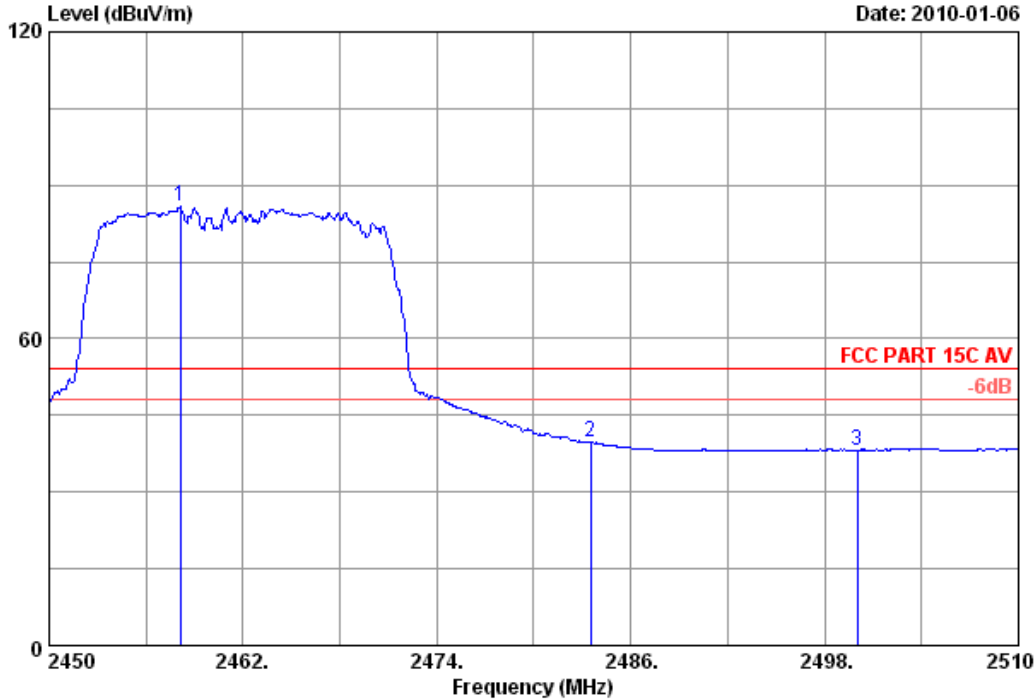
Remarks:

- Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- The emission levels that are 20dB below the official limit are not reported.



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Data: 94 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 94  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2458.100	29.48	8.48	36.02	83.91	85.85	54.00	-31.85	Average
2	2483.500	29.49	8.94	35.97	37.28	39.74	54.00	14.26	Average
3	2500.000	29.50	8.89	36.00	35.84	38.23	54.00	15.77	Average

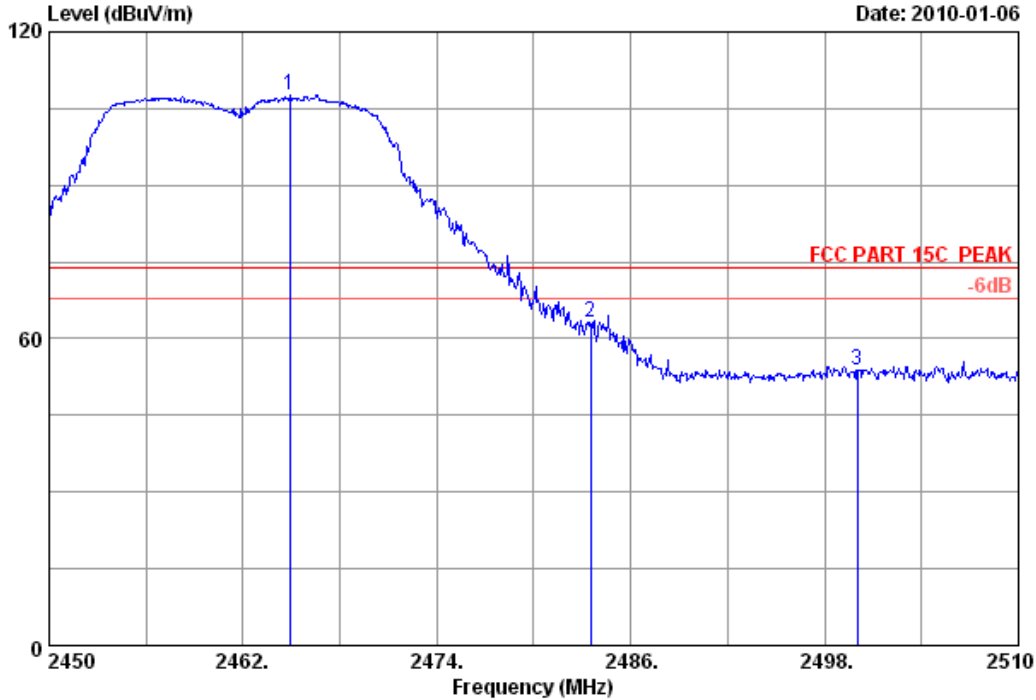
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 95  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.880	29.48	8.76	36.02	105.53	107.75	74.00	-33.75	Peak
2	2483.500	29.49	8.94	35.97	60.72	63.18	74.00	10.82	Peak
3	2500.000	29.50	8.89	36.00	51.34	53.73	74.00	20.27	Peak

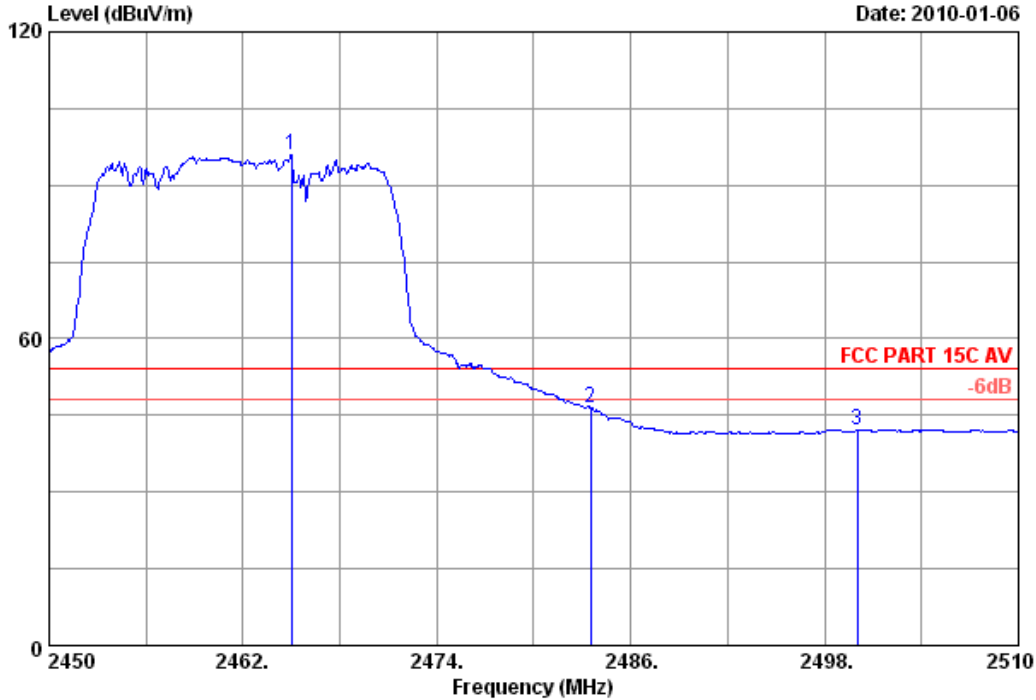
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Site no. : 3m Chamber Data no. : 96  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT20 CH11 2462MHz Tx  
 : TL-WN861N

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission			Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBuV)	Level (dBuV/m)	Limits (dBuV/m)	(dB)		
1 2465.000	29.48	8.76	36.02	93.78	96.00	54.00	-42.00	Average	
2 2483.500	29.49	8.94	35.97	44.10	46.56	54.00	7.44	Average	
3 2500.000	29.50	8.89	36.00	39.76	42.15	54.00	11.85	Average	

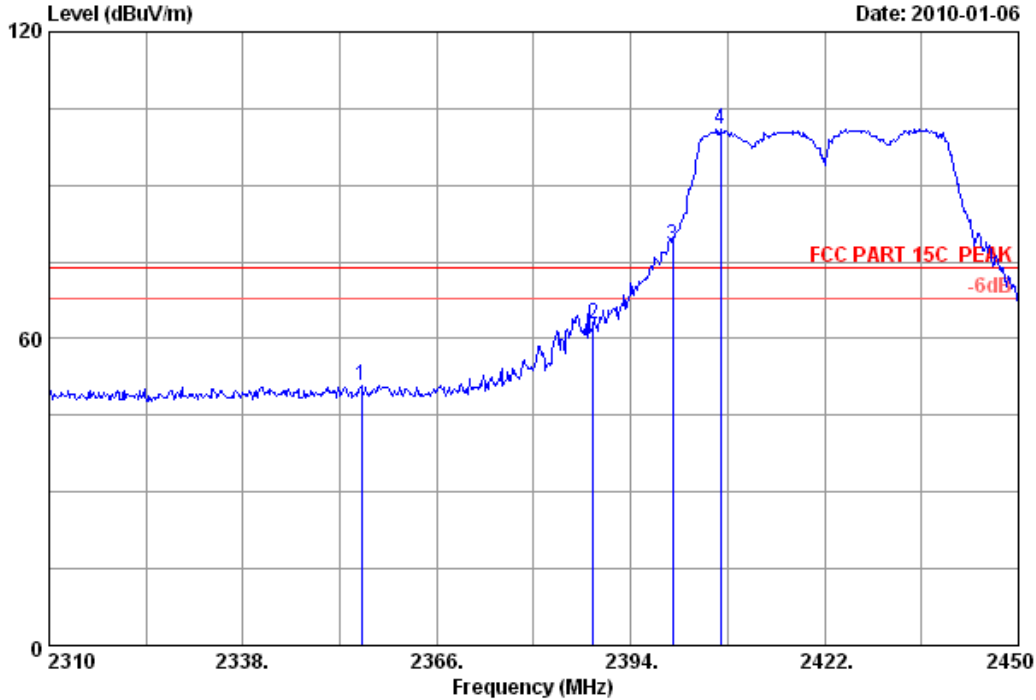
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 97 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 97  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2355.080	29.42	8.57	35.91	48.86	50.94	74.00	23.06	Peak
2	2388.540	29.44	8.41	36.09	61.12	62.88	74.00	11.12	Peak
3	2400.000	29.44	8.60	36.09	76.38	78.33	74.00	-4.33	Peak
4	2407.020	29.45	8.60	35.95	98.96	101.06	74.00	-27.06	Peak

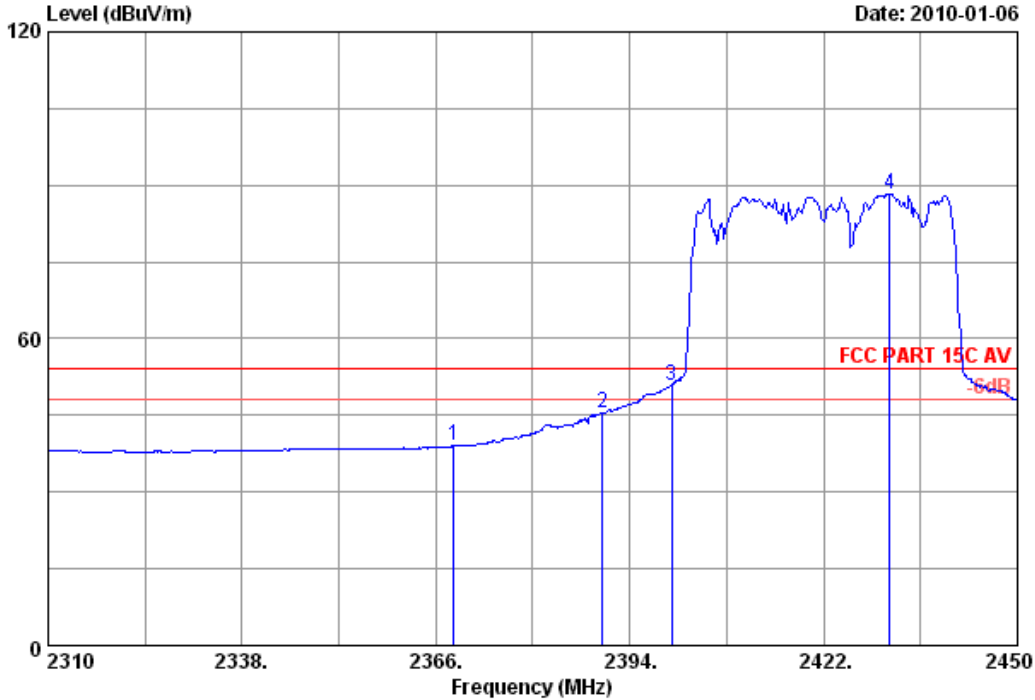
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 98 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 98  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2368.520	29.43	8.44	36.00	37.14	39.01	54.00	14.99	Average
2	2390.000	29.44	8.41	36.09	43.70	45.46	54.00	8.54	Average
3	2400.000	29.44	8.60	36.09	48.98	50.93	54.00	3.07	Average
4	2431.520	29.46	8.60	36.01	86.33	88.38	54.00	-34.38	Average

Remarks:

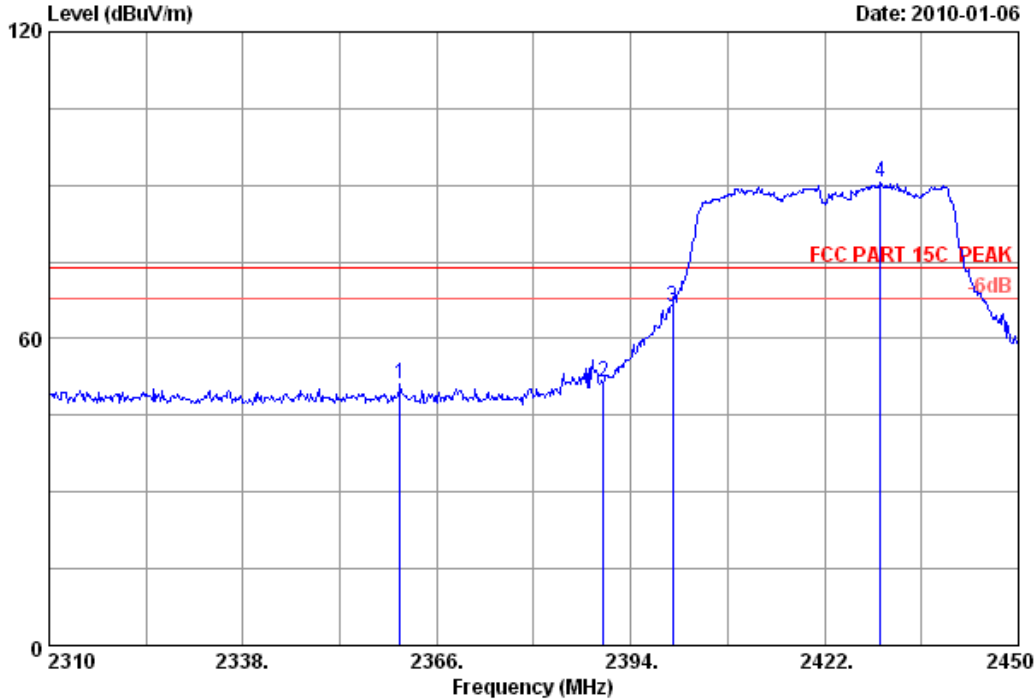
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 99 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 99  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2360.680	29.42	8.44	35.91	49.07	51.02	74.00	22.98	Peak
2	2390.000	29.44	8.41	36.09	49.79	51.55	74.00	22.45	Peak
3	2400.000	29.44	8.60	36.09	64.37	66.32	74.00	7.68	Peak
4	2430.120	29.46	8.60	36.01	88.60	90.65	74.00	-16.65	Peak

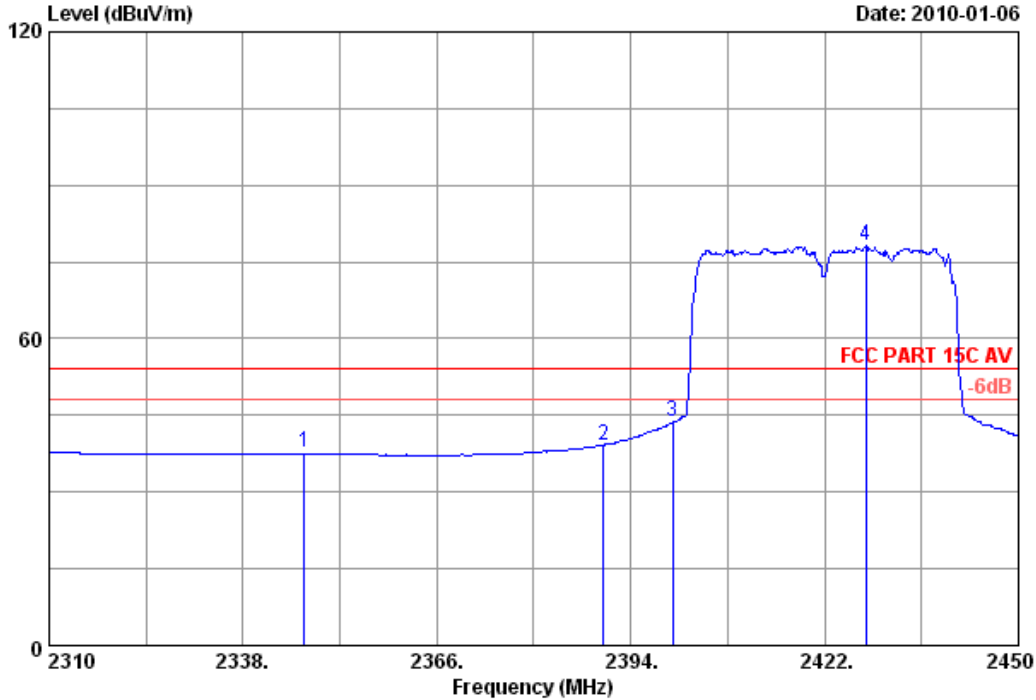
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 100 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 100  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH1 2422MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2346.820	29.41	8.57	35.99	35.89	37.88	54.00	16.12	Average
2	2390.000	29.44	8.41	36.09	37.45	39.21	54.00	14.79	Average
3	2400.000	29.44	8.60	36.09	41.72	43.67	54.00	10.33	Average
4	2428.020	29.46	8.60	36.01	76.09	78.14	54.00	-24.14	Average

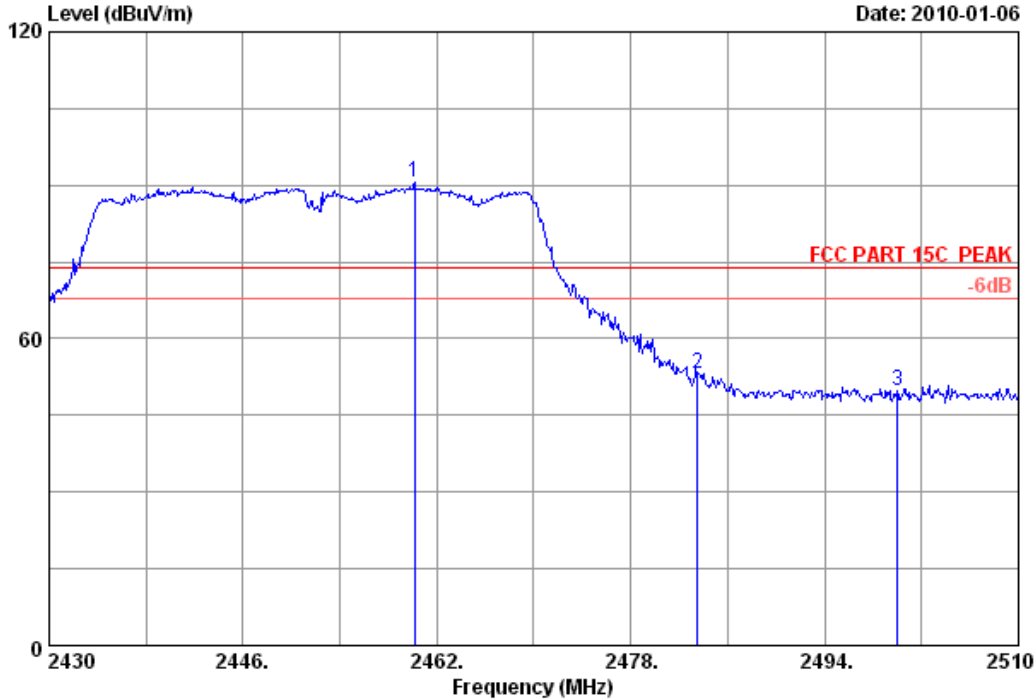
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 101 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 101  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2460.160	29.48	8.76	36.02	88.36	90.58	74.00	-16.58	Peak
2	2483.500	29.49	8.94	35.97	50.85	53.31	74.00	20.69	Peak
3	2500.000	29.50	8.89	36.00	47.37	49.76	74.00	24.24	Peak

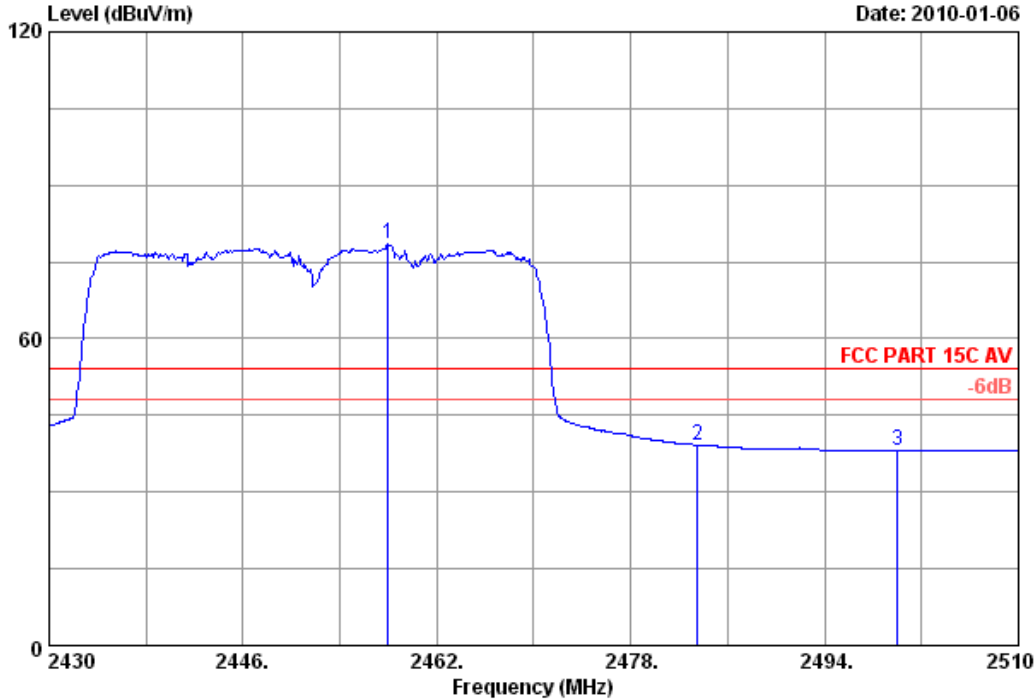
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Data: 102 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 102  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23\*C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2458.000	29.48	8.48	36.02	76.55	78.49	54.00	-24.49	Average
2	2483.500	29.49	8.94	35.97	36.74	39.20	54.00	14.80	Average
3	2500.000	29.50	8.89	36.00	35.75	38.14	54.00	15.86	Average

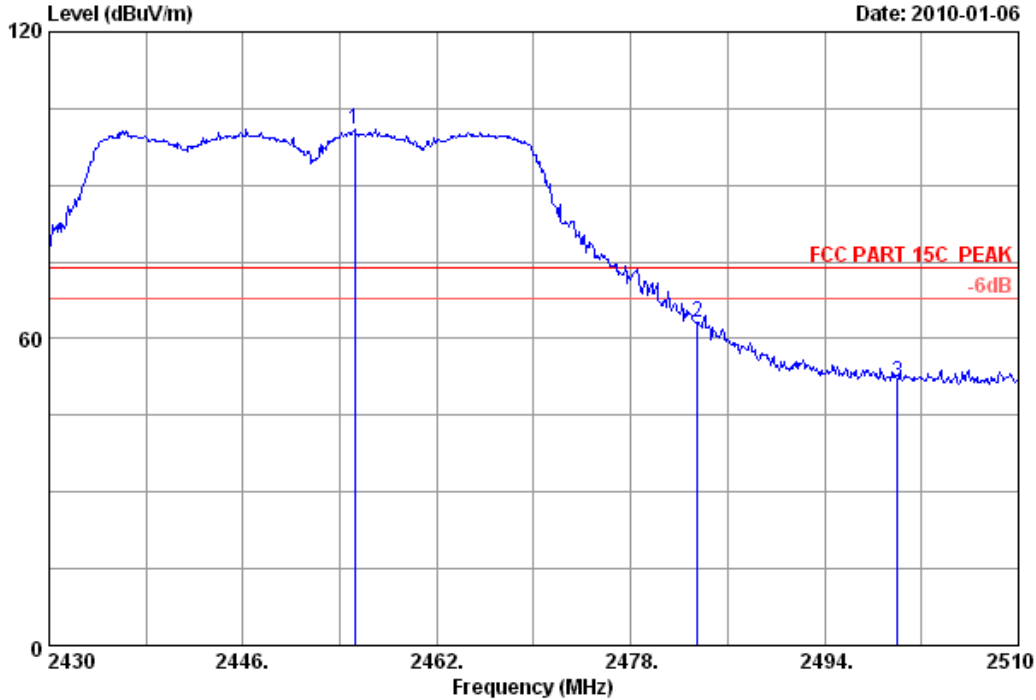
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Fax:+86-755-26632877  
Postcode:518057

Data: 103 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 103  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2455.200	29.48	8.48	36.02	99.06	101.00	74.00	-27.00	Peak
2	2483.500	29.49	8.94	35.97	60.73	63.19	74.00	10.81	Peak
3	2500.000	29.50	8.89	36.00	49.21	51.60	74.00	22.40	Peak

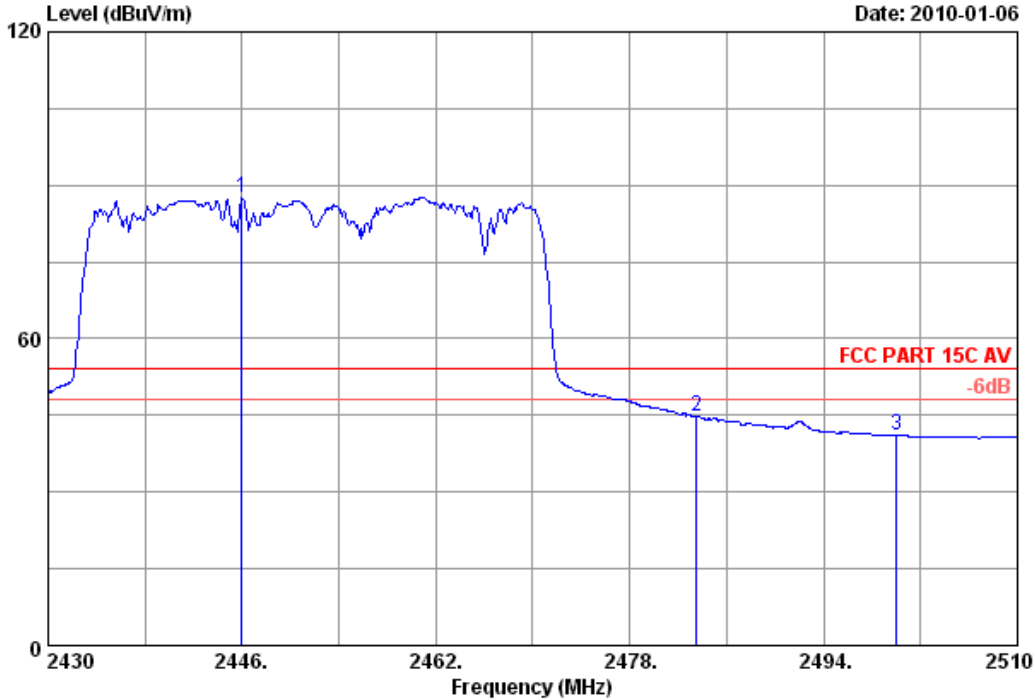
Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



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Postcode:518057

Data: 104 File: E:\2009 report data\TP-LINK\ACS9Q2169.EM6 (104)



Site no. : 3m Chamber Data no. : 104  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Paul Tian  
 EUT : 300Mbps Wireless N Mini PCI Adapter  
 Power : DC 3.3V From PC Input 120V/60Hz  
 Test mode : IEEE802.11nHT40 CH7 2452MHz Tx  
 : TL-WN861N

	Ant. Freq. (MHz)	Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2446.000	29.47	8.48	36.06	85.72	87.61	54.00	-33.61	Average
2	2483.500	29.49	8.94	35.97	42.29	44.75	54.00	9.25	Average
3	2500.000	29.50	8.89	36.00	38.68	41.07	54.00	12.93	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

## 7. 6dB Bandwidth Test

### 7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 09	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 09	1 Year

### 7.2. Limit

For direct sequence systems, the minimum 6dB bandwidth shall be at least 500kHz

### 7.3. Test Procedure

The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100 kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

### 7.4. Test Results

#### Chain 1:

Test Mode: IEEE 802.11b TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	12.08	>500	<b>PASS</b>
6	12.58	>500	<b>PASS</b>
11	12.08	>500	<b>PASS</b>

Test Mode: IEEE 802.11g TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	16.50	>500	<b>PASS</b>
6	16.50	>500	<b>PASS</b>
11	16.50	>500	<b>PASS</b>

Test Mode: IEEE 802.11n HT20 TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	17.67	>500	<b>PASS</b>
6	17.83	>500	<b>PASS</b>
11	17.67	>500	<b>PASS</b>

Test Mode: IEEE 802.11n HT40 TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	36.60	>500	<b>PASS</b>
4	36.60	>500	<b>PASS</b>
7	36.60	>500	<b>PASS</b>

**Chain 2:**

Test Mode: IEEE 802.11b TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	12.67	>500	<b>PASS</b>
6	12.58	>500	<b>PASS</b>
11	12.58	>500	<b>PASS</b>

Test Mode: IEEE 802.11g TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	16.50	>500	<b>PASS</b>
6	16.50	>500	<b>PASS</b>
11	16.50	>500	<b>PASS</b>

Test Mode: IEEE 802.11n HT20 TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	17.75	>500	<b>PASS</b>
6	17.58	>500	<b>PASS</b>
11	17.67	>500	<b>PASS</b>

Test Mode: IEEE 802.11n HT40 TX

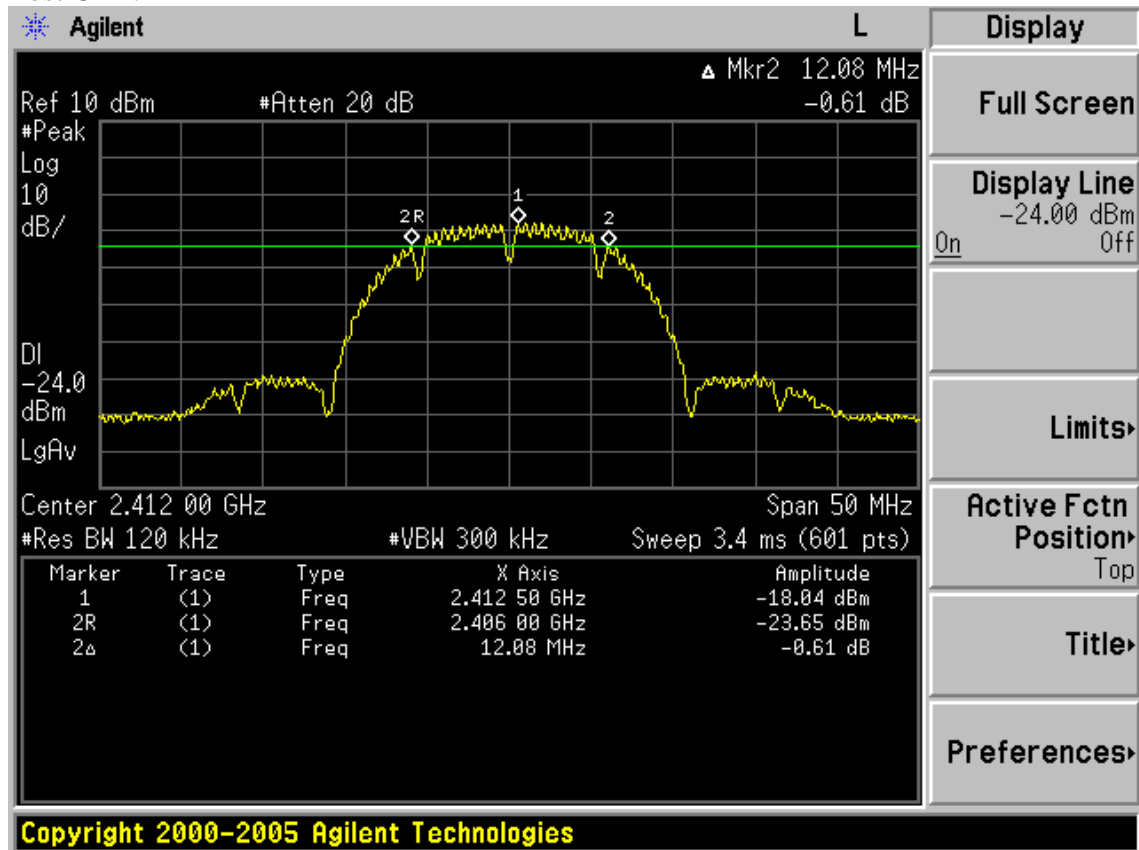
CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	36.60	>500	<b>PASS</b>
4	36.60	>500	<b>PASS</b>
7	36.60	>500	<b>PASS</b>



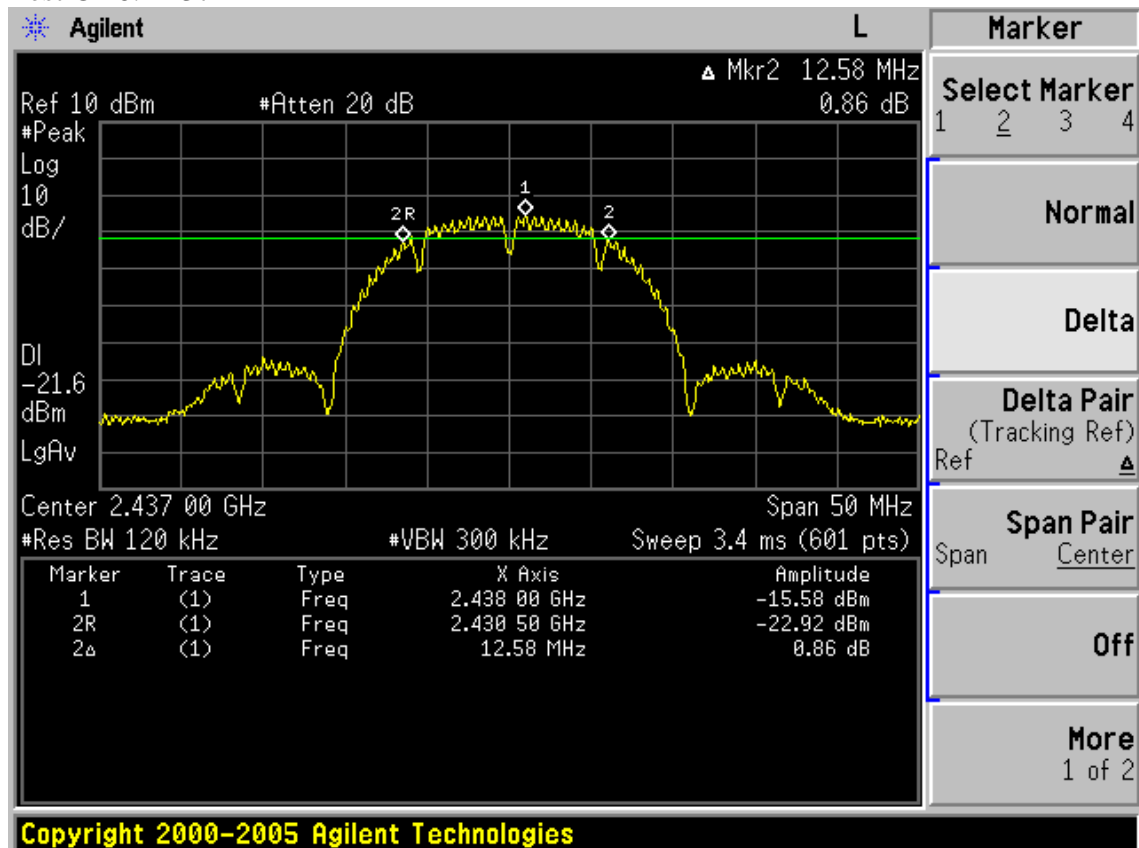
**Chain 1:**

Test Mode: IEEE 802.11b TX

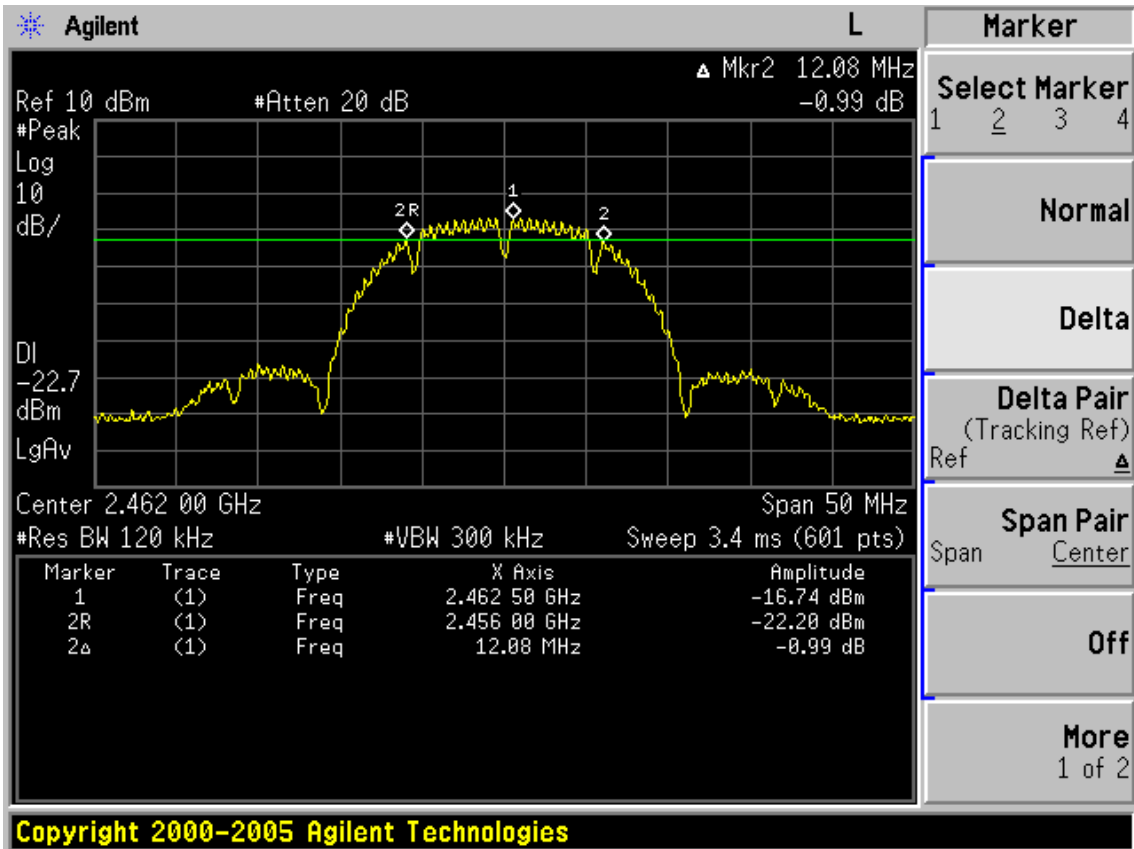
Test CH1: 2412MHz



Test CH6: 2437MHz

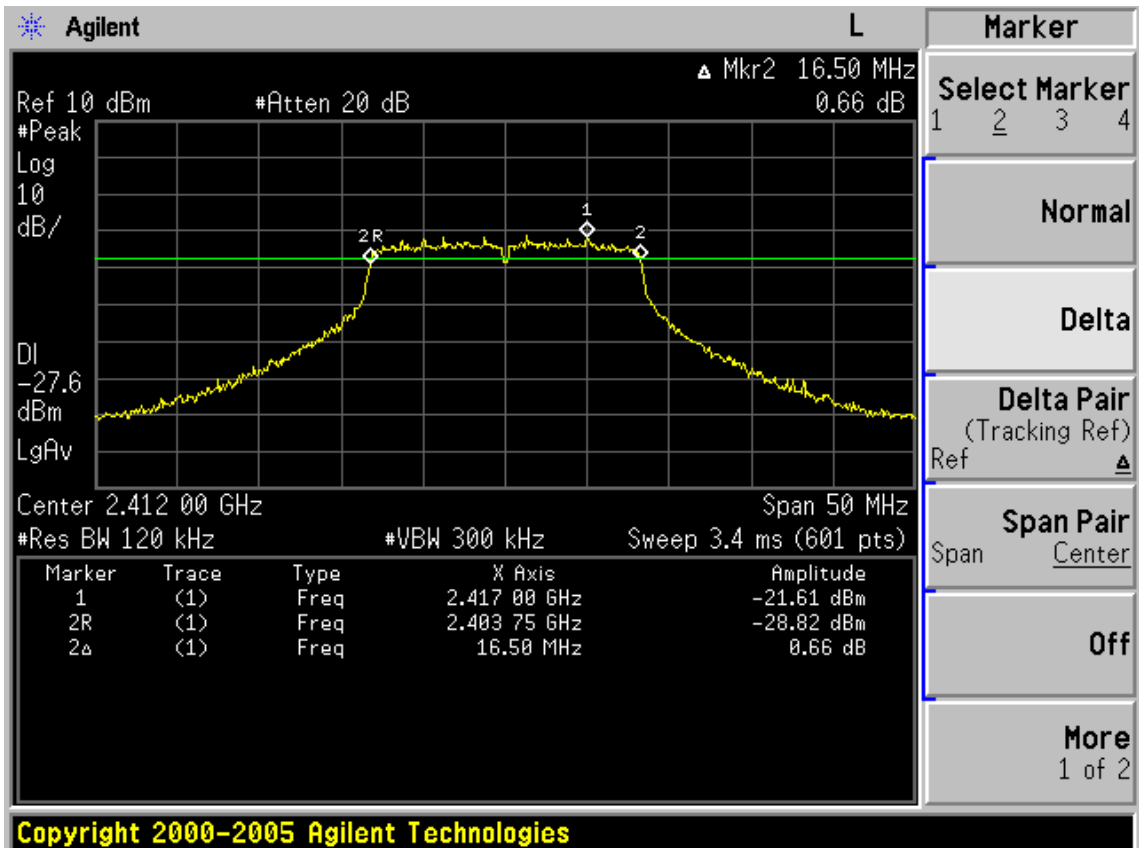


Test CH1: 2462MHz

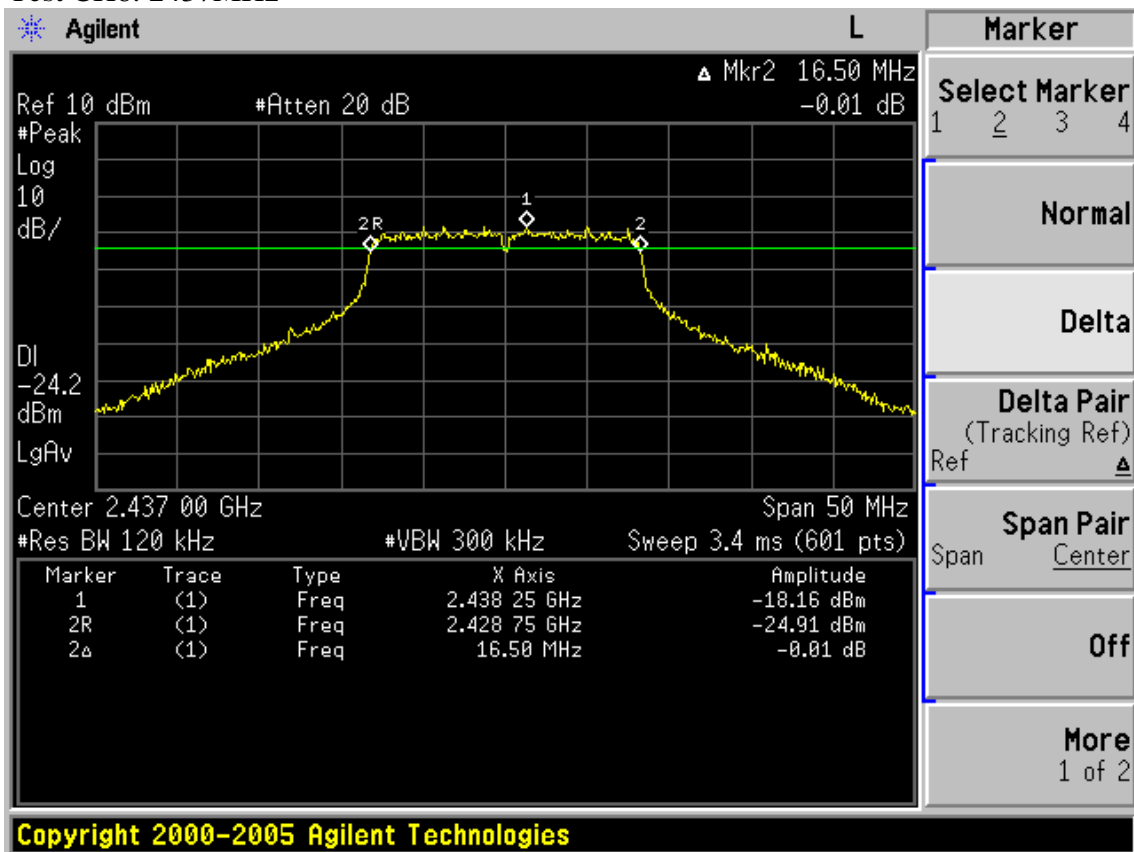


Test Mode: IEEE 802.11g TX

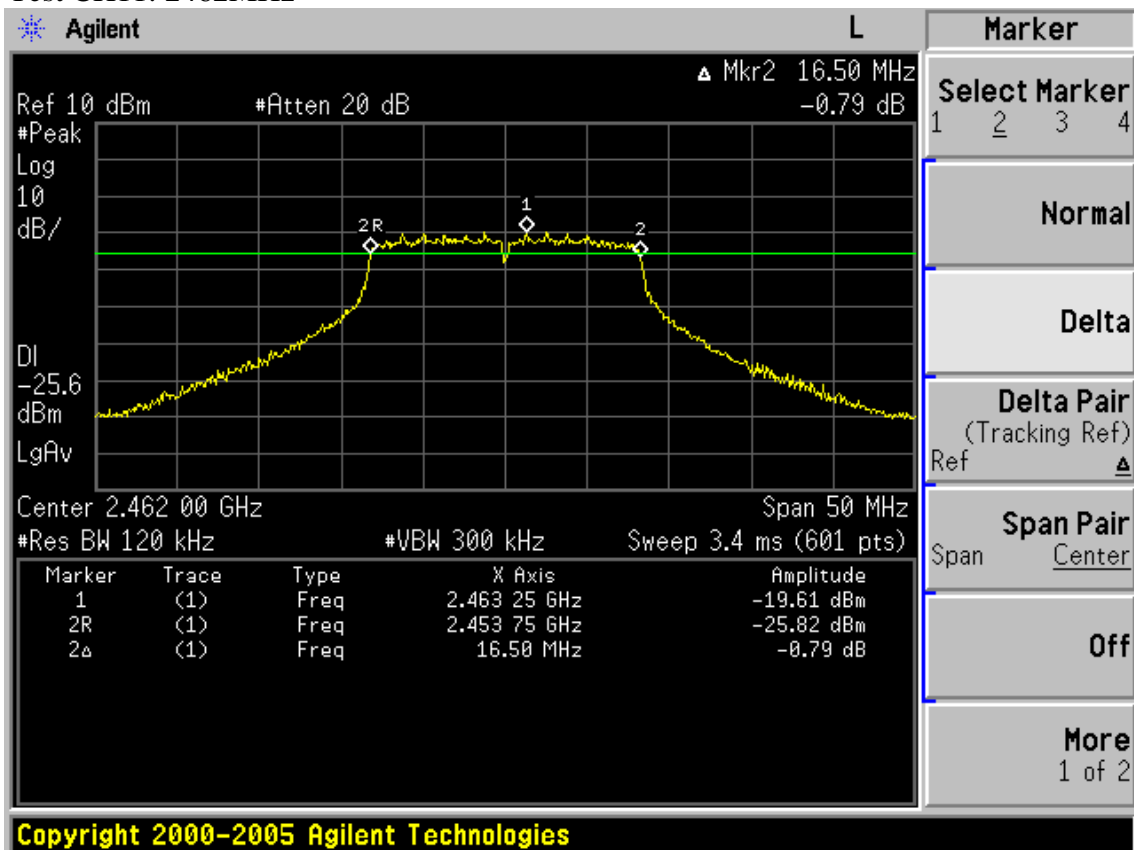
Test CH1: 2412MHz



Test CH6: 2437MHz

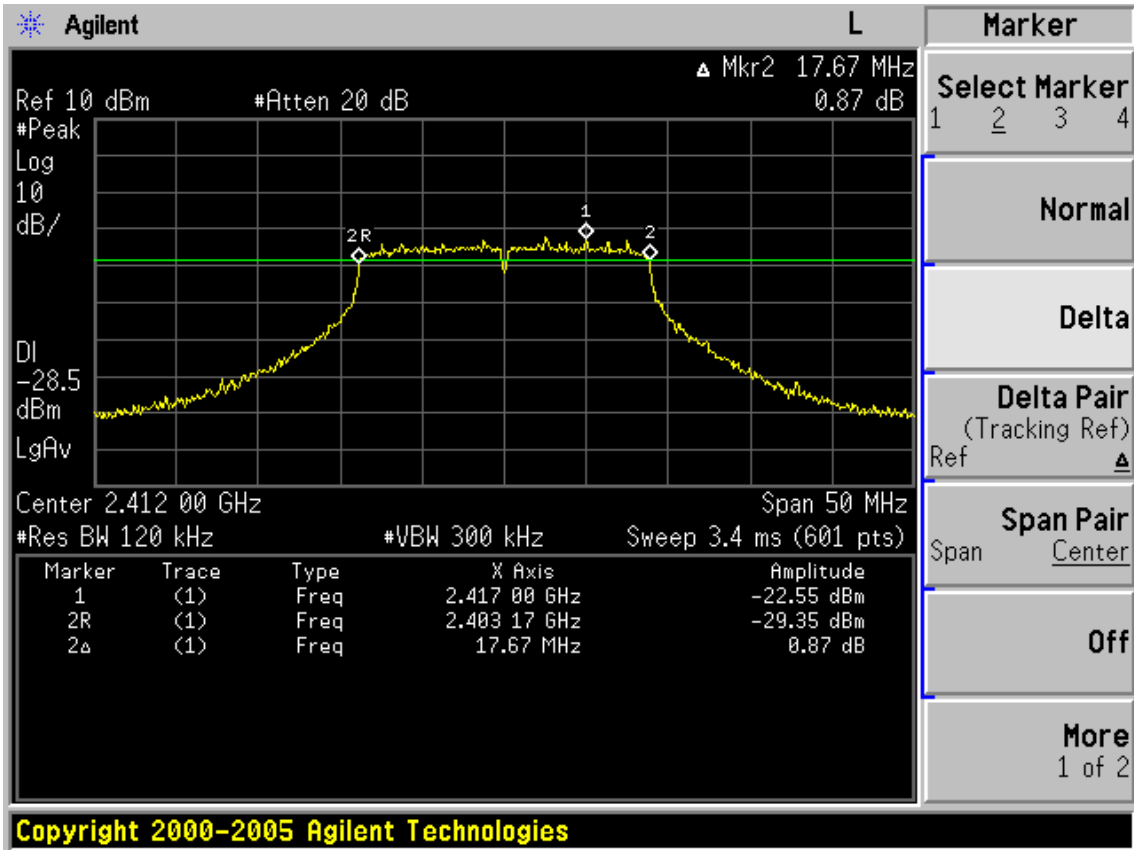


Test CH11: 2462MHz

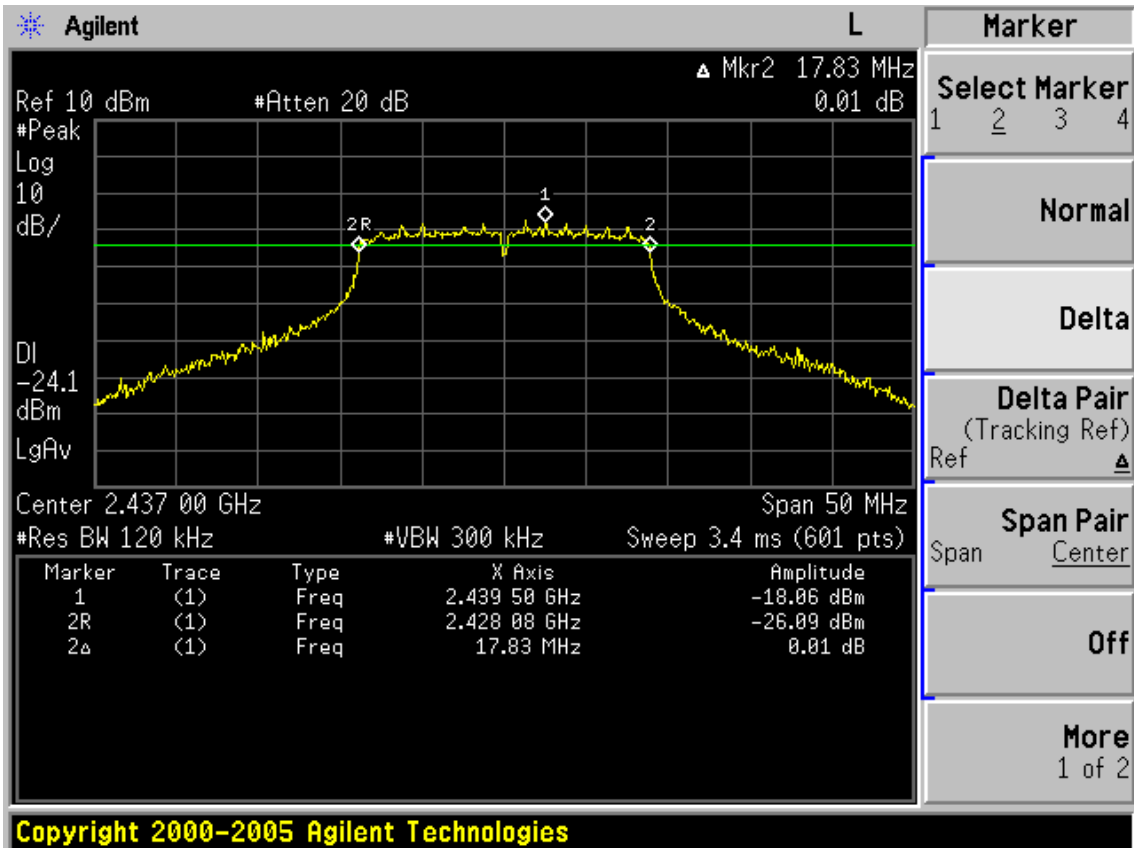


Test Mode: IEEE 802.11n HT20 TX

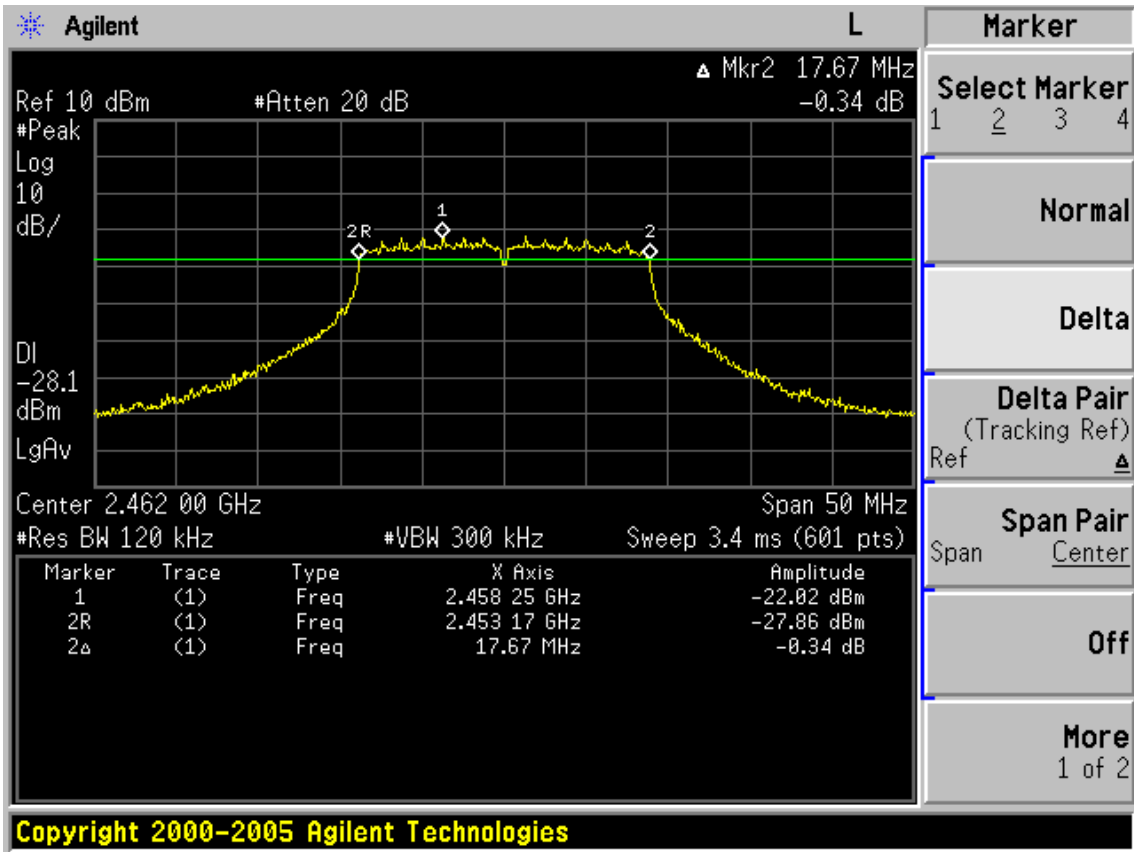
Test CH1: 2412MHz



Test CH6: 2437MHz

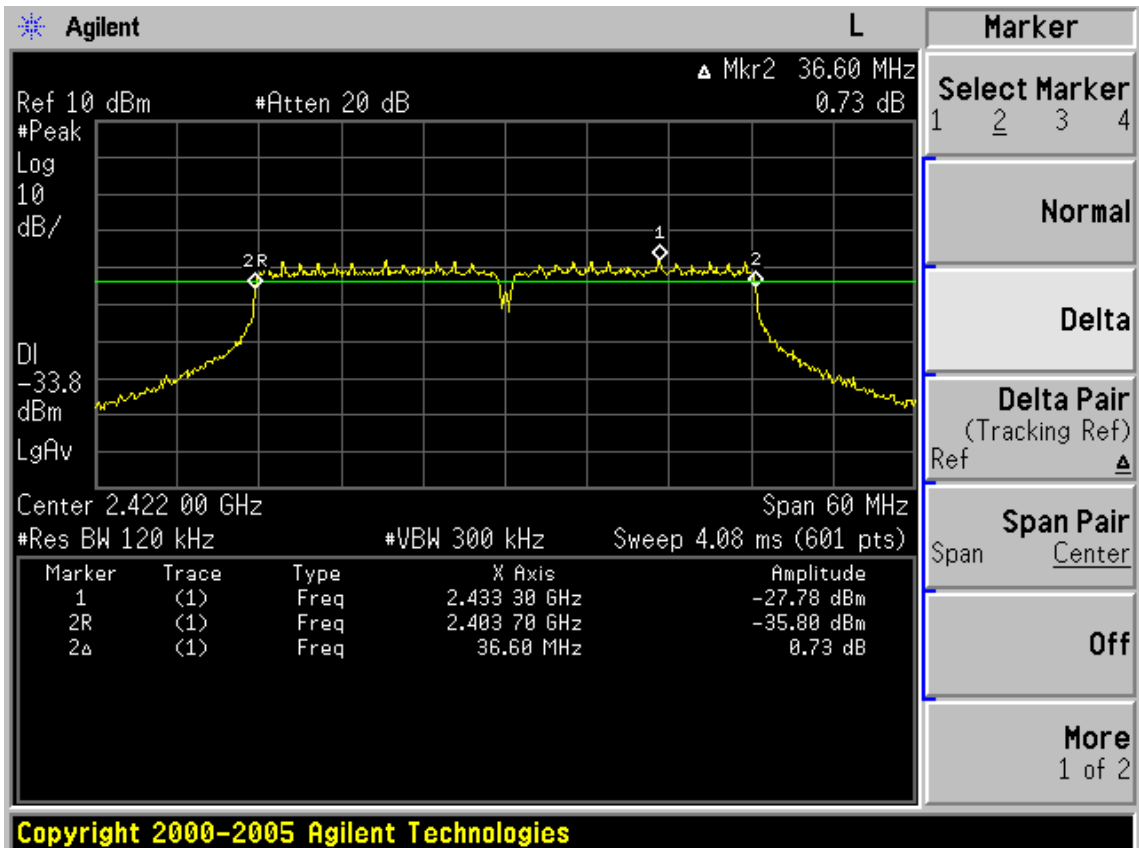


Test CH1: 2462MHz

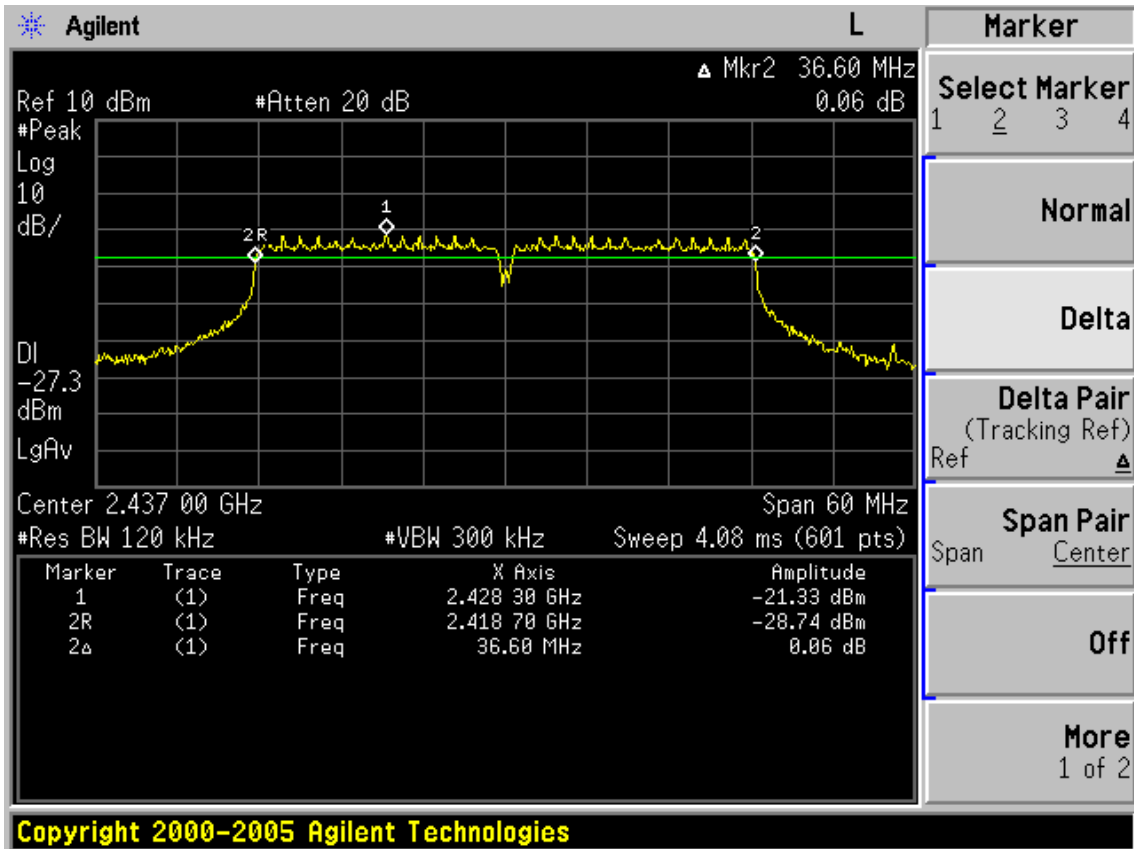


Test Mode: IEEE 802.11n HT40 TX

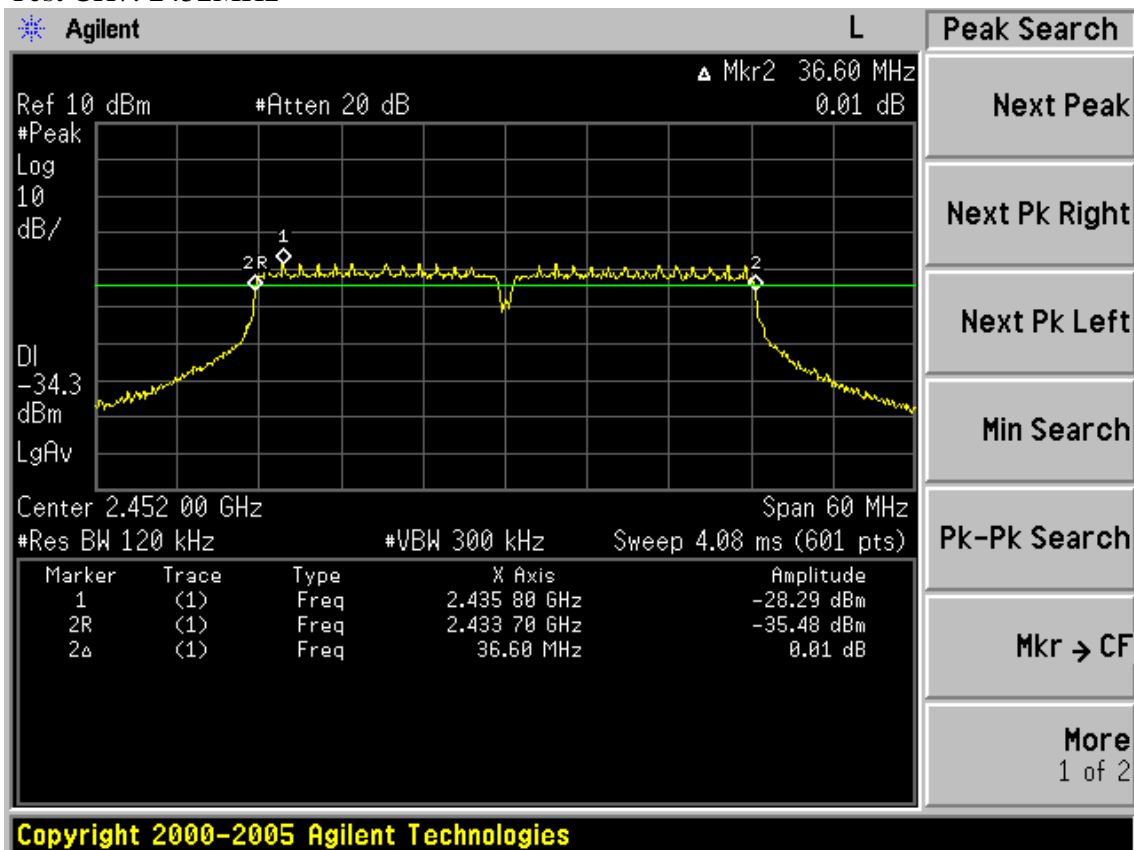
Test CH1: 2422MHz



Test CH4: 2437MHz



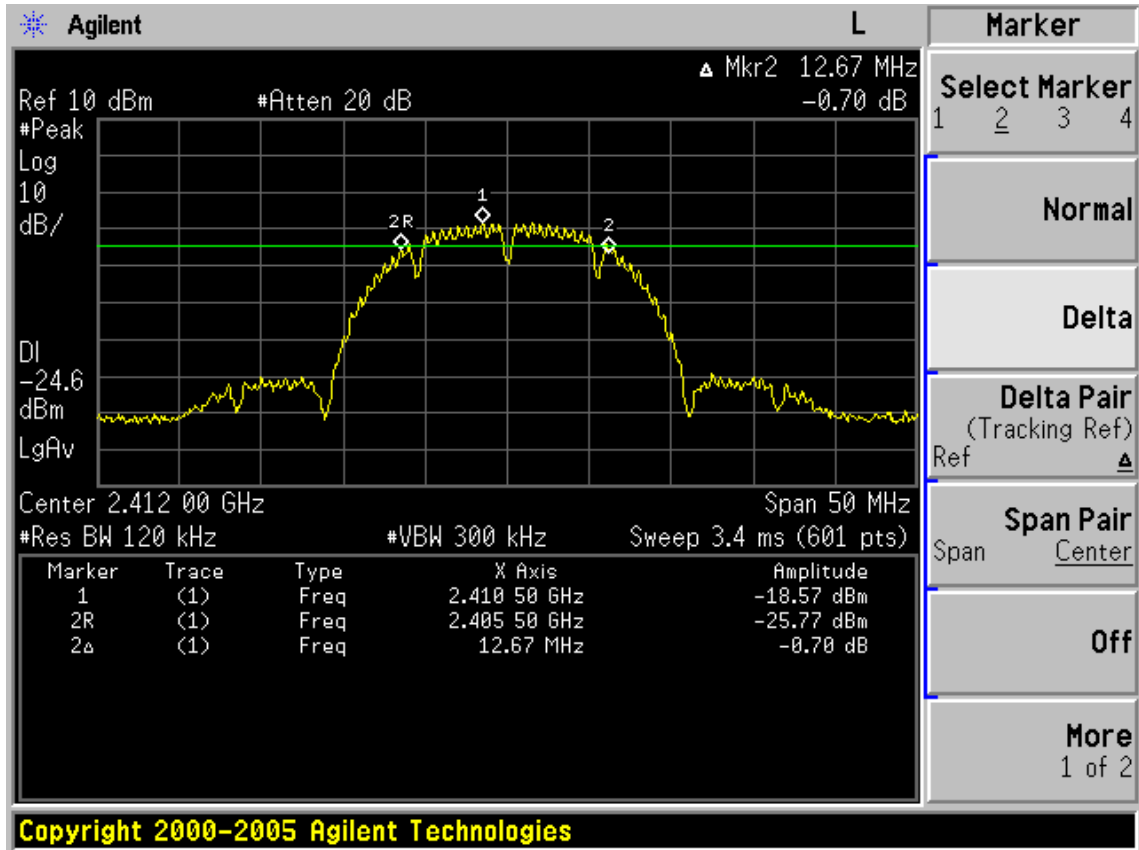
Test CH7: 2452MHz



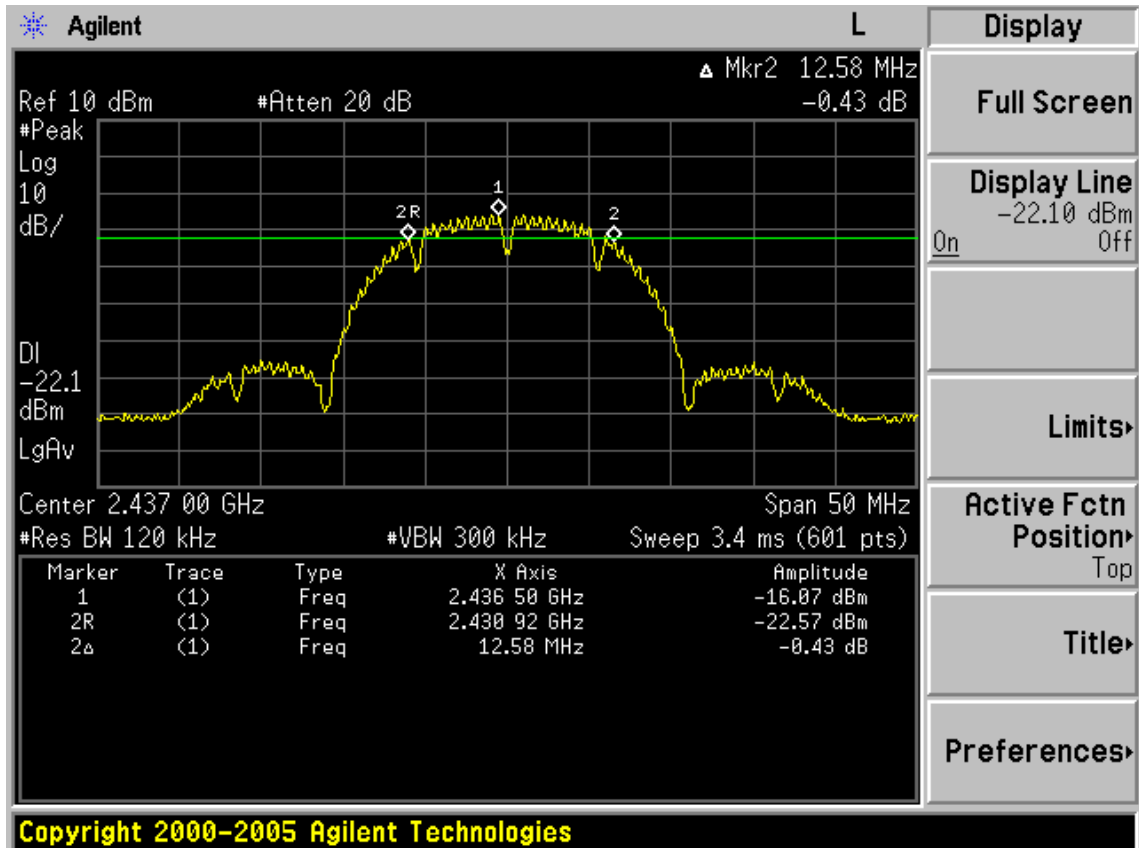
**Chain 2:**

Test Mode: IEEE 802.11b TX

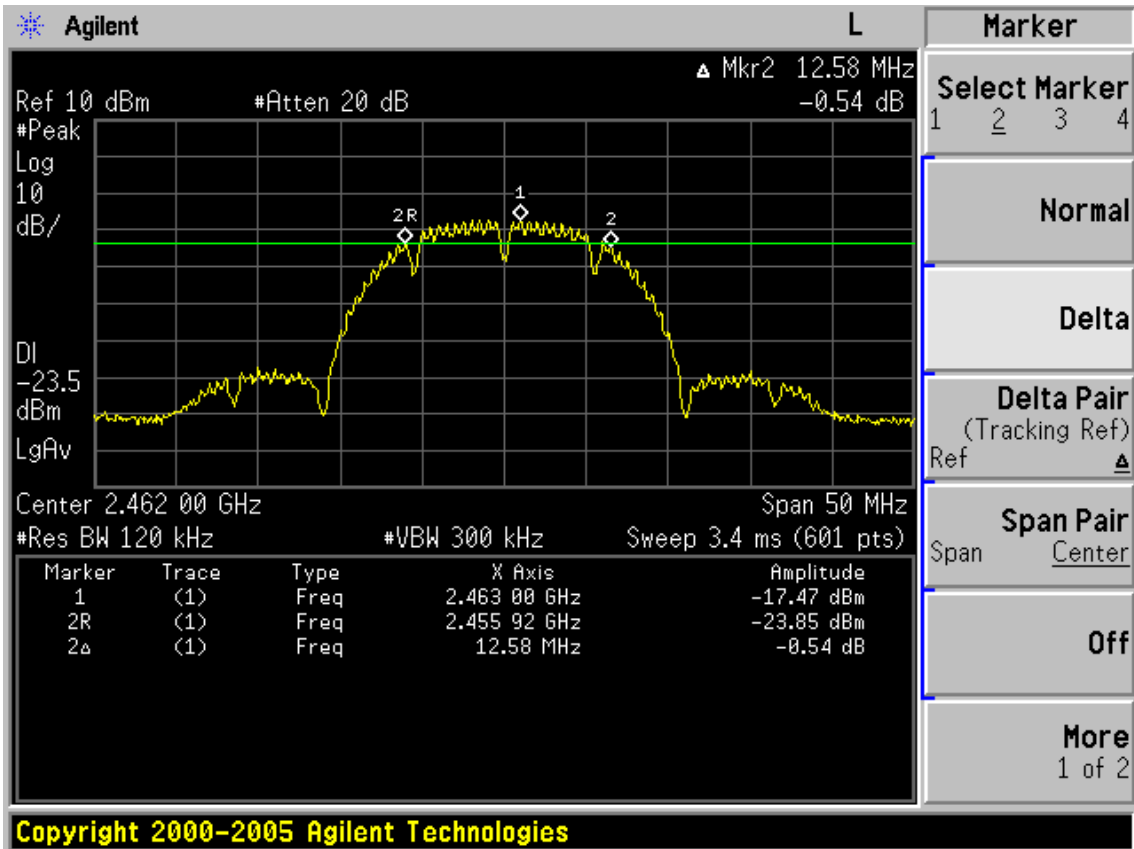
Test CH1: 2412MHz



Test CH6: 2437MHz

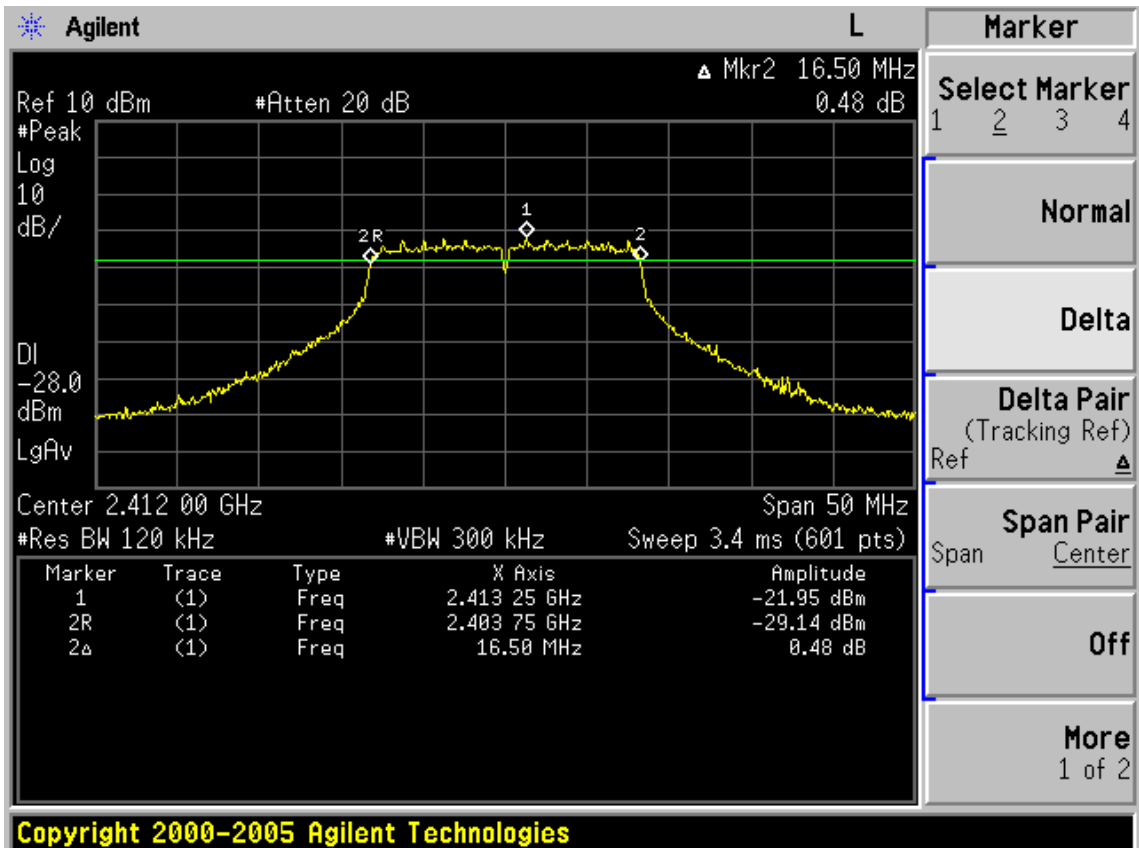


Test CH1: 2462MHz



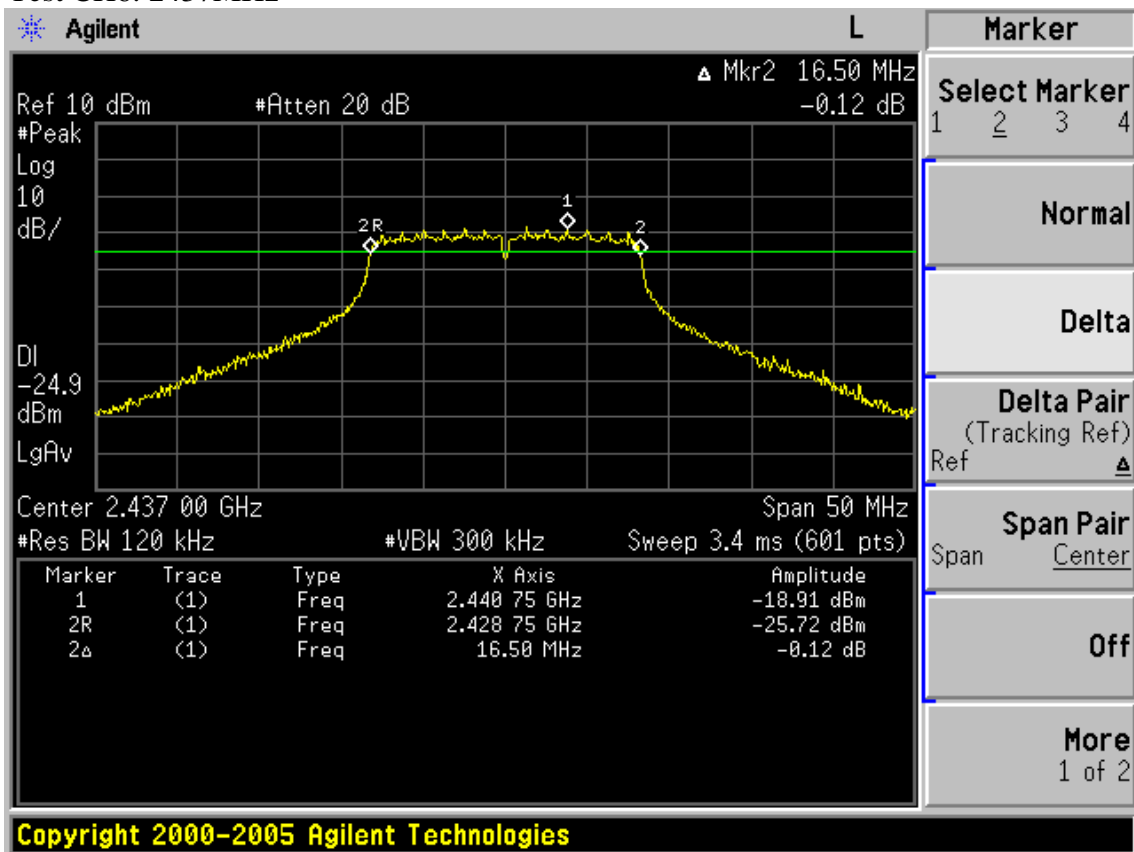
Test Mode: IEEE 802.11g TX

Test CH1: 2412MHz

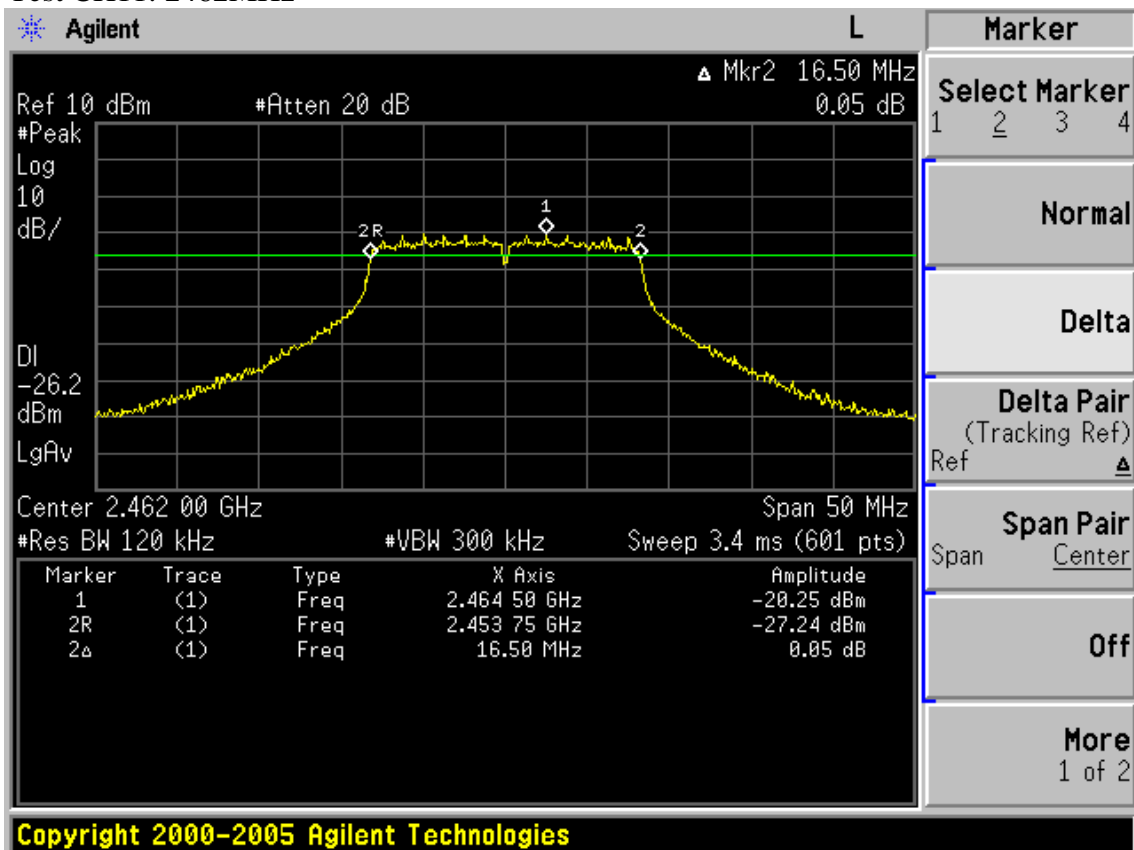




Test CH6: 2437MHz

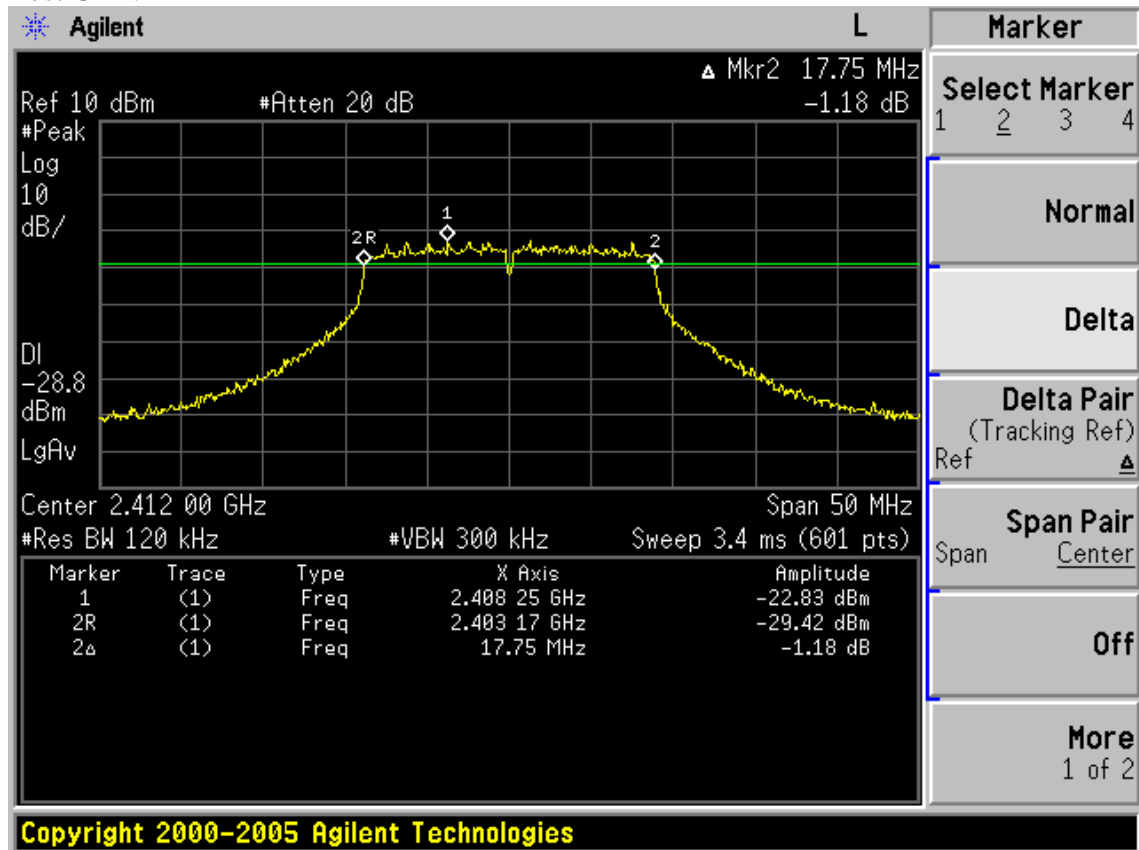


Test CH11: 2462MHz

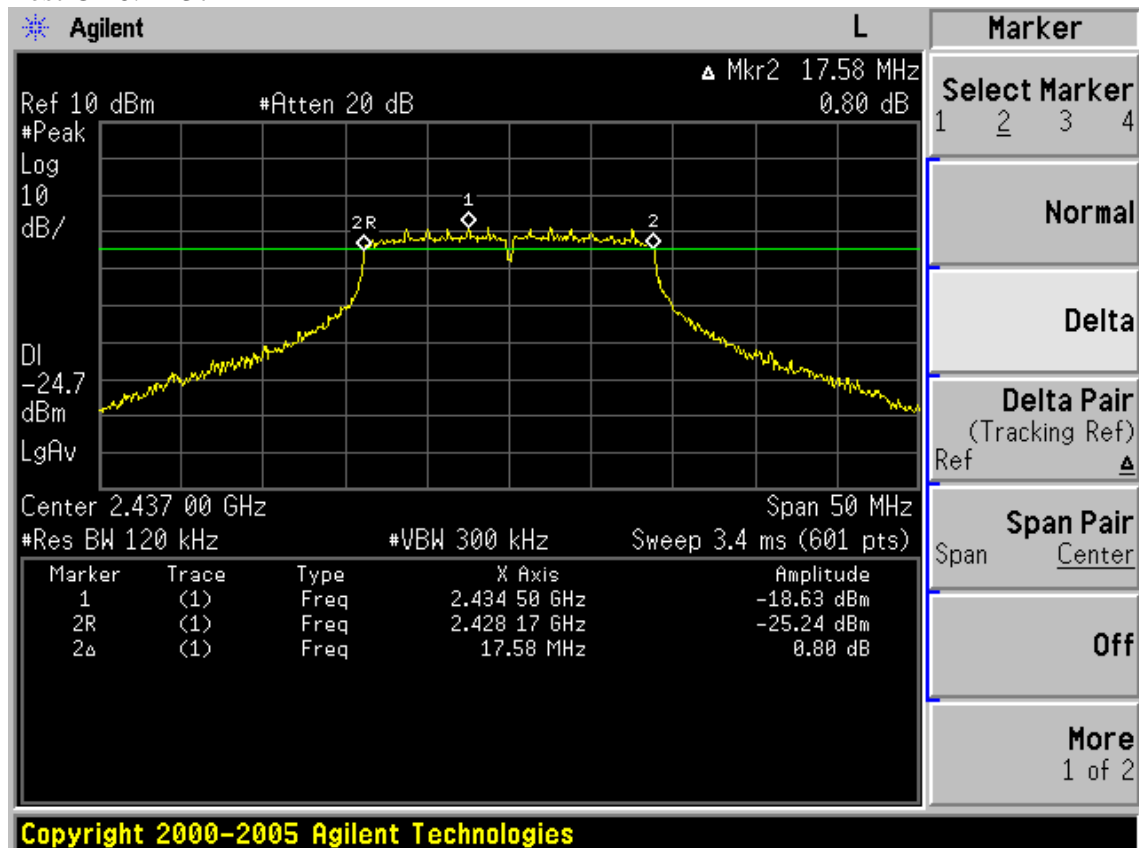


Test Mode: IEEE 802.11n HT20 TX

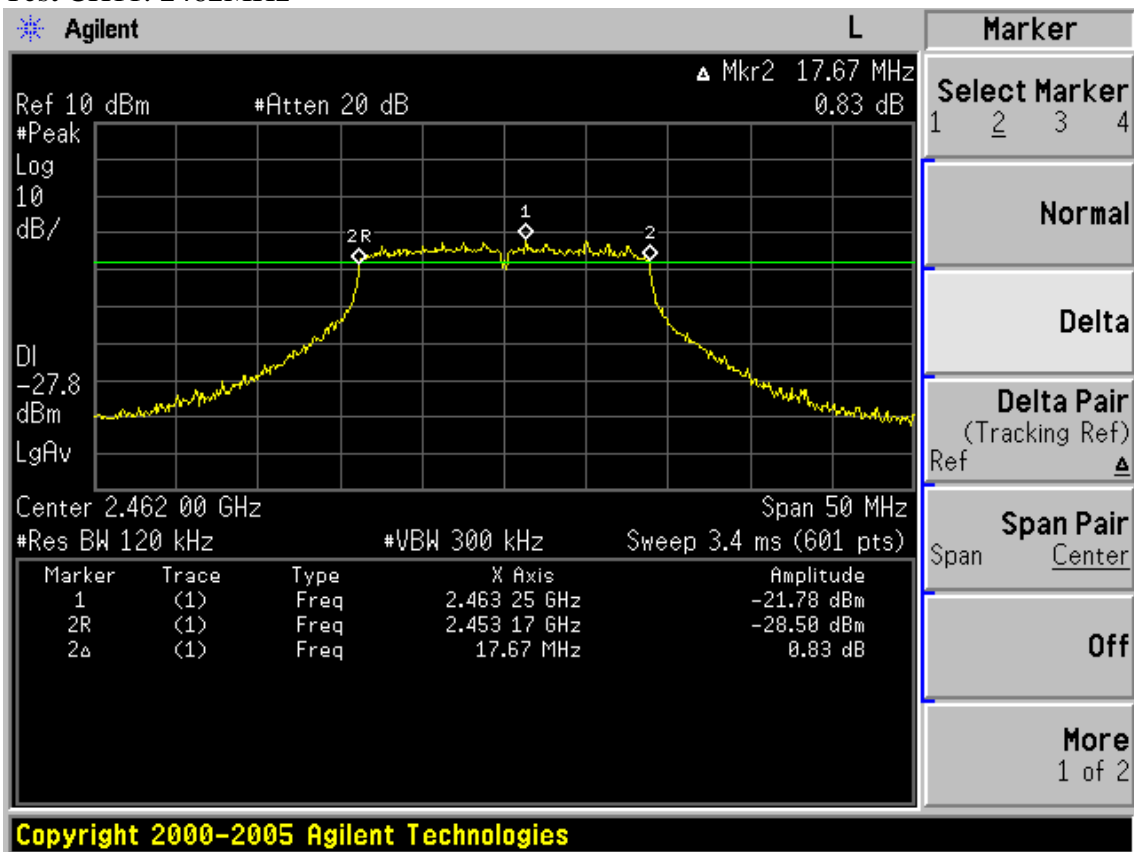
Test CH1: 2412MHz



Test CH6: 2437MHz

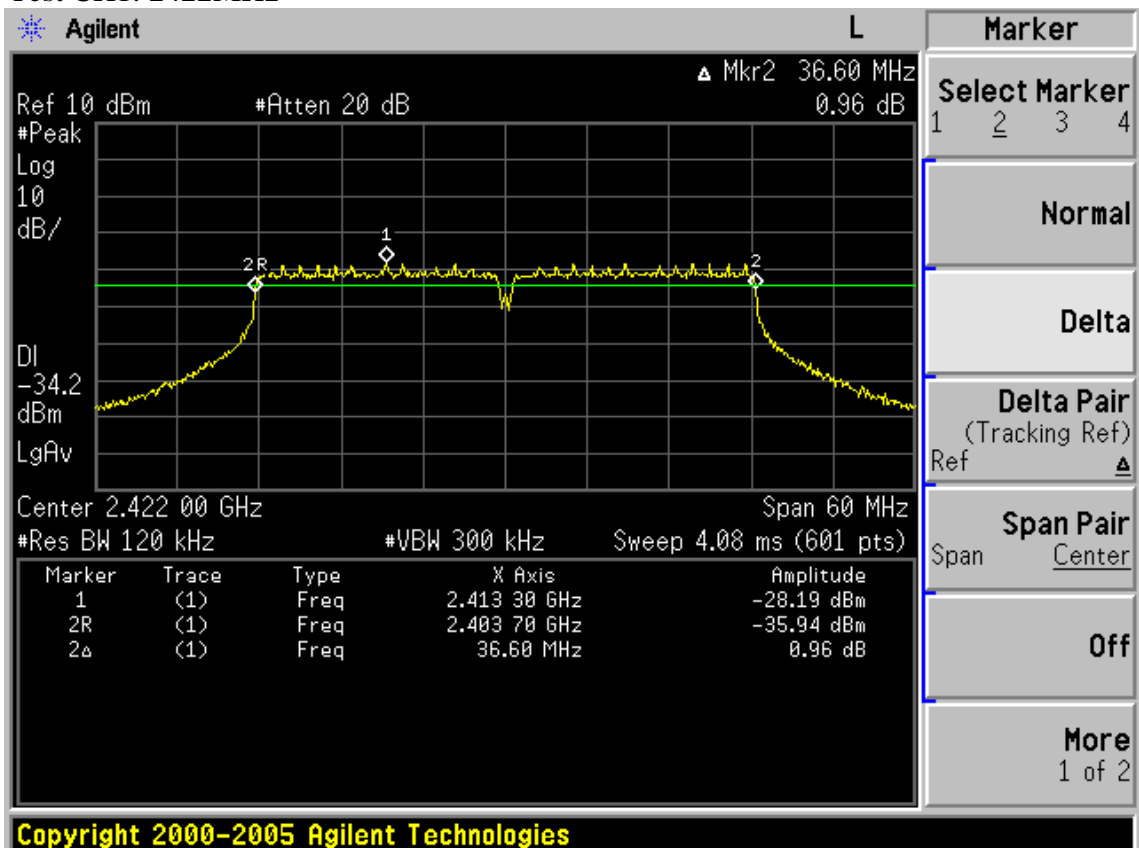


Test CH1: 2462MHz

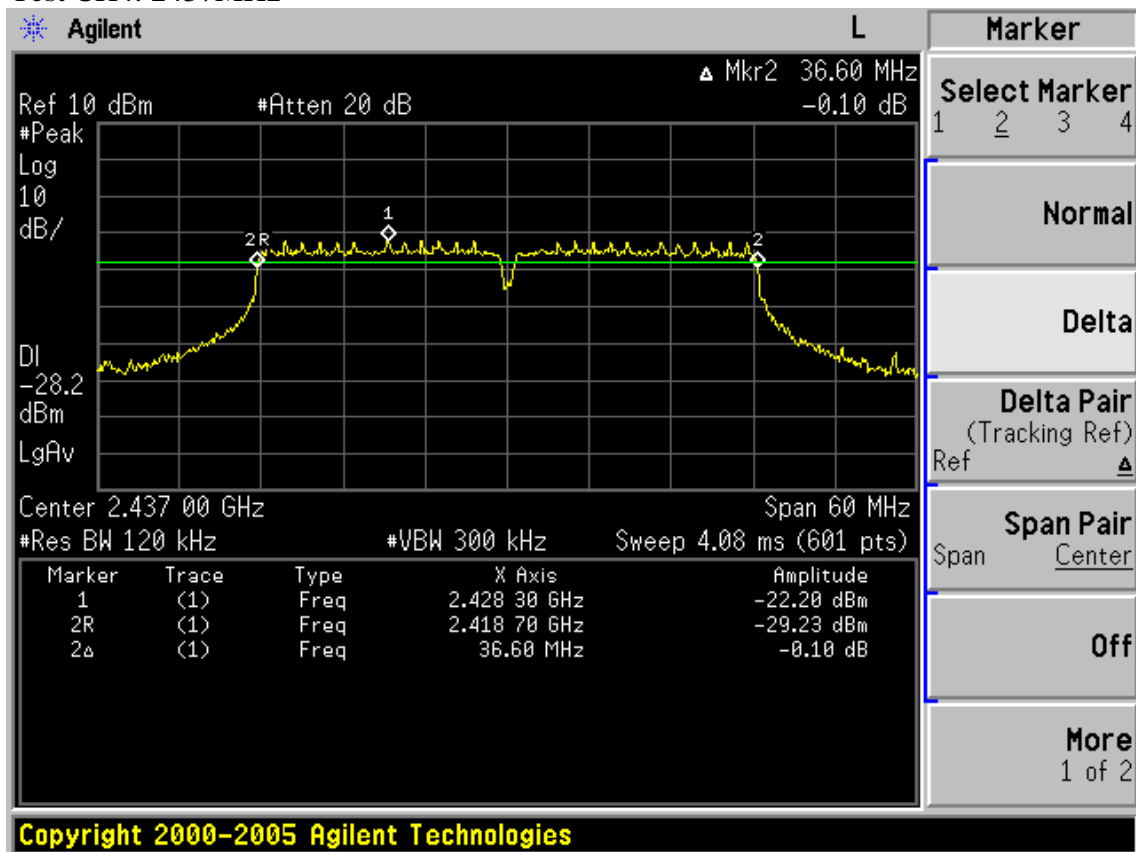


Test Mode: IEEE 802.11n HT40 TX

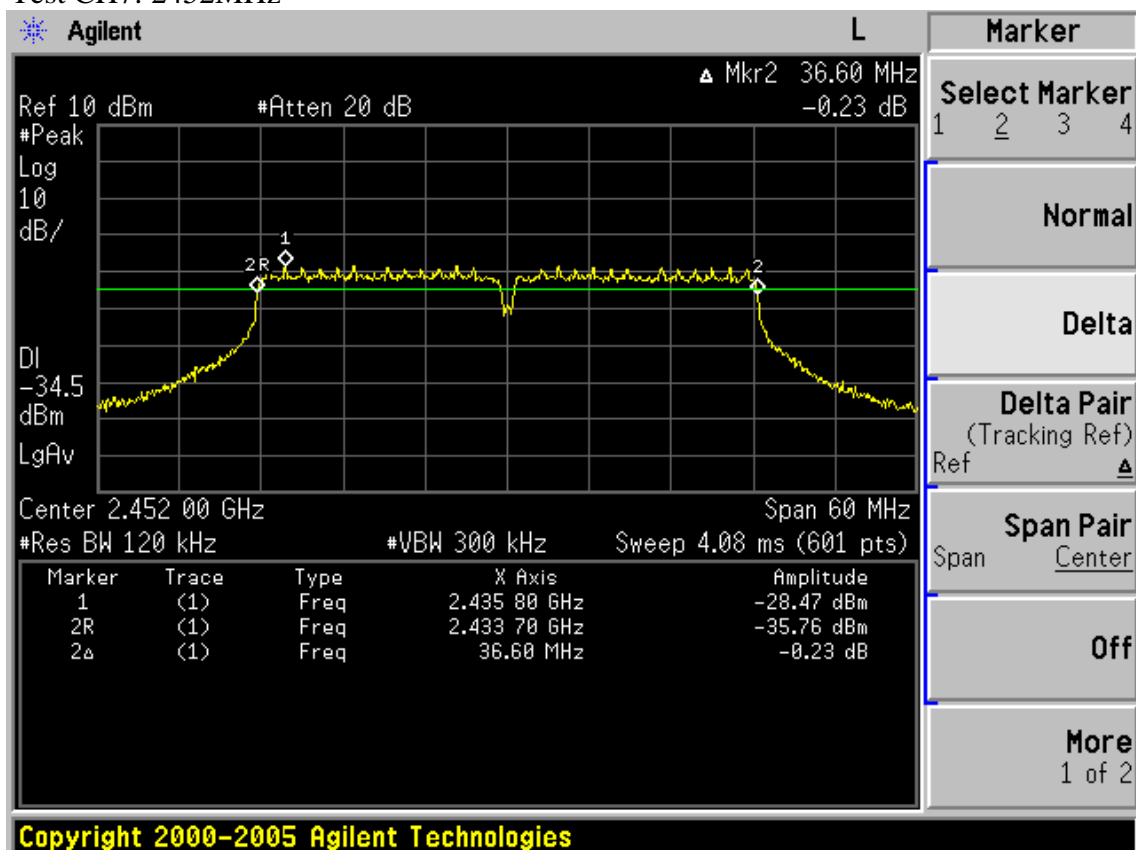
Test CH1: 2422MHz



Test CH4: 2437MHz



Test CH7: 2452MHz



## 8. OUTPUT POWER TEST

### 8.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 09	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 09	1 Year

### 8.2. Limit(FCC Part 15C 15.247 b(3))

For systems using digital modulation in the 2400—2483.5MHz, The Peak out put Power shall not exceed 1W(30dBm)

### 8.3. Test Procedure

- 1, For IEEE 802.11b/g and IEEE802.11n HT20 mode, use power output option 1 method of KDB 558074, the transmitter output was connection to a power meter by suitable attenuation, read out the peak output power of device.
- 2, For IEEE802.11n HT40 mode, because the signal's EBW is about 40MHz and above 20MHz bandwidth of power sensor ML2491A. So the channel power measure function of spectrum Analyzer was used to measure out the PK output power of device. According power output option 2, method #3 of KDB558074.

## 8.4. Test Results

EUT: 300Mbps Wireless N Mini PCI Adapter M/N:TL-WN861N								
Power: DC 3.3V From PC Input AC 120V/60Hz								
Data Rate:11b 1Mbps ; 11g : 6Mbps ; 11n HT20 : 6.5Mbps ; 11n HT40 : 13.5Mbps(Note 1)								
Ambient Temperature:23℃			Relative Humidity: 60%					
Test date:2010-01-06			Test site: RF site Tested By: Sunny-Lu					
Cable Loss: 0.6dB Attenuator: 20dB								
Test CH	11b,11g,11n HT20		CH1:2412MHz CH6:2437MHz CH11:2462MHz					
Test CH	11n HT40		CH1:2422MHz CH4:2437MHz CH7:2452MHz					
Mode	CH	Chain1		Chain2		Result		
		Read (dBm)	Level (dBm)	Read (dBm)	Level (dBm)	Total Power (dBm)	Limit (dBm)	Conclusion
11b	CH1	-3.87	16.73	-3.52	17.08	NA	30.00	PASS
	CH6	-3.04	17.56	-2.37	18.23	NA	30.00	PASS
	CH11	-2.92	17.68	-3.49	17.11	NA	30.00	PASS
11g	CH1	-0.71	19.89	0.18	20.78	NA	30.00	PASS
	CH6	1.00	21.60	1.52	22.12	NA	30.00	PASS
	CH11	0.45	21.05	1.45	22.05	NA	30.00	PASS
11n HT20	CH1	-1.55	19.05	-0.37	20.23	22.69	30.00	PASS
	CH6	1.38	21.98	1.47	22.07	25.04	30.00	PASS
	CH11	-0.28	20.32	-0.39	20.21	23.28	30.00	PASS
11n HT40	CH1	-4.58	16.02	-4.82	15.78	18.91	30.00	PASS
	CH4	2.29	22.89	2.45	23.05	25.98	30.00	PASS
	CH7	-5.28	15.32	-5.39	15.21	18.28	30.00	PASS
Note1:According Exploratory test, These data rate have the maximum output power								
Note2:Level=Read+ cable loss+Attenuator								
Note3:Total Power=Chain1 level+Chain2 level (Liner)								

## 9. POWER SPECTRAL DENSITY TEST

### 9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 09	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 09	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 09	1 Year

### 9.2. Limit

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

### 9.3. Test Procedure

The transmitter output was connected to a spectrum analyzer. Power density was measured by spectrum analyzer with 3kHz RBW and 30kHz VBW, sweep time=span/3kHz.

## 9.4.Test Results

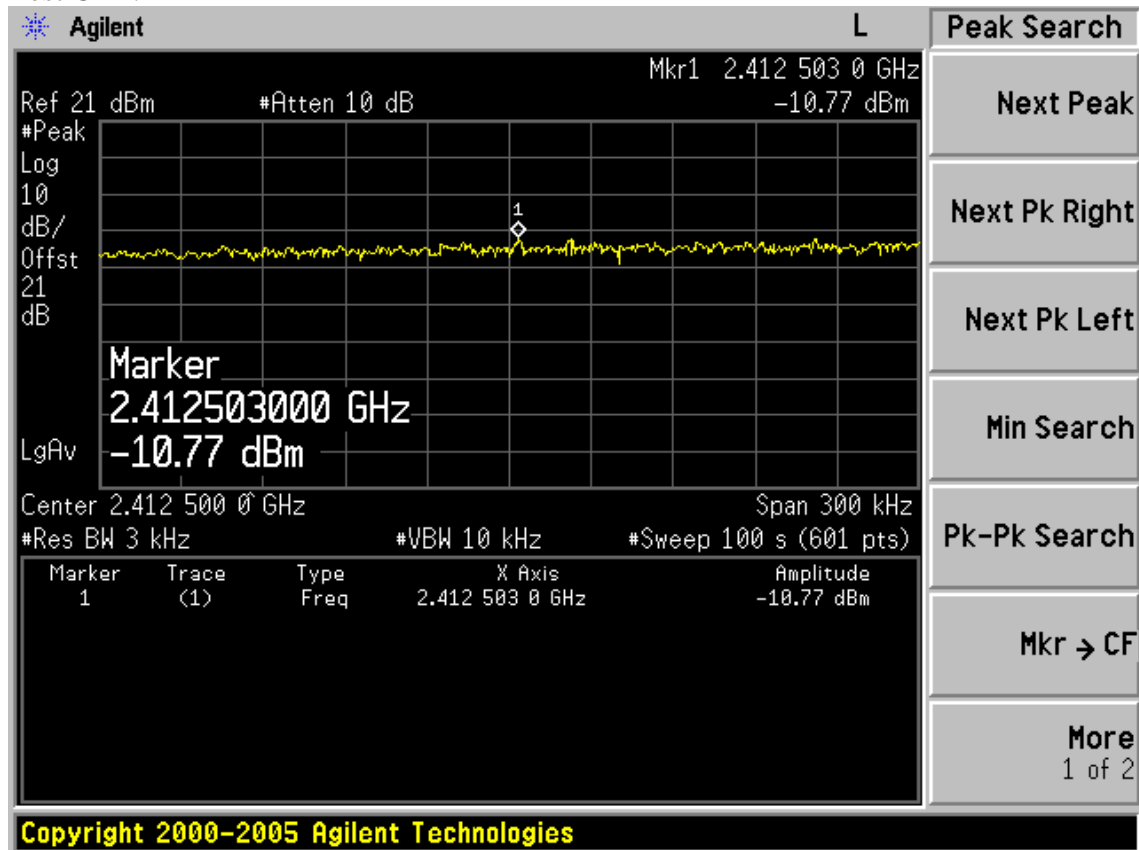
EUT:300Mbps Wireless N Mini PCI Adapter M/N:TL-WN861N						
Power: DC 3.3V From PC input AC 120V/60Hz						
Data Rate:11b 1Mbps ; 11g : 6Mbps ; 11n HT20 : 6.5Mbps ; 11n HT40 : 13.5Mbps(Note 1)						
Ambient Temperature:25℃		Relative Humidity: 60%				
Test date:2010/01/06		Test site: RF site		Tested By: Sunny-Lu		
Cable Loss : 1.0dB Attenuator : 20 dB Duty cycle : 100%						
Test CH	11b,11g,11n HT20	CH1:2412MHz CH6:2437MHz CH11:2462MHz				
Test CH	11n HT40	CH1:2422MHz CH4:2437MHz CH7:2452MHz				
Mode	CH	Chain1	Chain2	Result		
		Read Level (dBm)	Read Level (dBm)	Total Power (dBm)	Limit (dBm)	Conclusion
11b	CH1	-10.77	-10.57	N/A	8	PASS
	CH6	-9.44	-7.93	N/A	8	PASS
	CH11	-10.14	-10.92	N/A	8	PASS
11g	CH1	-13.49	-13.28	N/A	8	PASS
	CH6	-10.70	-11.15	N/A	8	PASS
	CH11	-13.40	-12.15	N/A	8	PASS
11n HT20	CH1	-16.55	-14.63	-12.47	8	PASS
	CH6	-11.95	-11.83	-8.88	8	PASS
	CH11	-14.91	-15.02	-11.95	8	PASS
11n HT40	CH1	-24.05	-20.56	-18.95	8	PASS
	CH4	-14.19	-14.05	-11.11	8	PASS
	CH7	-21.18	-22.81	-18.91	8	PASS
Note1: According Exploratory test, These data rate have the maximum output power						
Note2: cable loss and Attenuator were offset to the spectrum analyzer						
Note3: For 11n HT20 and 11n HT40 , Total power=chain1 level+chain2 level ( liner)						



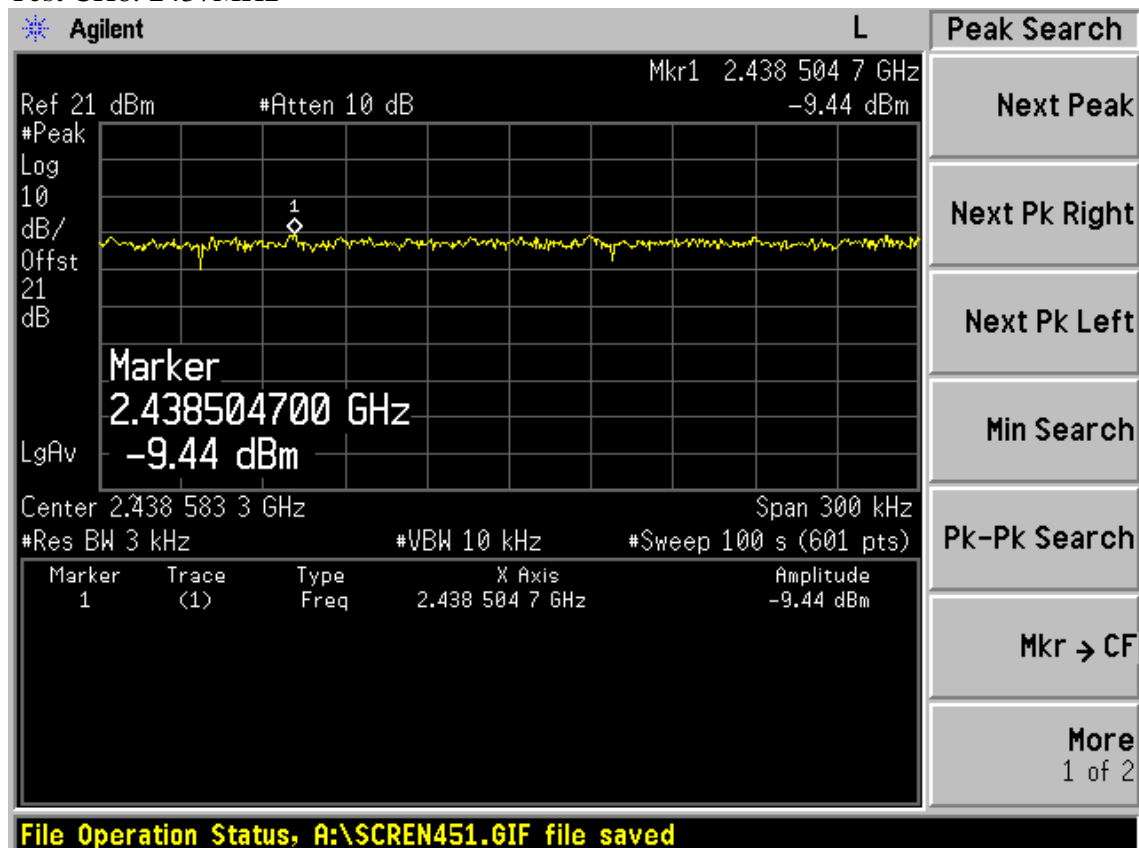
**Chain 1:**

Test Mode: IEEE 802.11b TX

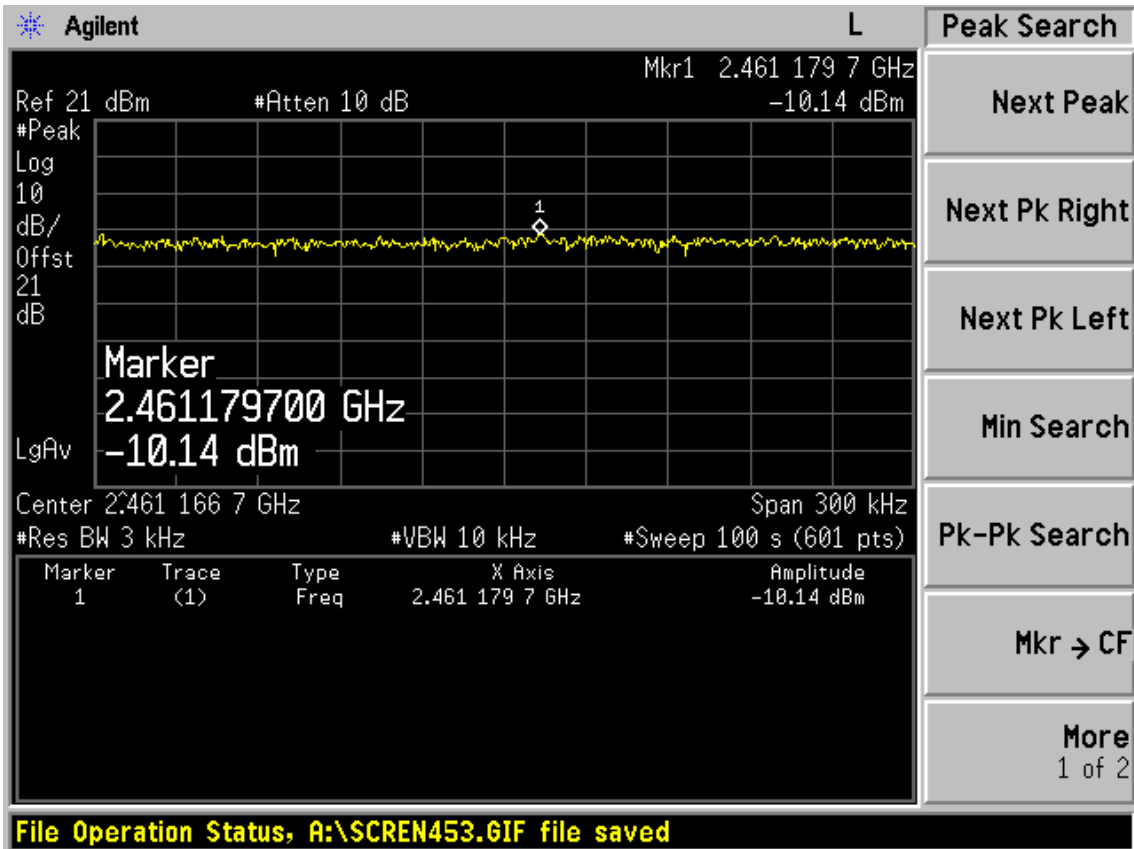
Test CH1: 2412MHz



Test CH6: 2437MHz

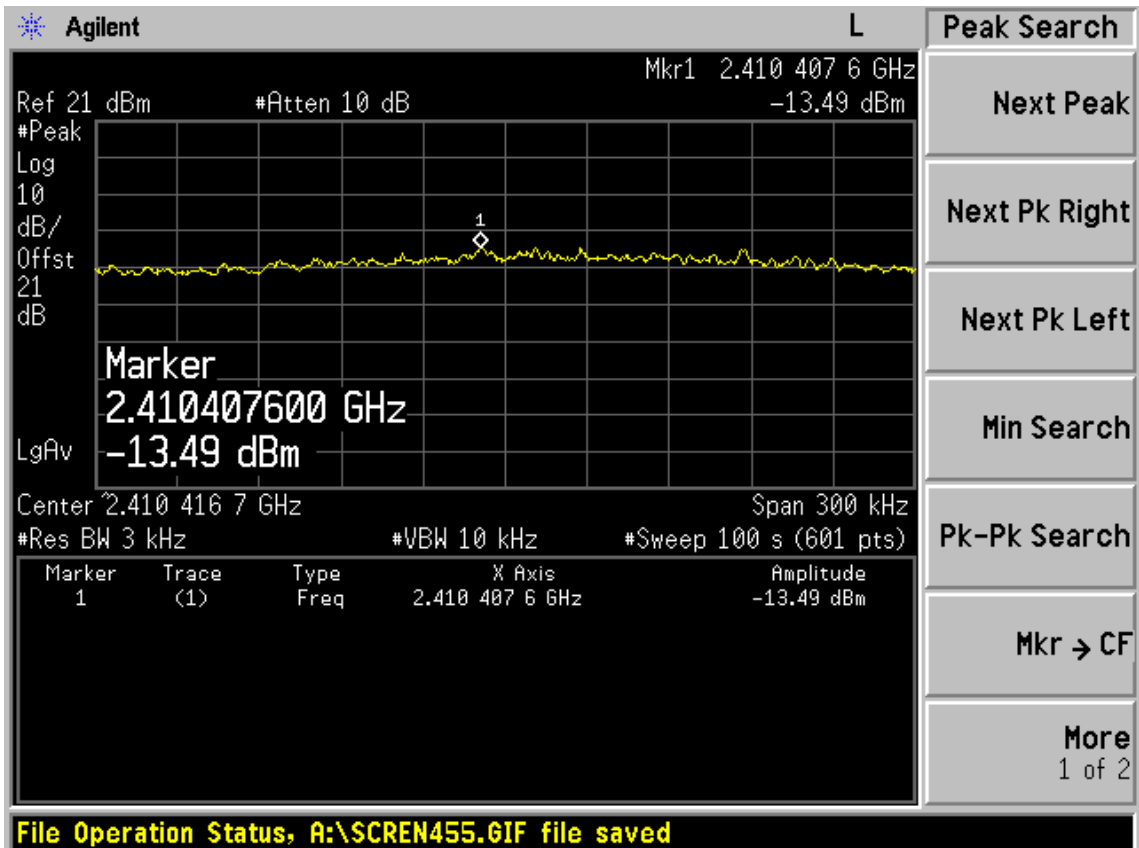


Test CH1: 2462MHz

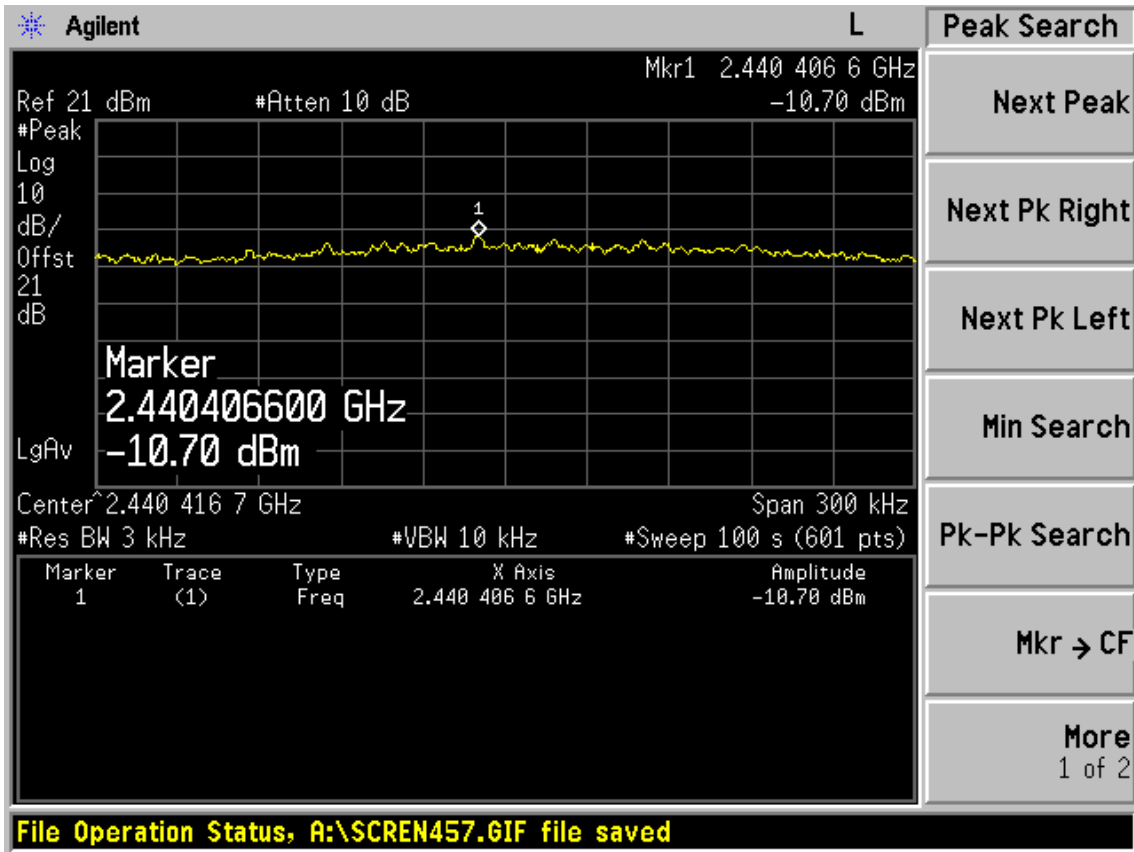


Test Mode: IEEE 802.11g TX

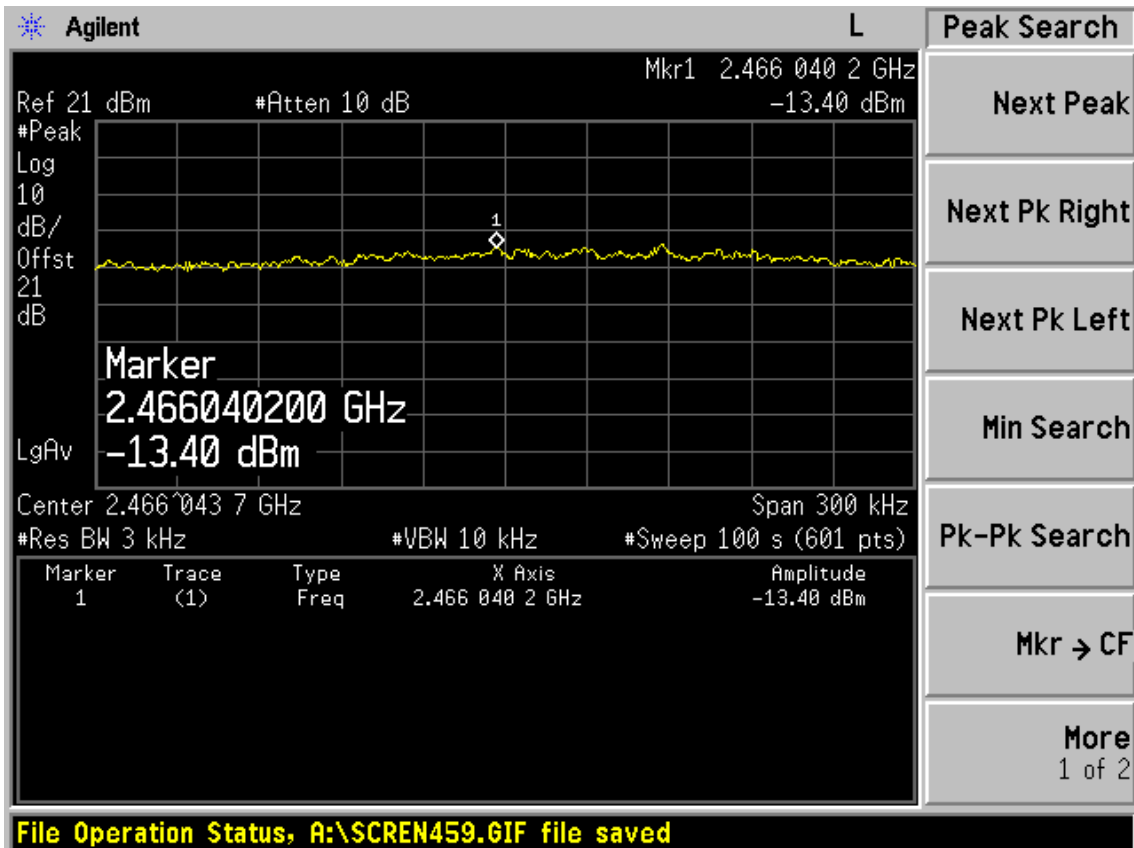
Test CH1: 2412MHz



Test CH6: 2437MHz

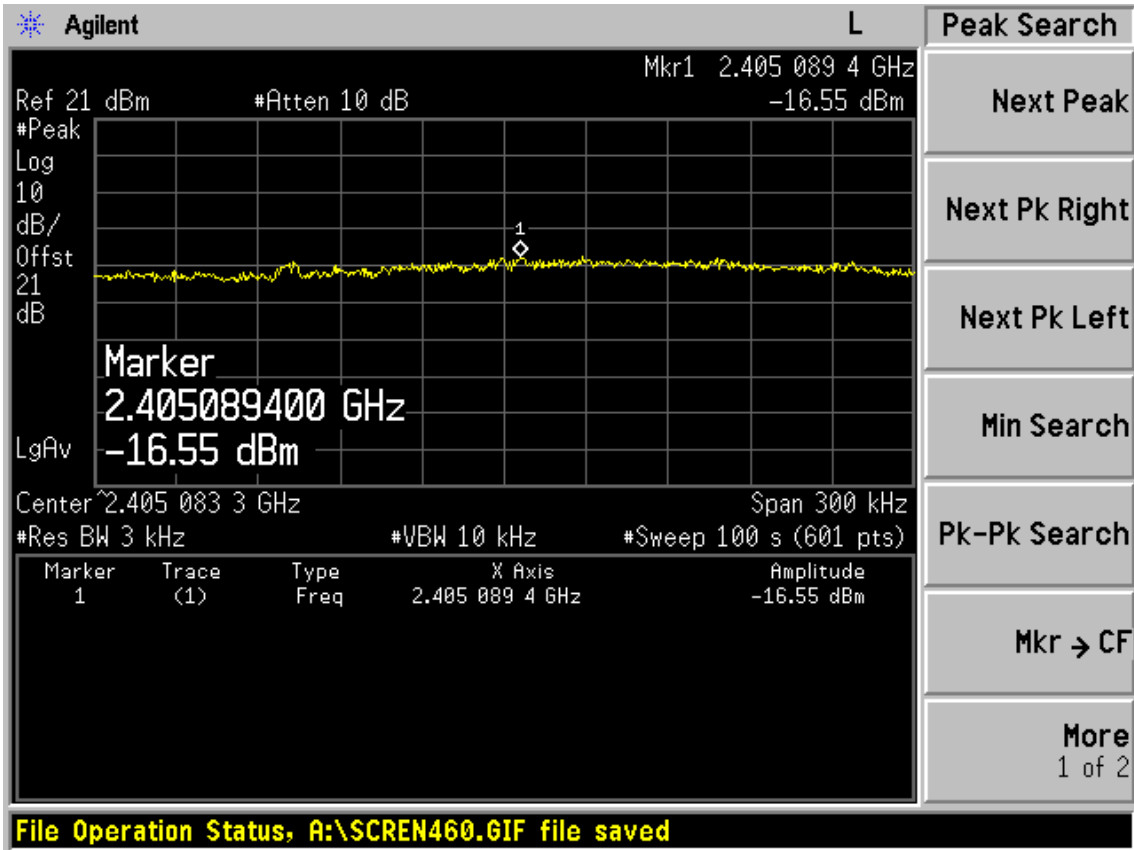


Test CH11: 2462MHz

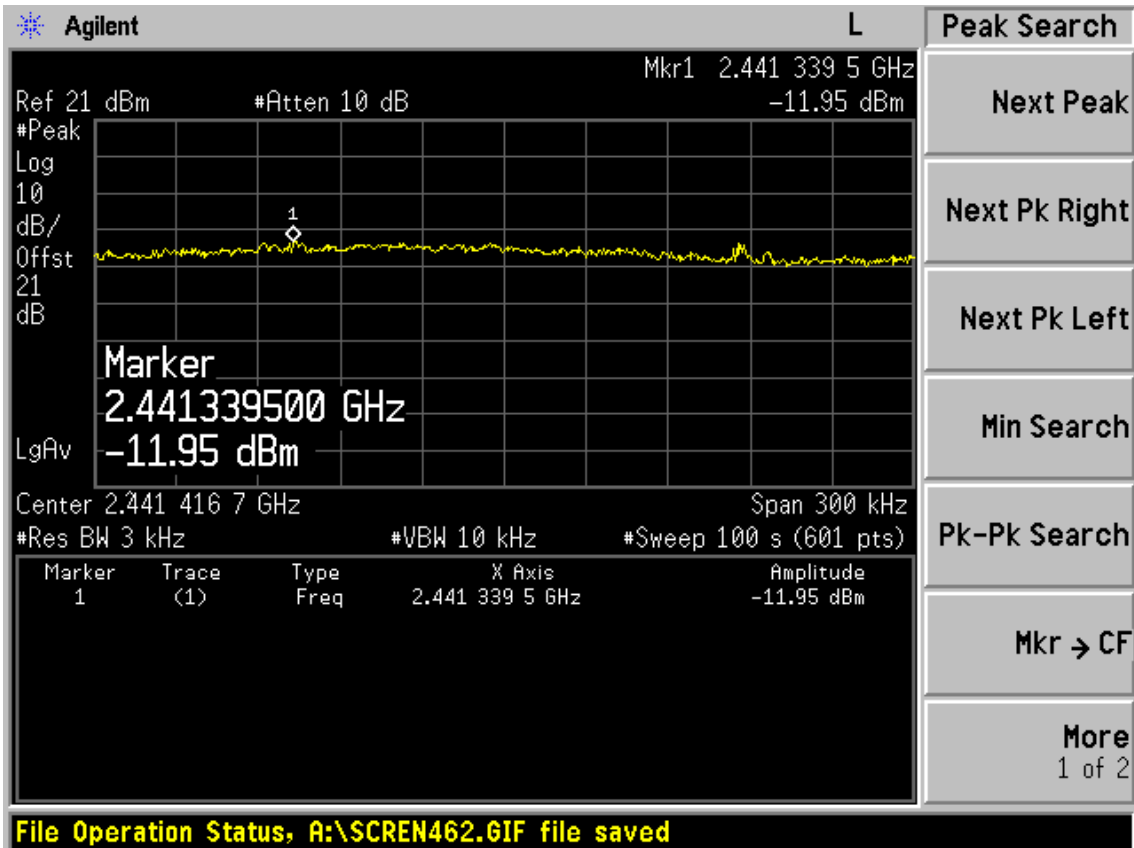


Test Mode: IEEE 802.11n HT20 TX

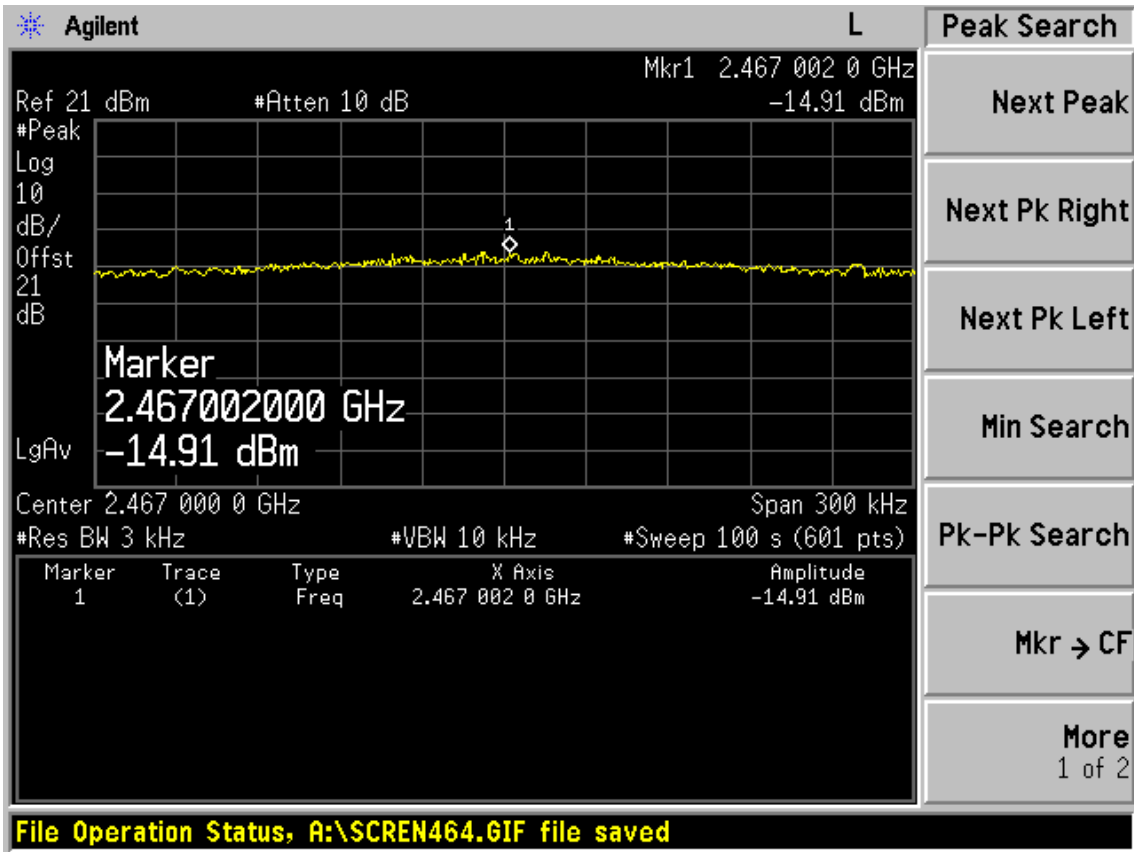
Test CH1: 2412MHz



Test CH6: 2437MHz

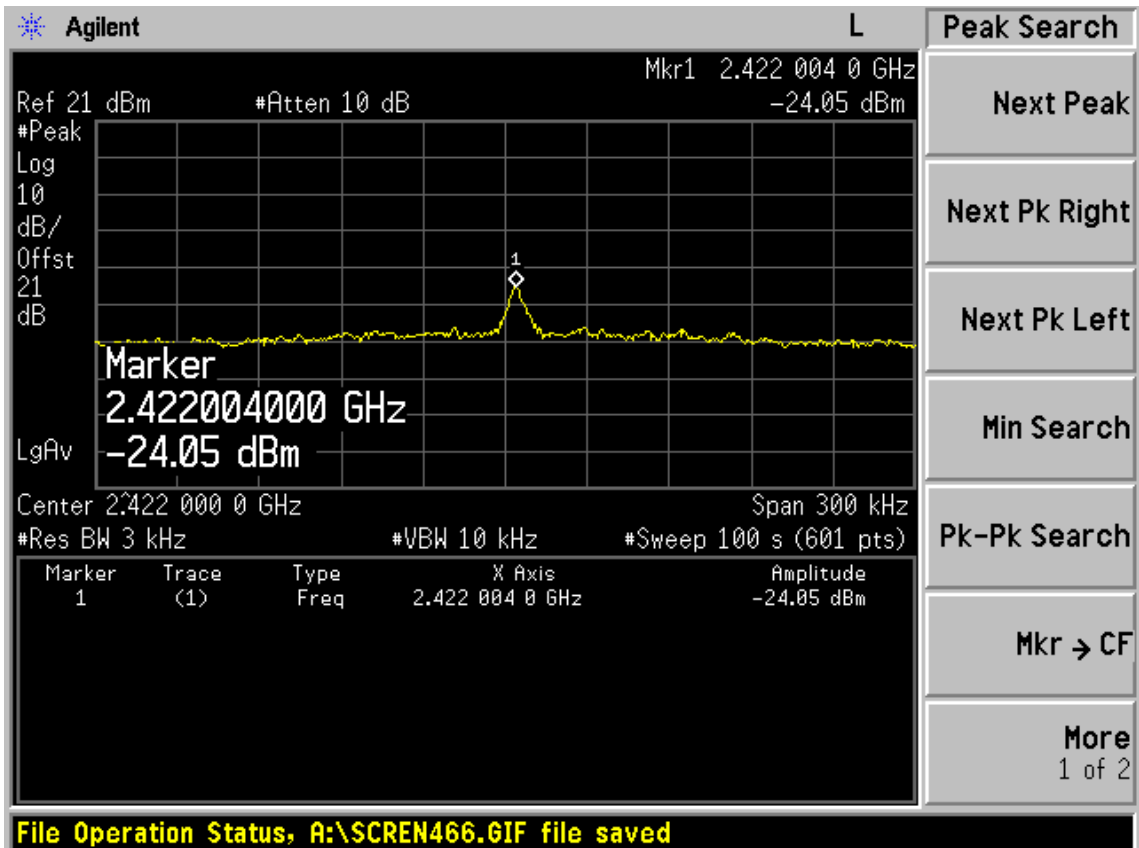


Test CH1: 2462MHz

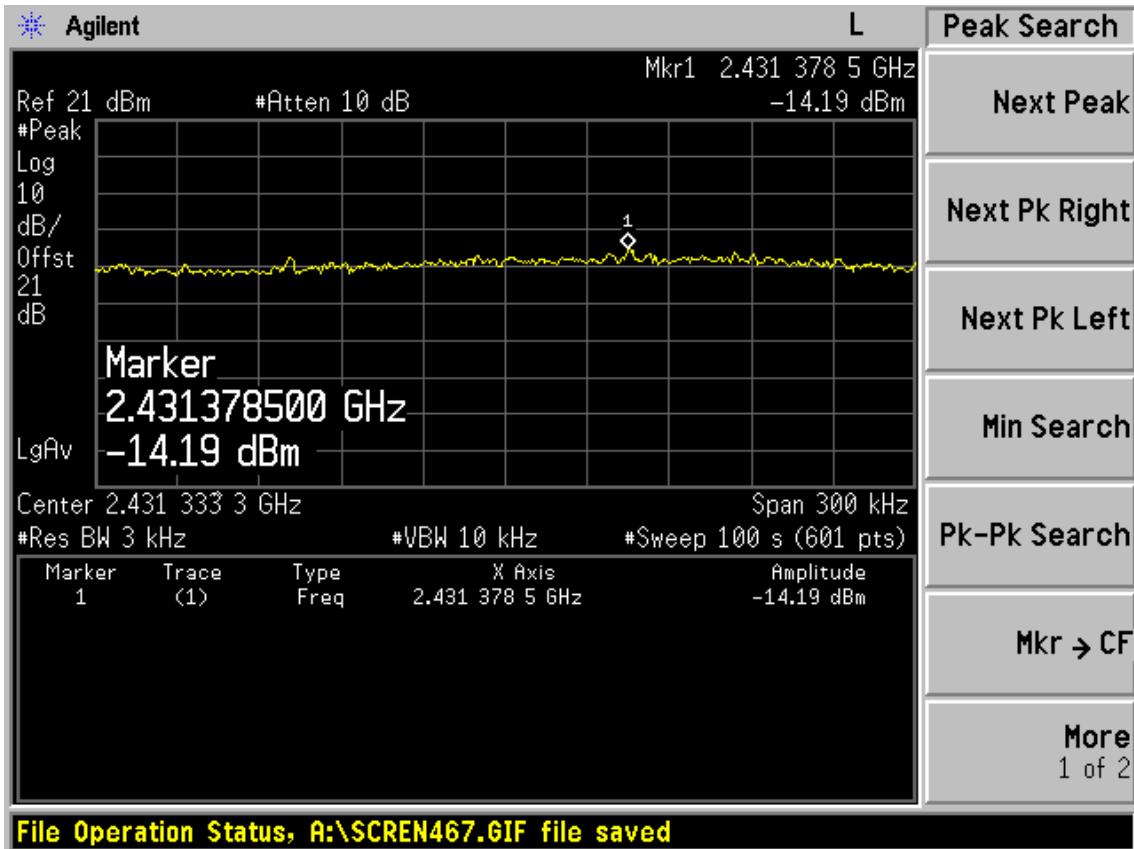


Test Mode: IEEE 802.11n HT40 TX

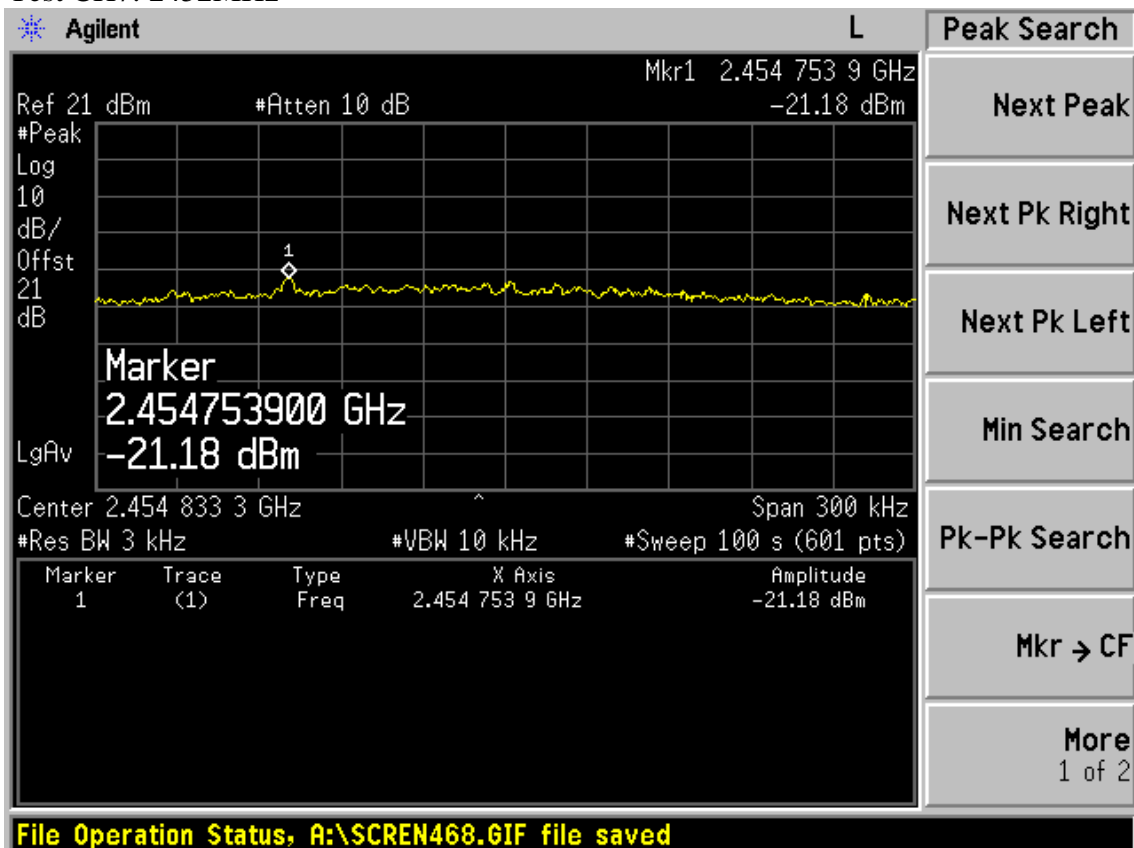
Test CH1: 2422MHz



Test CH4: 2437MHz



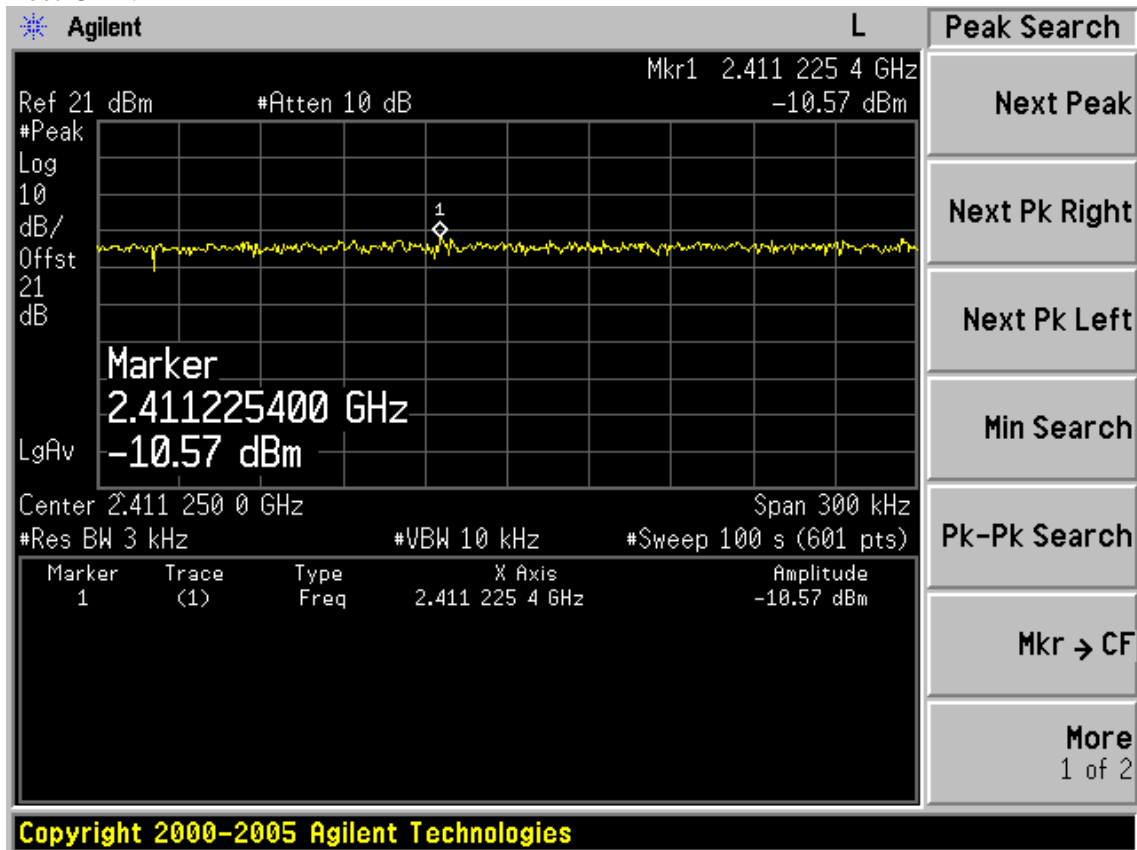
Test CH7: 2452MHz



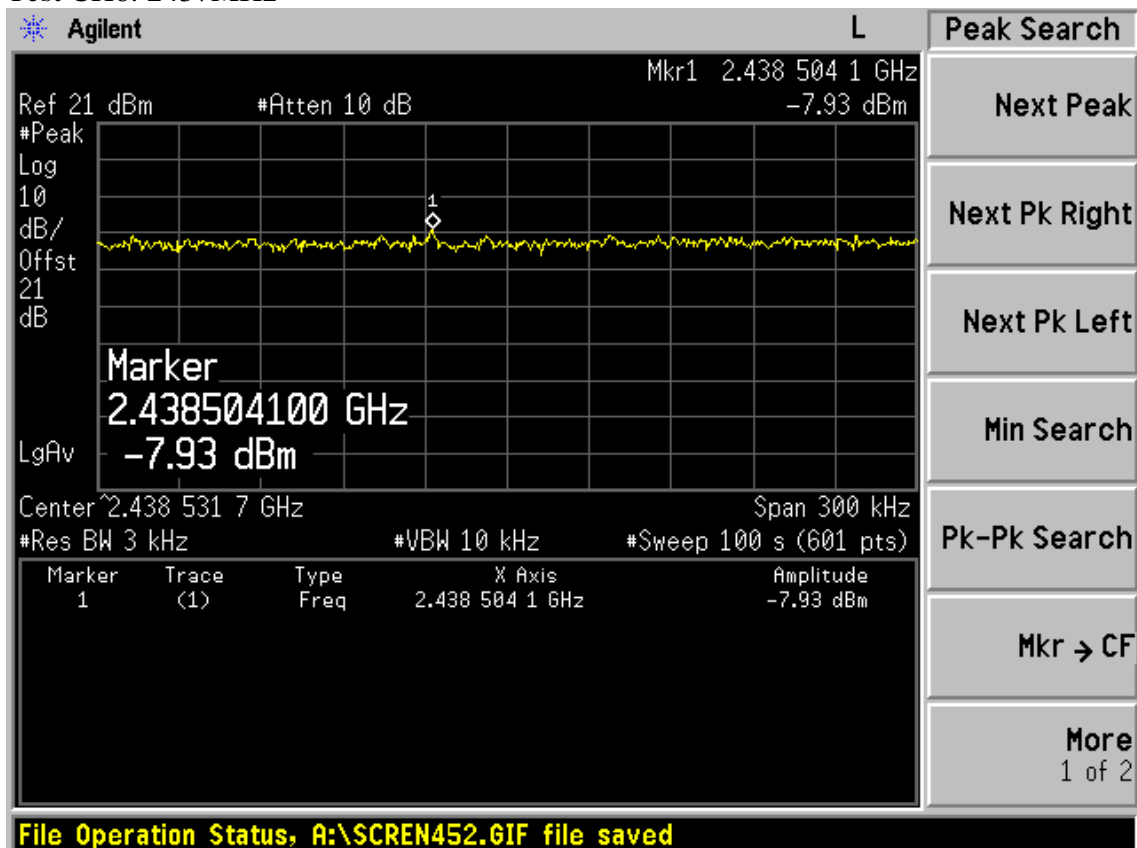
**Chain 2:**

Test Mode: IEEE 802.11b TX

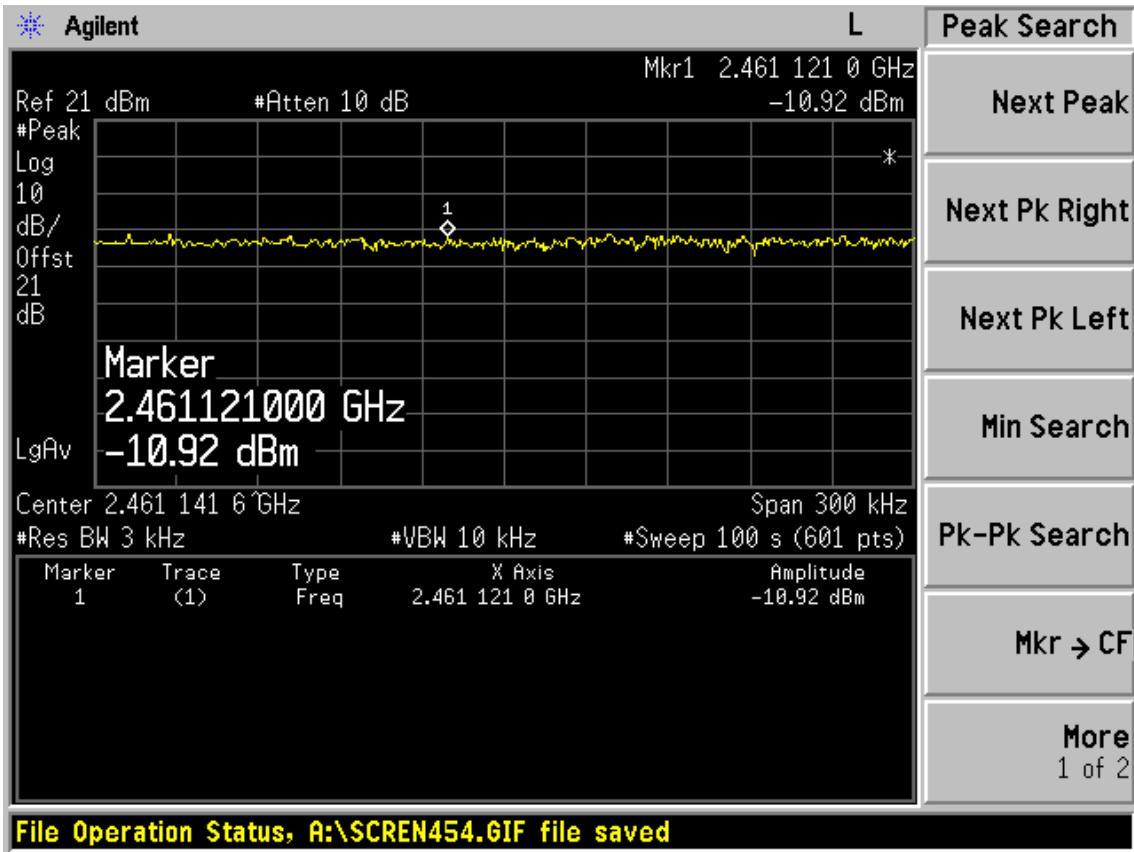
Test CH1: 2412MHz



Test CH6: 2437MHz

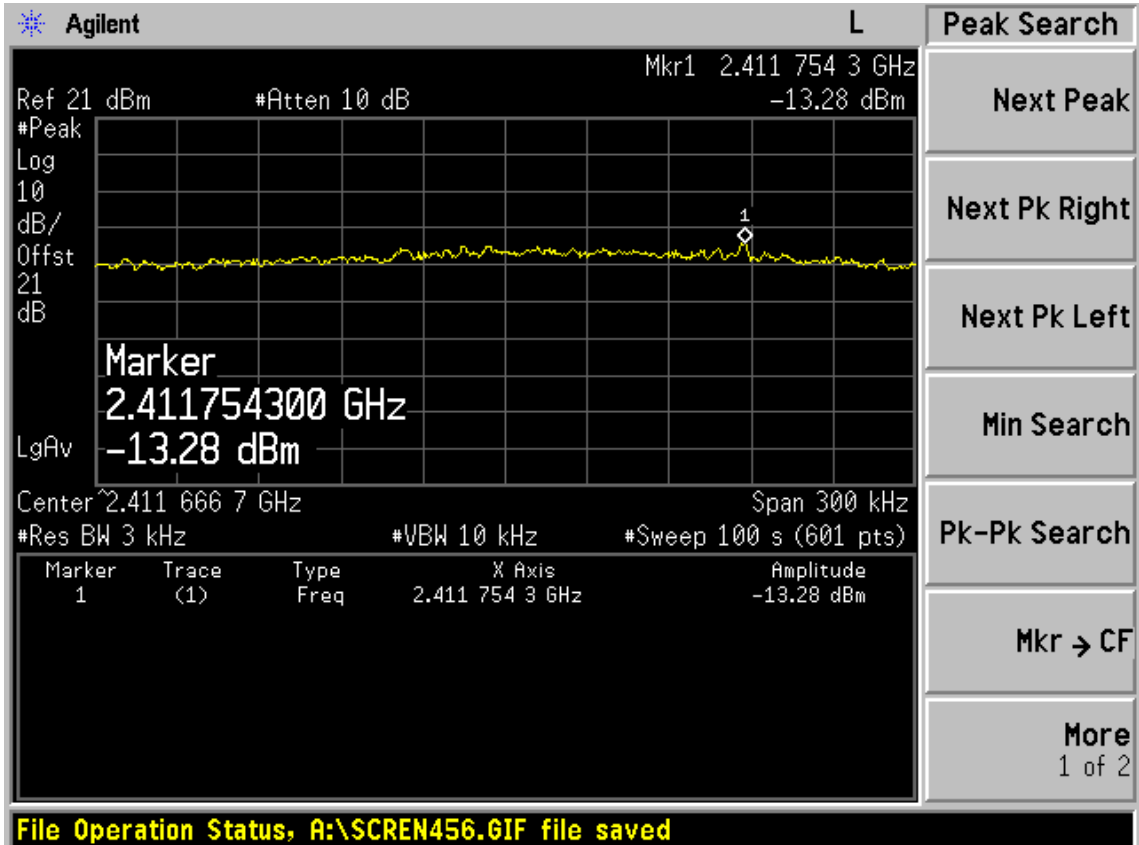


Test CH1: 2462MHz



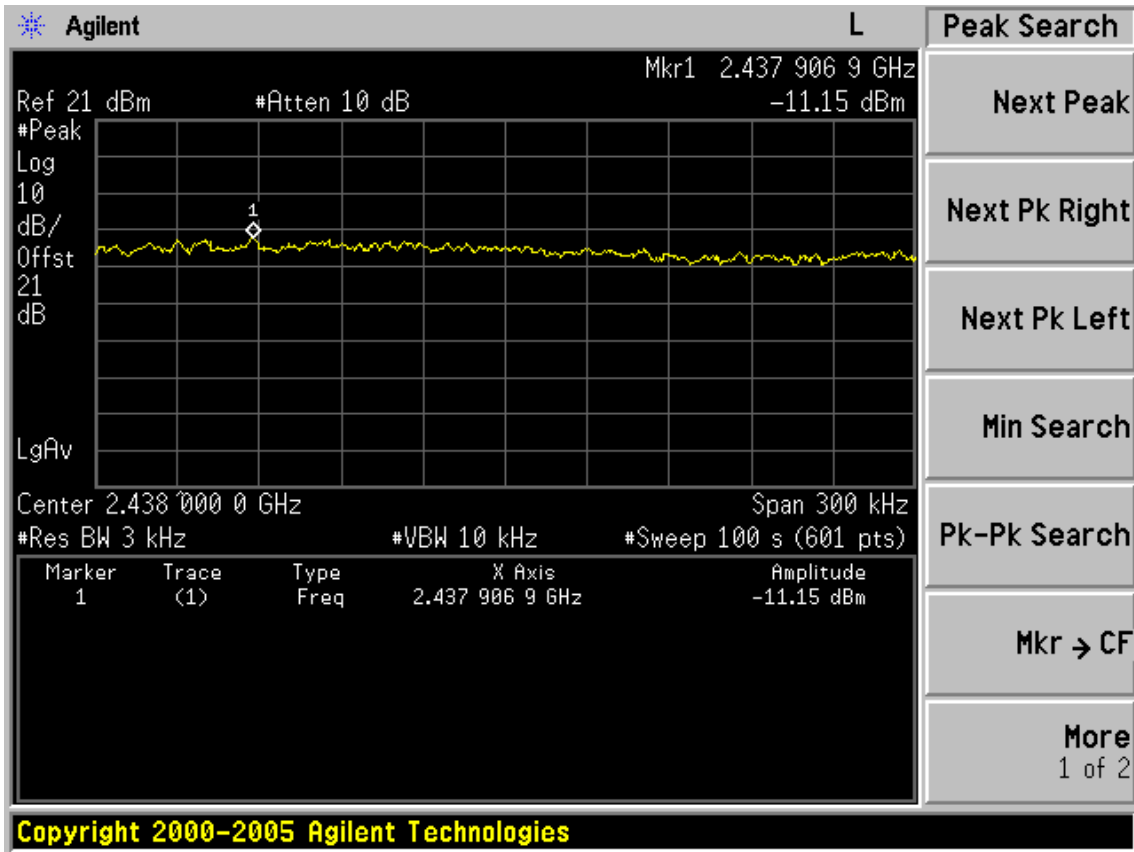
Test Mode: IEEE 802.11g TX

Test CH1: 2412MHz

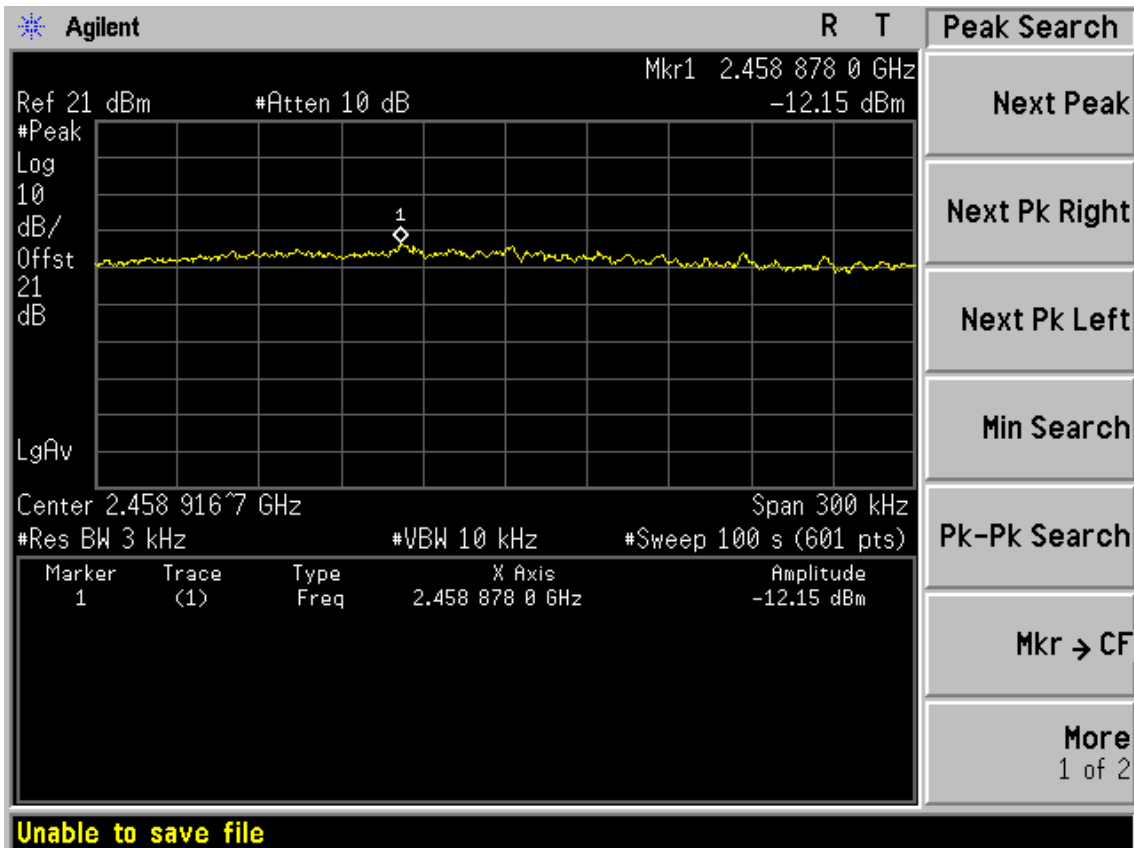




Test CH6: 2437MHz

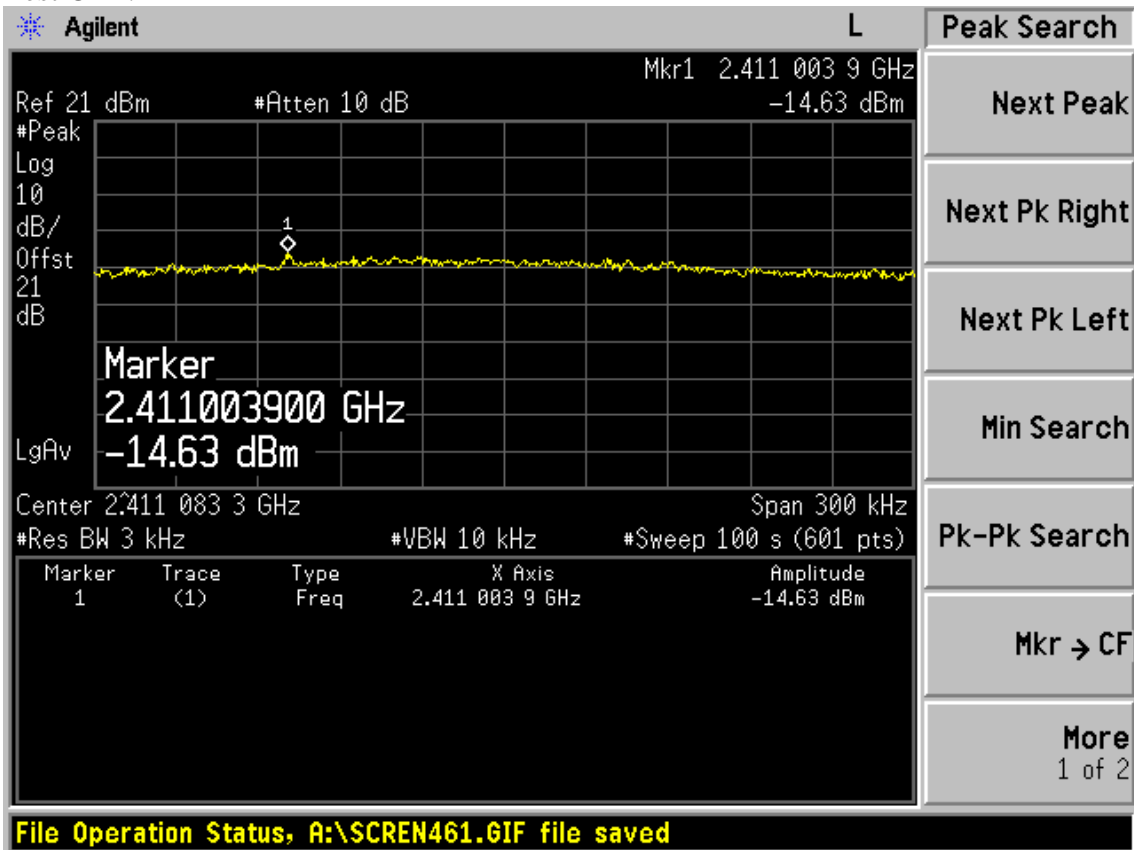


Test CH11: 2462MHz

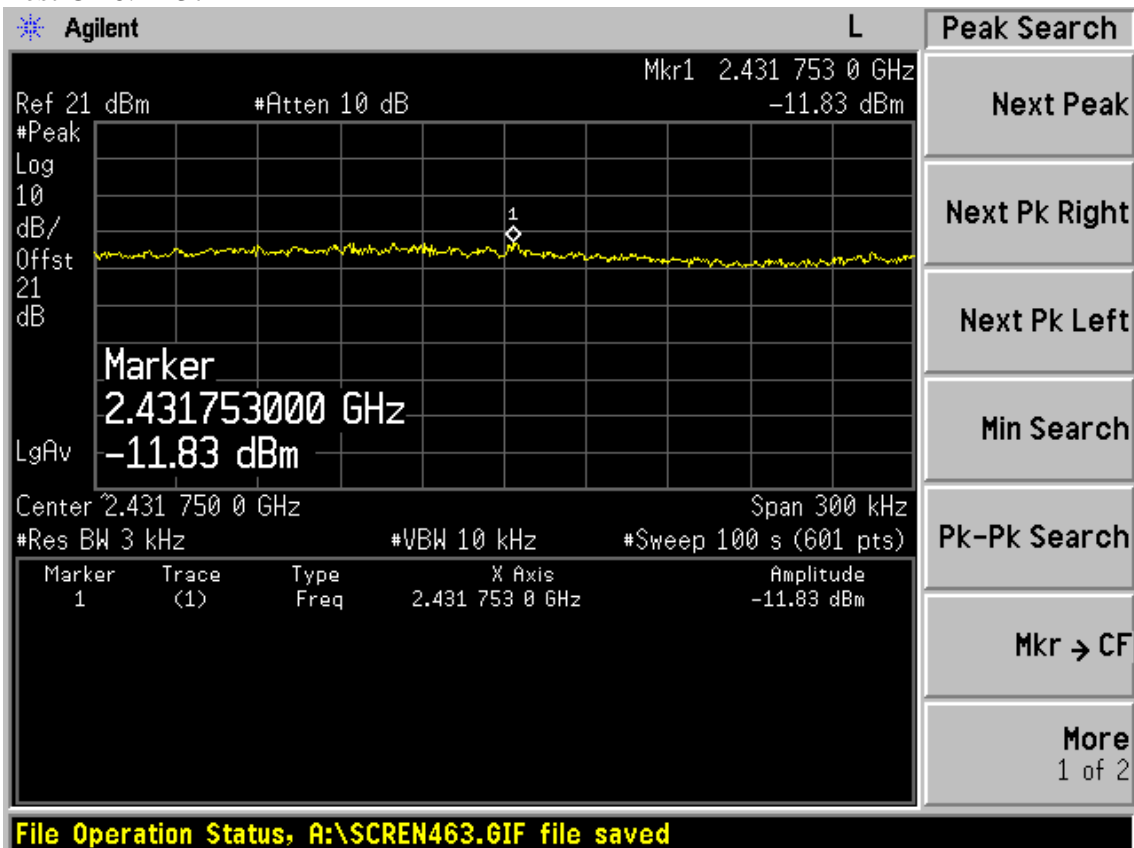


Test Mode: IEEE 802.11n HT20 TX

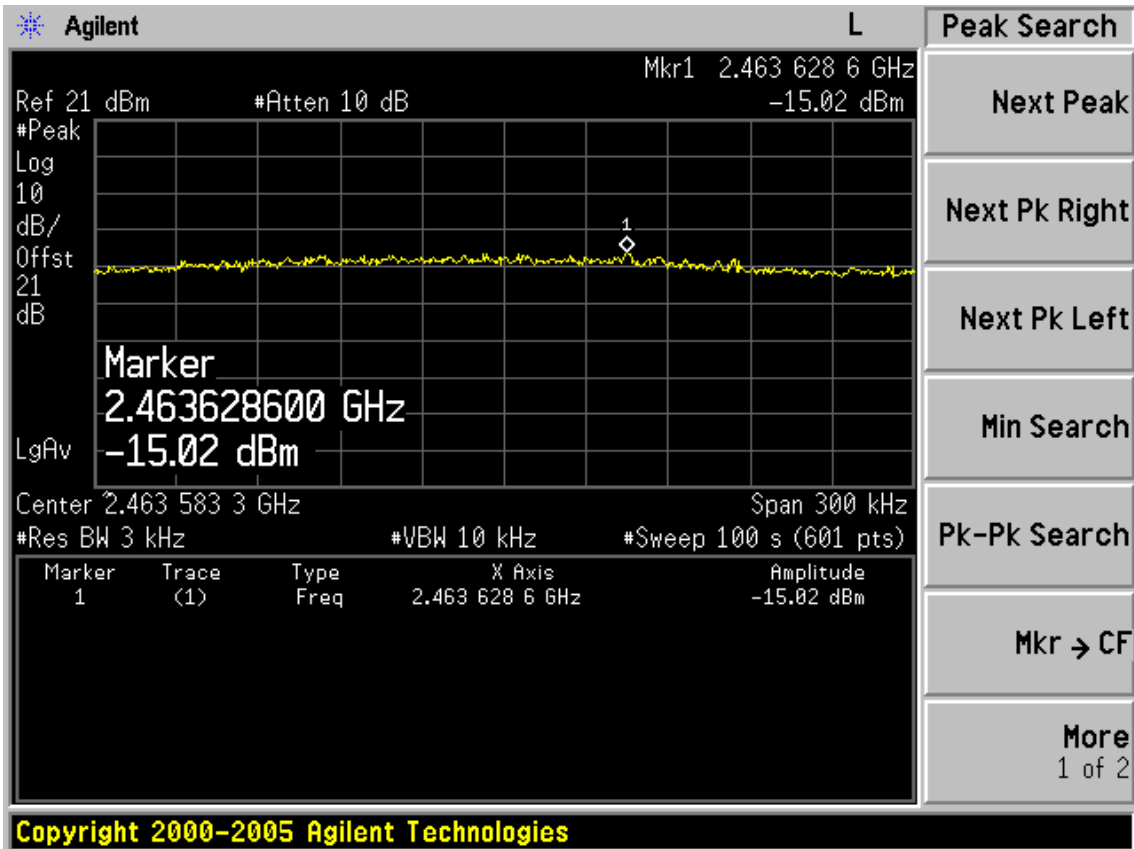
Test CH1: 2412MHz



Test CH6: 2437MHz

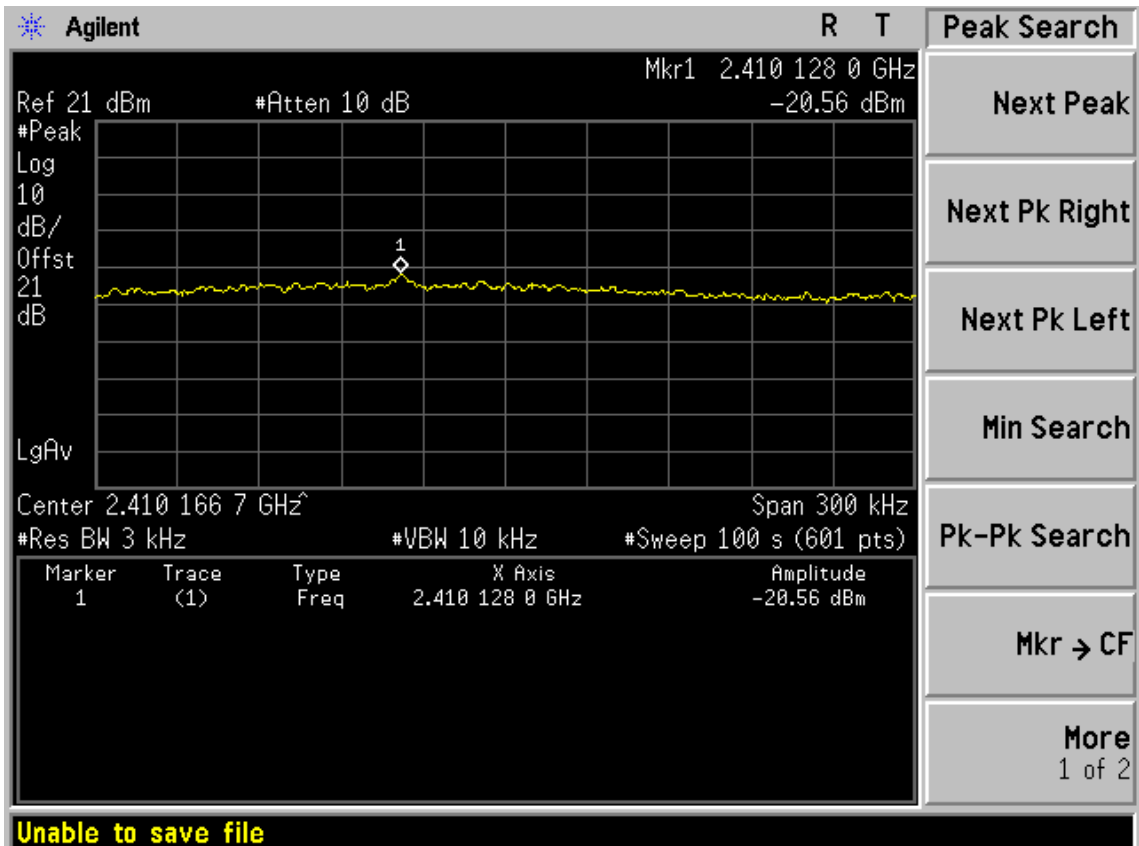


Test CH1: 2462MHz

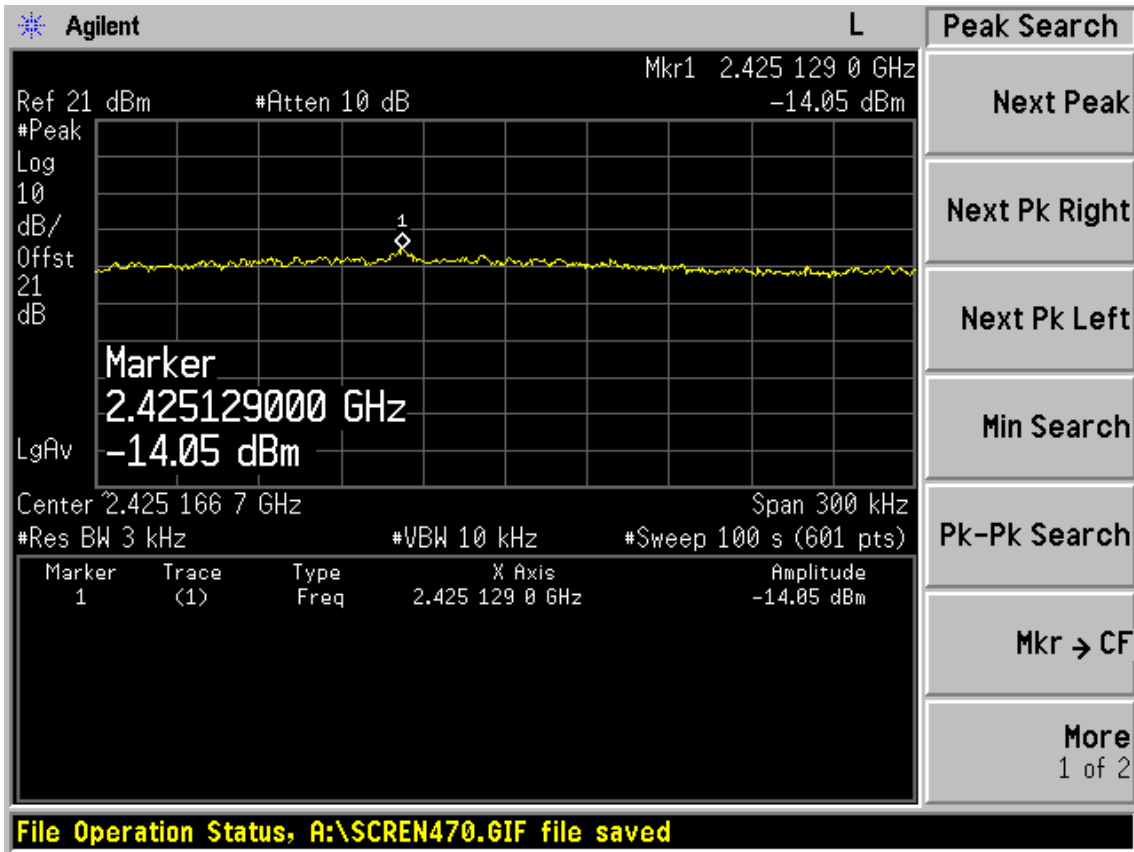


Test Mode: IEEE 802.11n HT40 TX

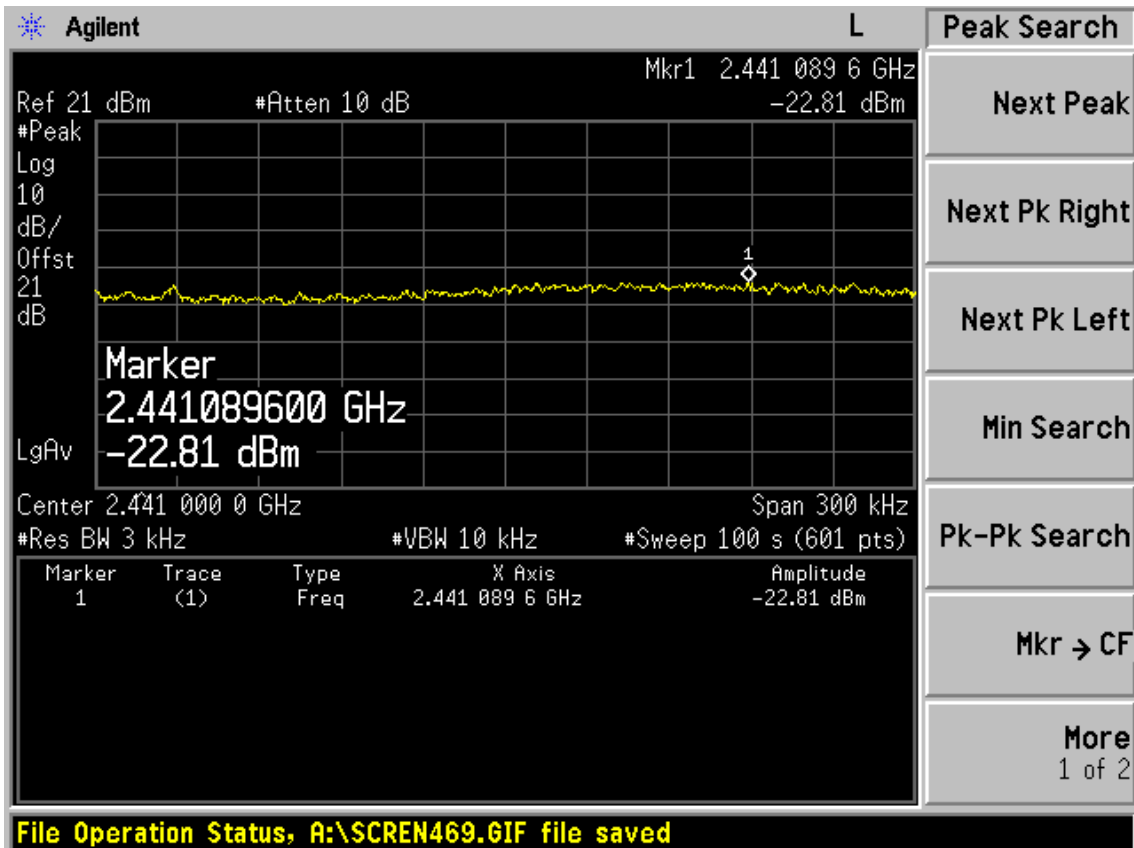
Test CH1: 2422MHz



Test CH4: 2437MHz



Test CH7: 2452MHz



## **10. ANTENNA REQUIREMENT**

### **10.1 STANDARD APPLICABLE**

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### **10.2 ANTENNA CONNECTED CONSTRUCTION**

This device is wireless module with I-PEX antenna connector that no antenna other than that furnished by the responsible party shall be used with the device, a dipole antenna with 2dBi PK gain was used for test.

## 11.MPE ESTIMATION

### 11.1.Limit for General Population/ Uncontrolled Exposures

Frequency	Power density (mW/ cm <sup>2</sup> )	Averaging time(minutes)
300MHz----1.5GHz	F/1500	30
1.5GHz---100GHz	1.0	30

Frequency(MHz)	Power density (mW/ cm <sup>2</sup> )	Averaging time(minutes)
2412	1	30
2437	1	30
2462	1	30

Note: F= Frequency in MHz

### 11.2.Estimation Result

Mode	CH	Frequency (MHz)	PK Output power (dBm)	Output power (mW)	antenna Gain (dBi)	antenna Gain(linear)	MPE
11b	1	2412	17.08	51.05	2	1.58	0.0161
	6	2437	18.23	66.53	2	1.58	0.0210
	11	2462	17.11	51.40	2	1.58	0.0162
11b	1	2412	20.78	119.67	2	1.58	0.0378
	6	2437	22.12	162.93	2	1.58	0.0514
	11	2462	22.05	160.32	2	1.58	0.0506
11n HT20	1	2412	22.69	185.78	2	1.58	0.0586
	6	2437	25.04	319.15	2	1.58	0.1007
	11	2462	23.28	212.81	2	1.58	0.0671
11n HT40	1	2422	18.91	77.80	2	1.58	0.0245
	4	2437	25.98	396.28	2	1.58	0.1250
	7	2452	18.28	67.30	2	1.58	0.0212

Note: The estimation distance is 20cm

## **12.DEVIATION TO TEST SPECIFICATIONS**

[ NONE]