

APPLICATION FOR CERTIFICATION
On Behalf of

TP-LINK Technologies Co., Ltd.

Wireless N USB Adapter

Model Number: TL-WN821N

FCC ID: TE7WN821NV2

Prepared for : TP-LINK Technologies Co., Ltd.
Building 7, Second Part, Honghualing Industrial Zone,
Xili town, Nanshan, Shenzhen, P.R. China

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block,
Shenzhen Science & Industrial Park,
Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496

Report Number : ACS-F09173
Date of Test : Aug.24~26, 2009
Date of Report : Aug.29, 2009

TABLE OF CONTENTS

Description	Page
1. SUMMARY OF STANDARDS AND RESULTS.....	1-1
1.1. Description of Standards and Results	1-1
2. GENERAL INFORMATION	2-1
2.1. Description of Device (EUT)	2-1
2.2. Test information	2-2
2.3. Data rate VS power	2-3
2.4. Tested Supporting System Details	2-4
2.5. Test Facility	2-5
2.6. Measurement Uncertainty (95% confidence levels, k=2)	2-5
3. POWER LINE CONDUCTED EMISSION TEST	3-1
3.1. Test Equipments.....	3-1
3.2. Block Diagram of Test Setup	3-1
3.3. Power Line Conducted Emission Test Limits	3-1
3.4. Configuration of EUT on Test	3-2
3.5. Operating Condition of EUT	3-2
3.6. Test Procedure.....	3-2
3.7. Power Line Conducted Emission Test Results	3-2
4. RADIATED EMISSION TEST	4-1
4.1. Test Equipment	4-1
4.2. Block Diagram of Test Setup	4-1
4.3. Radiated Emission Limit.....	4-2
4.4. EUT Configuration on Test.....	4-3
4.5. Operating Condition of EUT.....	4-3
4.6. Test Procedure.....	4-3
4.7. Radiated Emission Test Results	4-4
5. CONDUCTED SPURIOUS EMISSIONS.....	5-1
5.1. Test Equipment	5-1
5.2. Limit.....	5-1
5.3. Test Procedure.....	5-1
5.4. Test result.....	5-1
6. BAND EDGE COMPLIANCE TEST	6-1
6.1. Test Equipment	6-1
6.2. Limit.....	6-1
6.3. Test Produce	6-1
6.4. Test Results	6-1
7. 6dB Bandwidth Test.....	7-1
7.1. Test Equipment	7-1
7.2. Limit.....	7-1
7.3. Test Procedure.....	7-1
7.4. Test Results	7-1
8. OUTPUT POWER TEST.....	8-1
8.1. Test Equipment	8-1
8.2. Limit(FCC Part 15C 15.247 b(3)).....	8-1
8.3. Test Procedure.....	8-1
8.4. Test Results	8-2
9. POWER SPECTRAL DENSITY TEST	9-1

9.1. Test Equipment9-1
9.2. Limit.....9-1
9.3. Test Procedure.....9-1
9.4. Test Results9-2
10. ANTENNA REQUIREMENT 10-1
11. DEVIATION TO TEST SPECIFICATIONS..... 11-1
12. PHOTOGRAPH OF TEST 12-1
12.1. Photos of Power Line Conducted Emission Test 12-1
12.2. Photos of Radiated Emission Test..... 12-2
13. PHOTOGRAPH OF EUT 13-1

TEST REPORT CERTIFICATION

Applicant : TP-LINK Technologies Co., Ltd.
 Manufacturer : TP-LINK Technologies Co., Ltd.
 EUT Description : Wireless N USB Adapter
 FCC ID : TE7WN821NV2
 (A) MODEL NO. : TL-WN821N
 (B) SERIAL NO. : N/A
 (C) POWER SUPPLY : DC 5V From PC
 (D) TEST VOLTAGE : DC 5V 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 : Aug.24~26, 2009

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	: Wireless N USB Adapter
Model Number	: TL-WN821N
FCC ID	: TE7WN821NV2
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: 7Channels
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)
Data Rate	: IEEE 802.11b: 11/5.5/2/1Mbps. IEEE 802.11g: 54/48/36/24/18/12/9/6Mbps. IEEE 802.11n HT20 : 65, 58.5, 52, 39, 26,19.5,13, 6.5 Mbps IEEE 802.11n HT40 :270,243,216,162,135, 121.5, 108, 81,54,40.5, 27, 13.5Mbps
Output Power	: IEEE 802.11b: 19.36dBm IEEE 802.11g: 24.57dBm IEEE 802.11n HT20: 24.96dBm IEEE 802.11n HT40: 25.47dBm
Antenna and Gain	: Integral PCB MIMO 2TX2R 1.82dBi (maximum)
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	: Aug.24~26, 2009
Date of Receipt	: Aug.23, 2009
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.			

2.3.Date rate VS power

Mode	Data rate(Mbps)	CH	Level (dBm)	Limit (dBm)
11b	1	CH6	19.20	30
	2	CH6	19.12	30
	5.5	CH6	19.11	30
	11	CH6	18.89	30
11g	6	CH6	24.57	30
	9	CH6	24.51	30
	12	CH6	24.34	30
	18	CH6	24.42	30
	24	CH6	24.01	30
	36	CH6	24.32	30
	48	CH6	24.13	30
	54	CH6	24.31	30
11n HT20	6.5	CH6	24.96	30
	13	CH6	24.58	30
	19.5	CH6	24.65	30
	26	CH6	24.61	30
	39	CH6	24.73	30
	52	CH6	24.11	30
	58.5	CH6	24.43	30
	65	CH6	24.23	30
11n HT40	13.5	CH4	25.47	30
	27	CH4	25.23	30
	40.5	CH4	25.13	30
	54	CH4	25.23	30
	81	CH4	25.11	30
	108	CH4	25.33	30
	121.5	CH4	25.12	30
	135	CH4	25.43	30
	162	CH4	25.34	30
	216	CH4	25.13	30
	243	CH4	25.23	30
	270	CH4	25.33	30
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, Detachabled, 4.0m (Bond one ferrite core)

2.4.2. HDD

EMC CODE	:	ACS-EMC-HDD01
M/N	:	F12-UF
S/N	:	A0100215-5390031
Manufacturer	:	Terasys
Data Cable	:	Shielded, Detachabled, 1.8m
FCC ID	:	By DoC
BSMI ID	:	4912A022

2.4.3. iPod

EMC CODE	:	ACS-EMC-IP01
M/N	:	A1199
S/N	:	YM706MLDVQ5
Manufacturer	:	APPLE
Data Cable	:	Shielded, Detachabled, 1.0m
FCC ID	:	By DoC
BSMI ID	:	R33057

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	3.78 dB (Polarize: V)
	4.20 dB (Polarize: H)
Uncertainty for Radiated Spurious Emission test in RF chamber	2.70 dB (Bilog antenna 30M~1000MHz)
	2.26 dB (Horn antenna 1000M~25000MHz)
Uncertainty for Conduction Spurious emission test	2.10 dB
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 Bandwidth test	1×10^{-9}
Uncertainty for DC power test	0.042 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

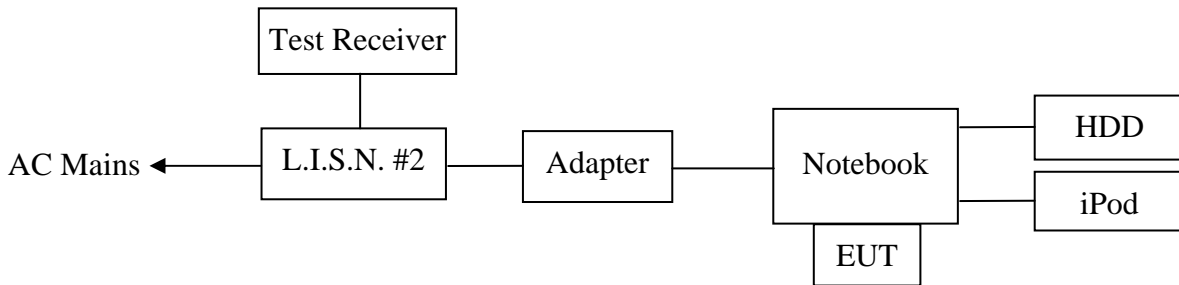
3. POWER LINE CONDUCTED EMISSION TEST

3.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Jan.10, 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	1Year
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

Block diagram of connection between the EUT and simulators



(EUT: Wireless N USB 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. Wireless N USB Adapter (EUT)

Model Number : TL-WN821N
Serial Number : N/A

3.4.2. Support Equipment : As Tested Supporting System Detail, in Section 2.3.

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 ESHS10) is set at 10kHz.

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

The test result are reported on Section 3.7.,

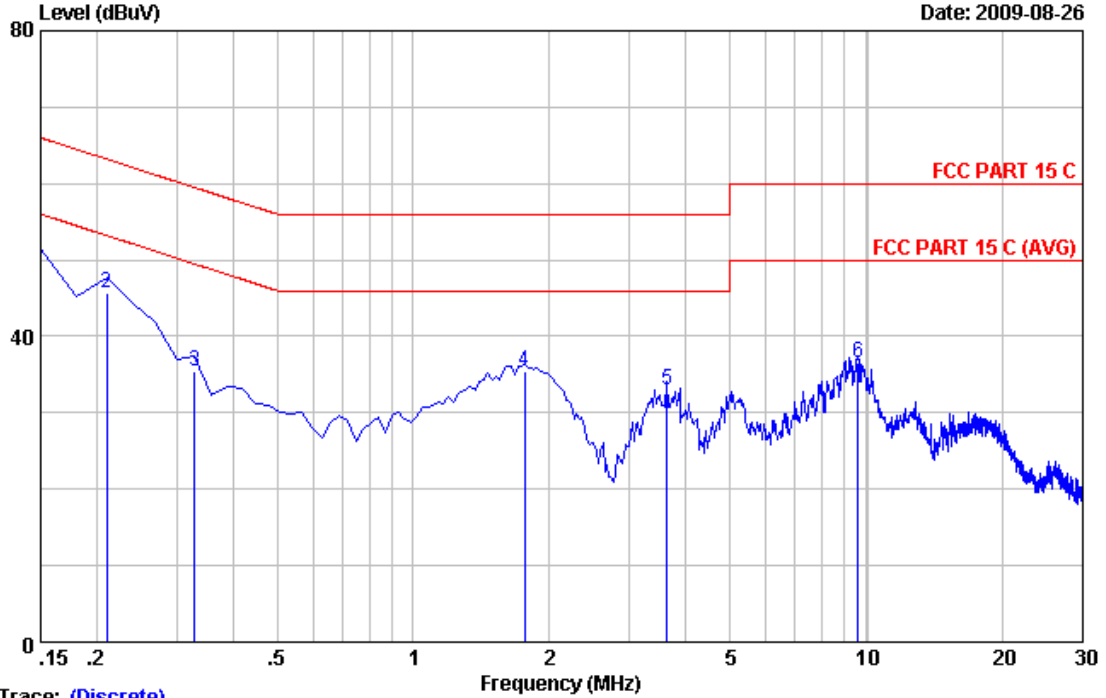
3.7. Power Line Conducted Emission Test Results

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



NO.6 Ke Feng Road,Block 52,
Shenzhen Science&Industry Park
Nantou, Shenzhen,Guang dong, China.
Tel:+86-755-26639495
Fax:+86-755-26632877
Postcode:518057

Data: 4 File: D:\DATA\2009 Report\T\TP-LINK\ACS9Q832.EM6 (5)



Trace: (Discrete)

Site no :Audix No.1 Conduction Data no :4
 Dis./Ant. **: 2009 KNW407 V&A
 Limit :FCC PART 15 C
 Env./Ins. :Temp:23'C Humi:54% Engineer :Sunny-lu
 EUT :Wireless N USB Adapter M/N:TL-WN821N
 Power Rating :DC 5V From PC Input AC 120V/60Hz
 Test Mode :Tx Mode

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	39.21	49.56	66.00	16.44	QP
2	0.20970	0.42	9.88	35.38	45.68	63.22	17.54	QP
3	0.32910	0.37	9.89	25.16	35.42	59.47	24.05	QP
4	1.762	0.36	9.89	25.08	35.33	56.00	20.67	QP
5	3.642	0.37	9.91	22.75	33.03	56.00	22.97	QP
6	9.642	0.43	9.94	26.12	36.49	60.00	23.51	QP

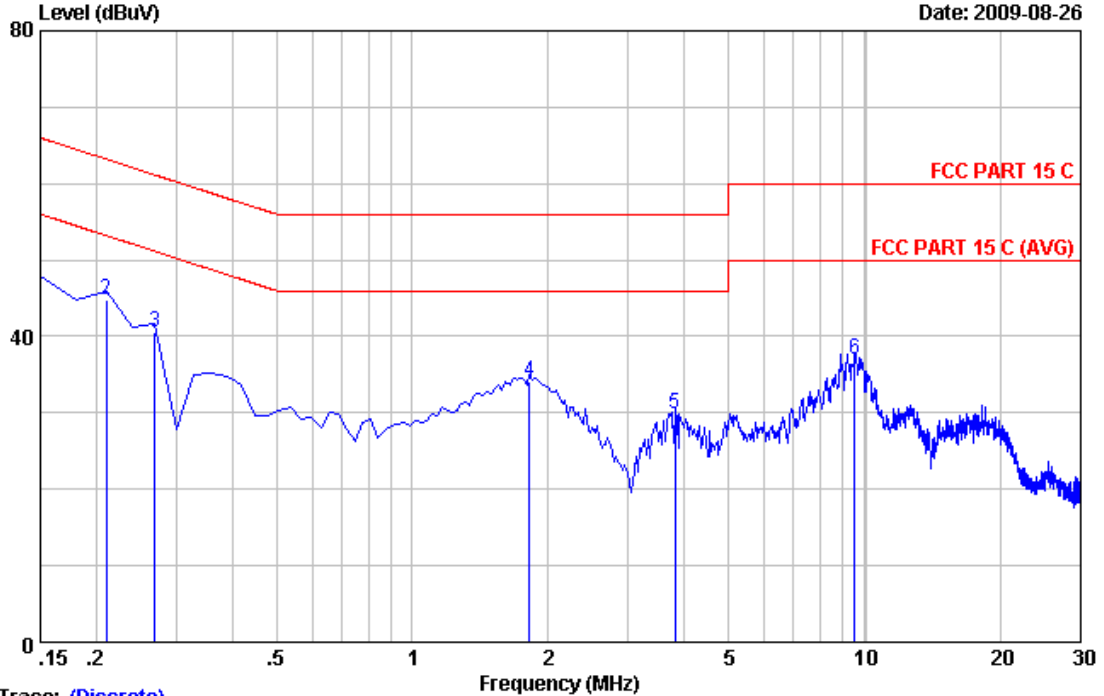
Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)+Reading
 2.If the average limit is met when using a quasi-peak detector.
 the EUT shall be deemed to meet both limits and measurement
 with average detector is unnecessary.



NO.6 Ke Feng Road,Block 52,
Shenzhen Science&Industry Park
Nantou, Shenzhen,Guang dong, China.
Tel:+86-755-26639495
Fax:+86-755-26632877
Postcode:518057

Data: 5 File: D:\DATA\2009 Report\T\TP-LINK\ACS9Q832.EM6 (5)

Date: 2009-08-26



Trace: (Discrete)

Site no :Audix No.1 Conduction Data no :5
 Dis./Ant. **: 2009 KNW407 VB
 Limit :FCC PART 15 C
 Env./Ins. :Temp:23'C Humi:54% Engineer :Sunny-lu
 EUT :Wireless N USB Adapter M/N:TL-WN821N
 Power Rating :DC 5V From PC Input AC 120V/60Hz
 Test Mode :Tx Mode

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	35.57	45.94	66.00	20.06	QP
2	0.20970	0.44	9.88	34.56	44.88	63.22	18.34	QP
3	0.26940	0.42	9.88	30.29	40.59	61.14	20.55	QP
4	1.822	0.36	9.89	23.73	33.98	56.00	22.02	QP
5	3.822	0.37	9.91	19.49	29.77	56.00	26.23	QP
6	9.553	0.44	9.94	26.55	36.93	60.00	23.07	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

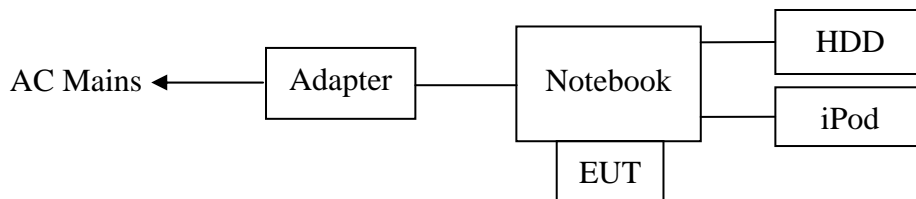
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,08	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 09	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 09	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 09	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Nov.10, 08	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	May.27, 08	1.5 Year
3	Horn Antenna	EMCO	3116	00060088	May.27, 08	1.5Year
4	Amplifier	Agilent	8449B	3008A02495	Nov.24,08	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08, 09	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX102	271471/4	May.08, 09	1 Year
7	RF Cable	Hubersuhner	SUCOFLEX102	29086/2	May.08, 09	1 Year

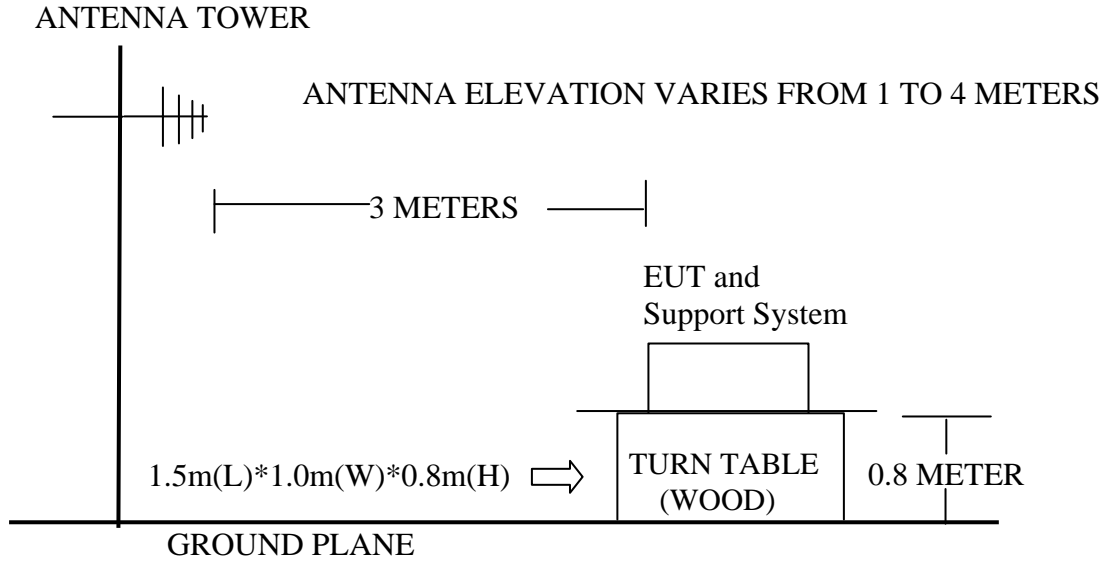
4.2. Block Diagram of Test Setup

Block diagram of connection between the EUT and simulators



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

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. Wireless N USB Adapter (EUT)

Model Number : TL-WN821N
Serial Number : N/A

4.4.2. Support Equipment : As Tested Supporting System Detail, in Section 2.3.

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 10th 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.

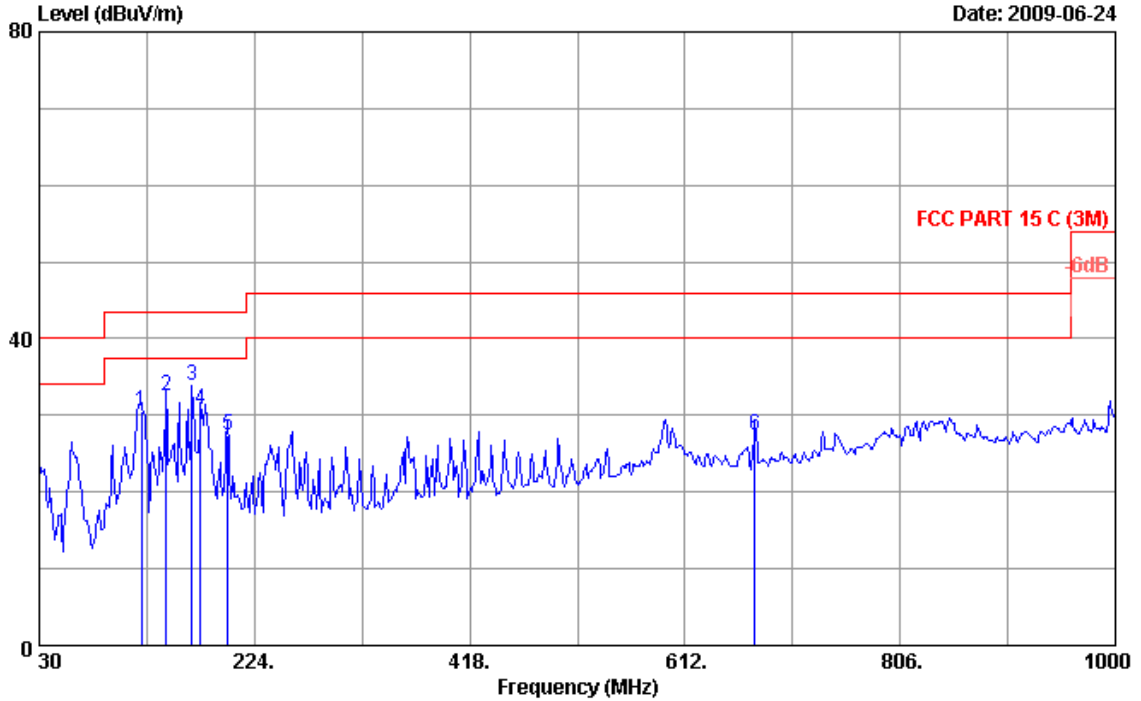
Frequency: 30MHz~1GHz



No.6,Ke Feng Road,Block 52,
Shenzhen Science&Industry Park
Nantou Shenzhen,Guangdong,China
Tel:+86-755-26639495
Fax:+86-755-26632877
Postcode:518057

Data: 2 File: D:\2009 Report Data\TTP-LINK\ACS9Q832.EM6 (2)

Date: 2009-06-24



Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m CBL6111C Ant. pol. : HORIZONTAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Alan Geng
 EUT : Wireless N USB Adapter
 Power Rating : DC 5V from PC input AC 120V/60Hz
 Test Mode : Tx Mode
 : M/N: TL-WN821N
 :

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	122.150	11.87	0.84	17.90	30.61	43.50	12.89	QP
2	144.460	11.78	0.94	19.79	32.51	43.50	10.99	QP
3	167.740	10.33	0.97	22.53	33.83	43.50	9.67	QP
4	175.500	9.64	1.03	20.04	30.71	43.50	12.79	QP
5	199.750	9.92	1.12	16.27	27.31	43.50	16.19	QP
6	675.050	20.28	2.64	4.53	27.45	46.00	18.55	QP

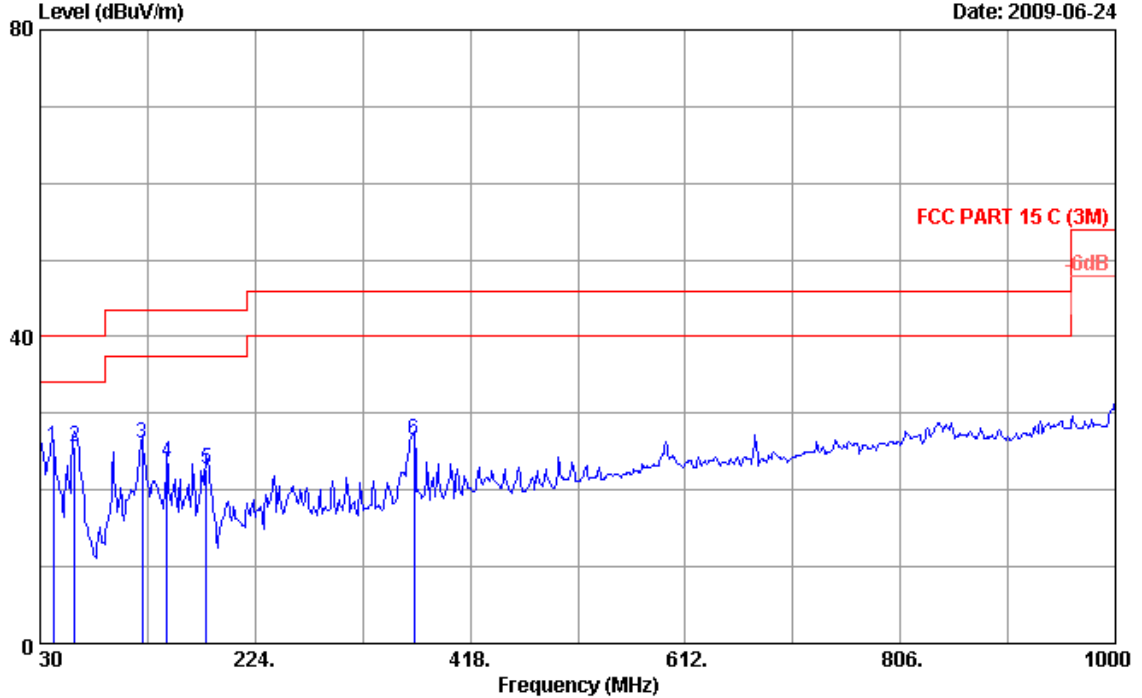
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.



No.6,Ke Feng Road,Block 52,
Shenzhen Science&Industry Park
Nantou Shenzhen,Guangdong,China
Tel:+86-755-26639495
Fax:+86-755-26632877
Postcode:518057

Data: 1 File: D:\2009 Report Data\T\TP-LINK\ACS9Q832.EM6 (2)

Date: 2009-06-24



Site no. : 3m Chamber Data no. : 1
 Dis. / Ant. : 3m CBL6111C Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Alan Geng
 EUT : Wireless N USB Adapter
 Power Rating : DC 5V from PC input AC 120V/60Hz
 Test Mode : Tx Mode
 : M/N: TL-WN821N
 :

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	41.640	13.33	0.38	11.86	25.57	40.00	14.43	QP
2	61.040	5.90	0.50	19.28	25.68	40.00	14.32	QP
3	122.150	11.87	0.84	13.42	26.13	43.50	17.37	QP
4	144.460	11.78	0.94	10.95	23.67	43.50	19.83	QP
5	180.350	9.41	1.04	12.36	22.81	43.50	20.69	QP
6	367.560	15.41	1.78	9.39	26.58	46.00	19.42	QP

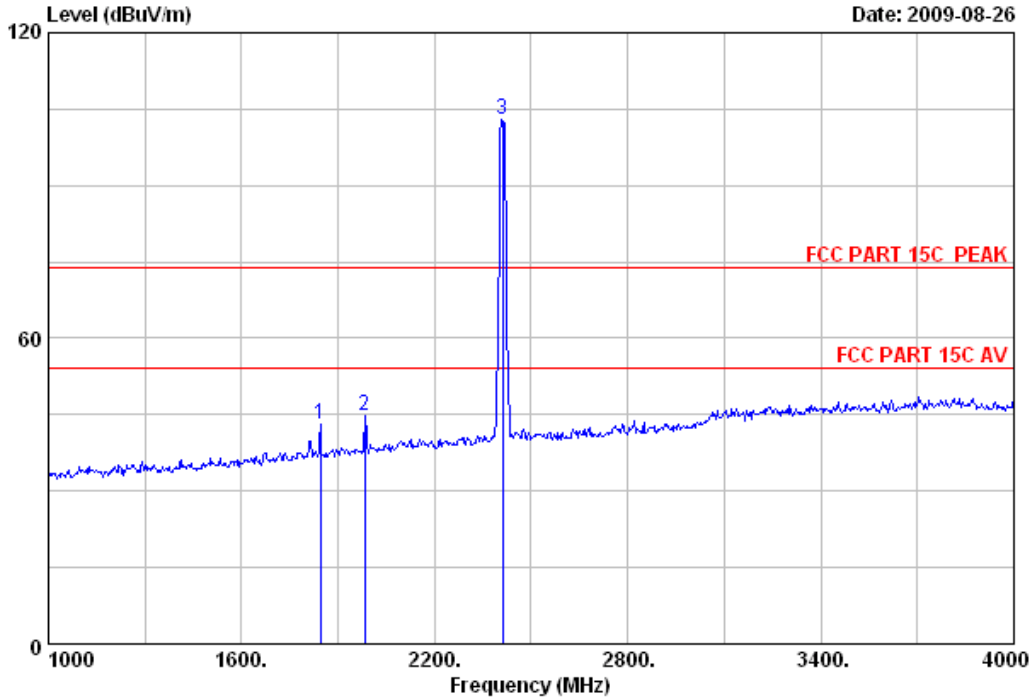
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz



No.6 Ke Feng Road,Block 52,
Shenzhen Science & Industry Park
Noutou, Shenzhen, Guangdong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 1 File: E:\2009 report data\T\TP-LINK\ACS90832.EM6 (72)



Site no. : 3m Chamber Data no. : 1
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	27.30	7.52	36.23	44.38	42.97	74.00	31.03	Peak
2	1984.000	27.83	7.76	36.06	45.26	44.79	74.00	29.21	Peak
3	2412.000	28.48	8.60	35.95	101.87	103.00	74.00	-29.00	Peak

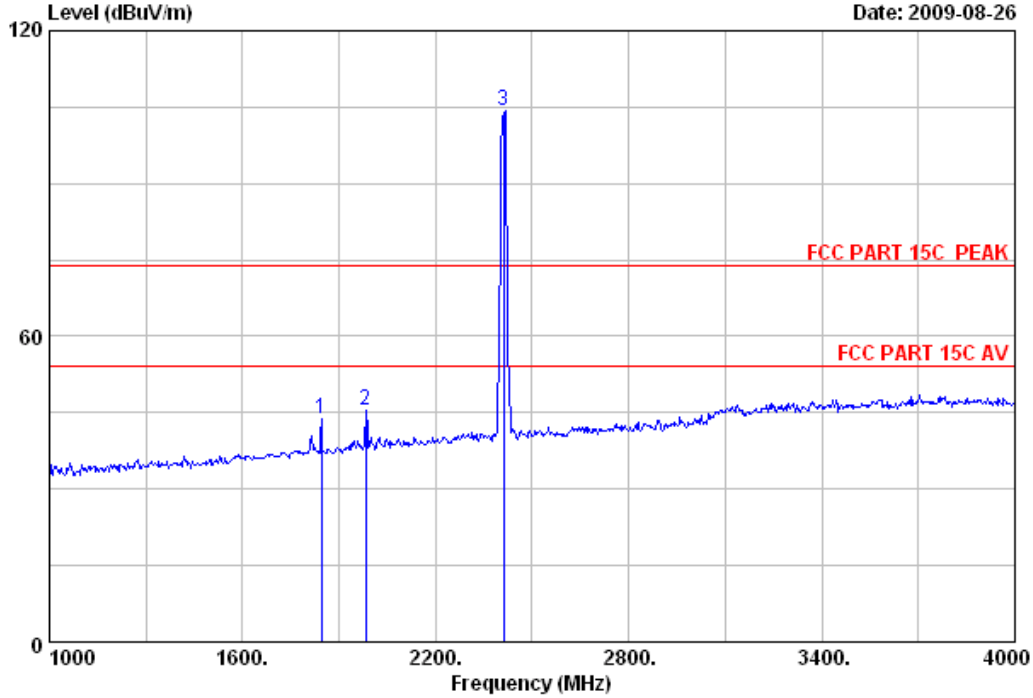
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 2 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	1846.000	27.30	7.52	36.23	45.09	43.68	74.00	30.32	Peak
2	1984.000	27.83	7.76	36.06	46.03	45.56	74.00	28.44	Peak
3	2412.000	28.48	8.60	35.95	103.23	104.36	74.00	-30.36	Peak

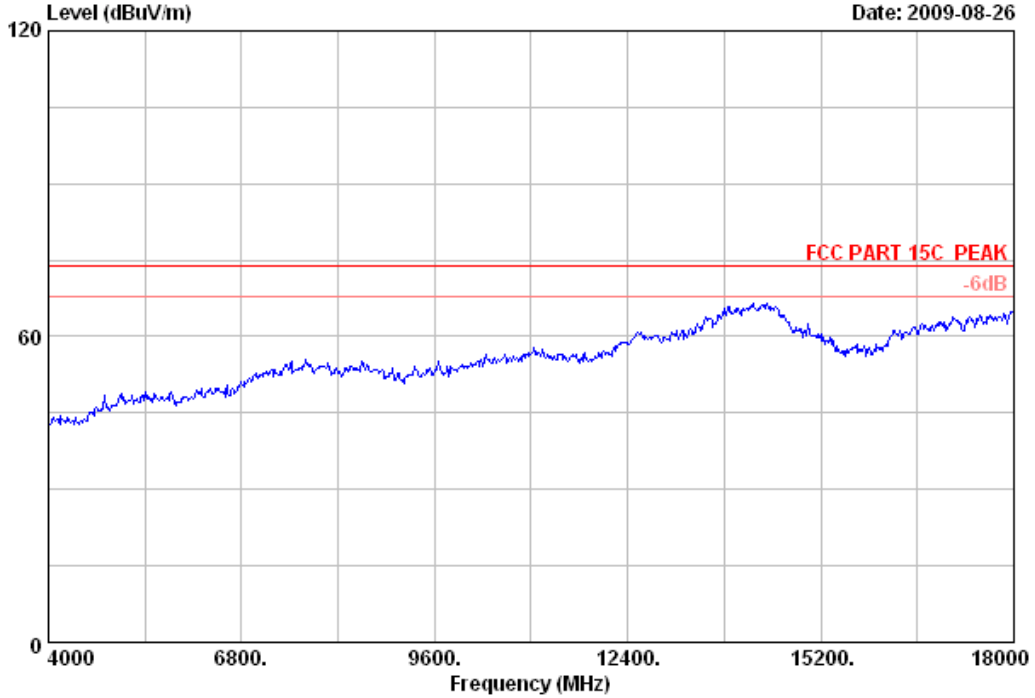
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 3 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

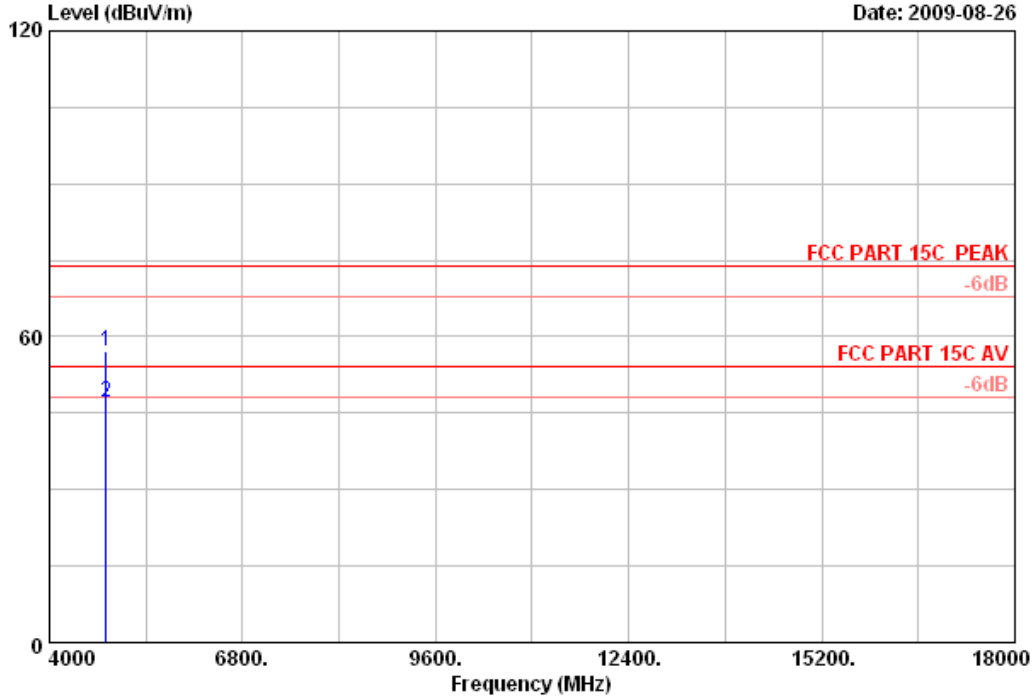


Site no.	: 3m Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11b CH1 2412MHz		



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 4 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	34.47	12.58	35.25	45.25	57.05	74.00	16.95	Peak
2	4824.000	34.47	12.58	35.25	35.27	47.07	54.00	6.93	Average

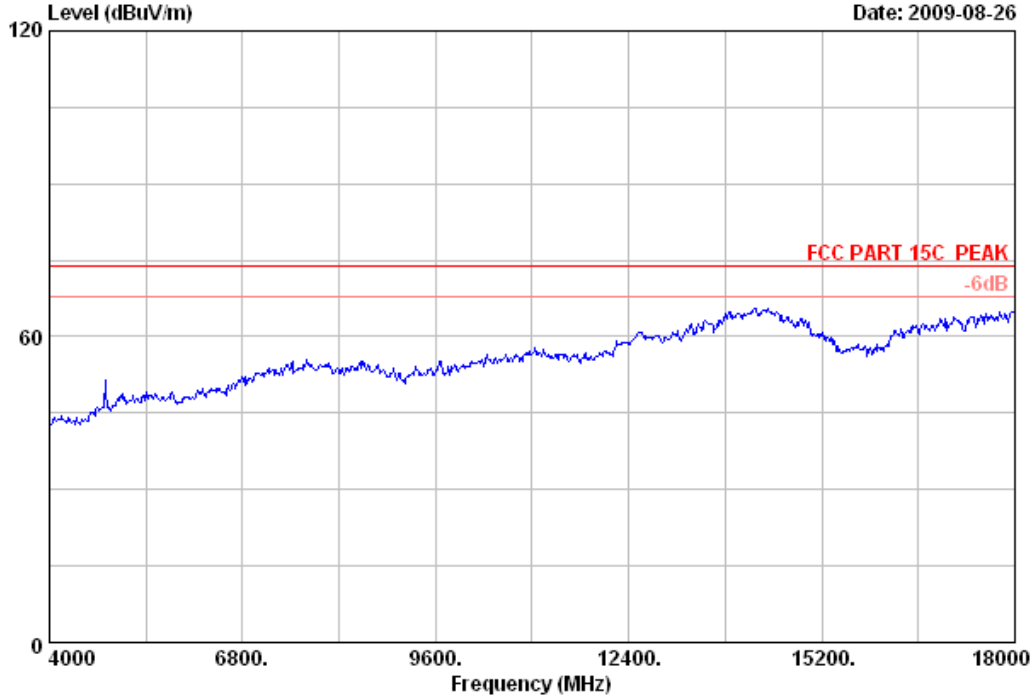
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 5 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

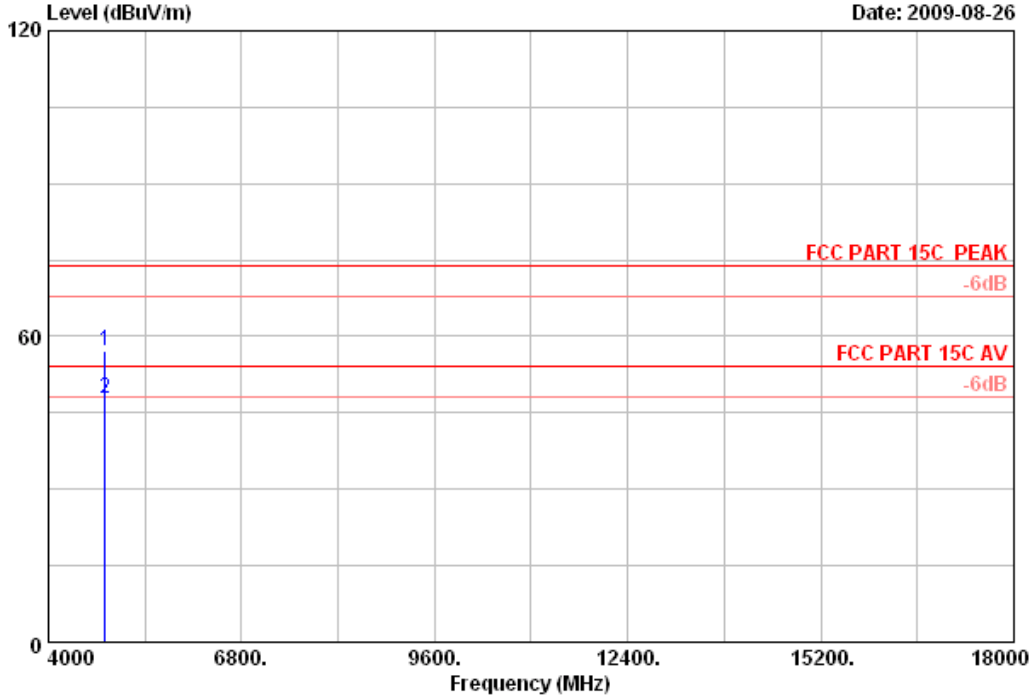


Site no.	: 3m Chamber	Data no.	: 5
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11b CH1 2412MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 6 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	34.47	12.58	35.25	45.26	57.06	74.00	16.94	Peak
2	4824.000	34.47	12.58	35.25	36.03	47.83	54.00	6.17	Average

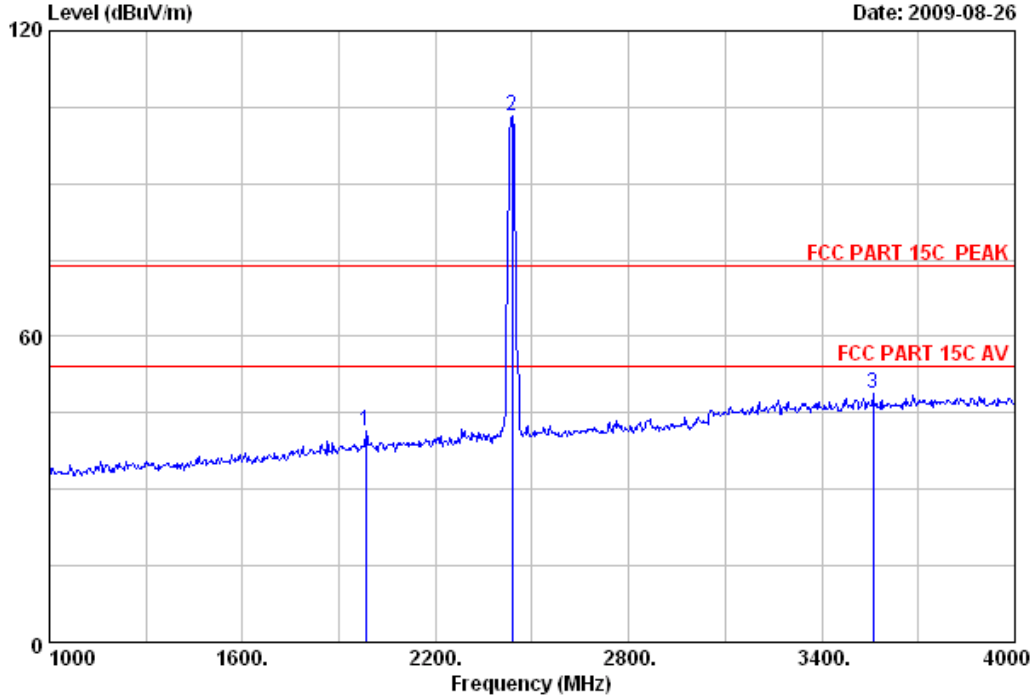
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 7 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 7
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH6 2437MHz

	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	27.83	7.76	36.06	42.00	41.53	74.00	32.47	Peak
2	2437.000	28.53	8.60	36.06	102.23	103.30	74.00	-29.30	Peak
3	3559.000	31.70	10.68	35.59	42.05	48.84	74.00	25.16	Peak

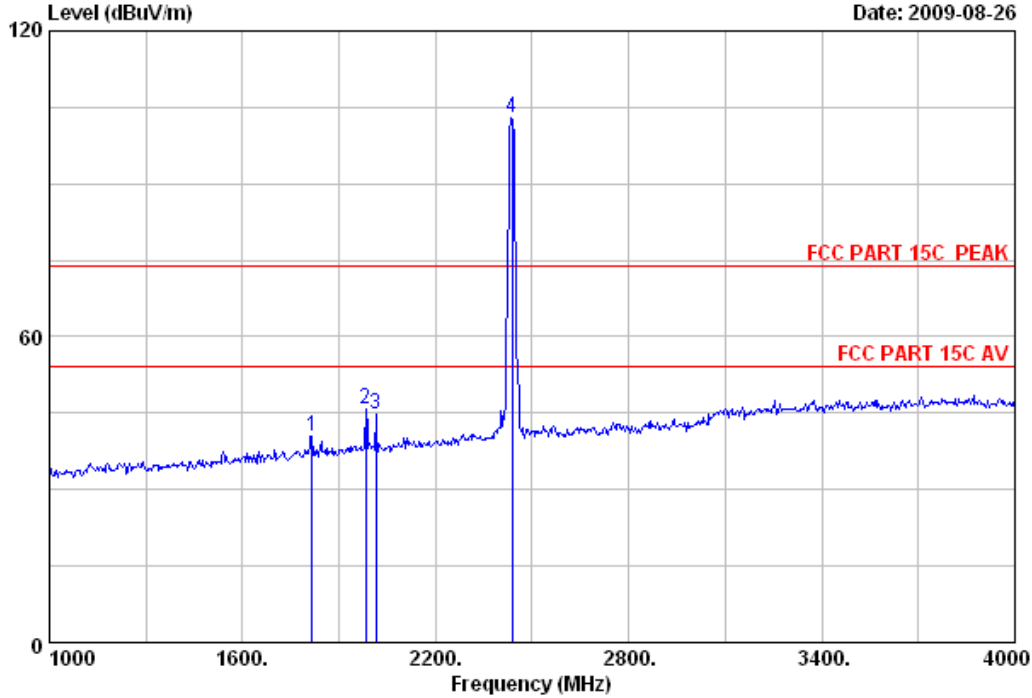
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 8 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)



Site no. : 3m Chamber Data no. : 8
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH6 2437MHz

	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	27.17	7.46	36.34	42.26	40.55	74.00	33.45	Peak
2	1984.000	27.83	7.76	36.06	46.37	45.90	74.00	28.10	Peak
3	2014.000	27.92	7.92	36.12	45.12	44.84	74.00	29.16	Peak
4	2437.000	28.53	8.60	36.06	101.82	102.89	74.00	-28.89	Peak

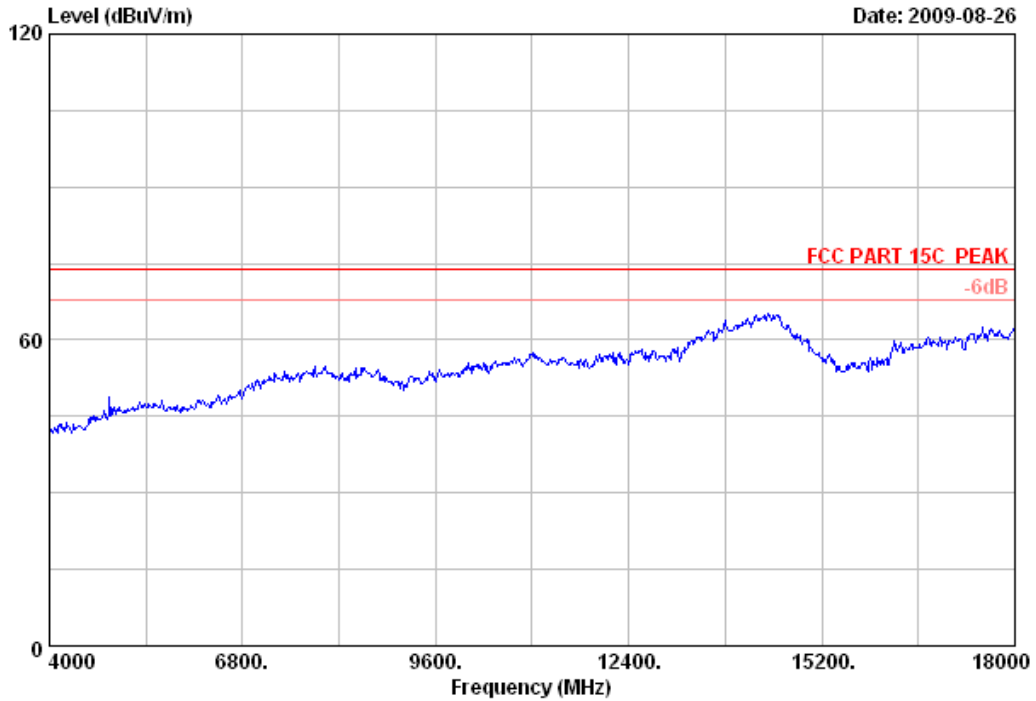
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 9 File: E:\2009 report data\T\TP-LINK\ACS90832.EM6 (72)

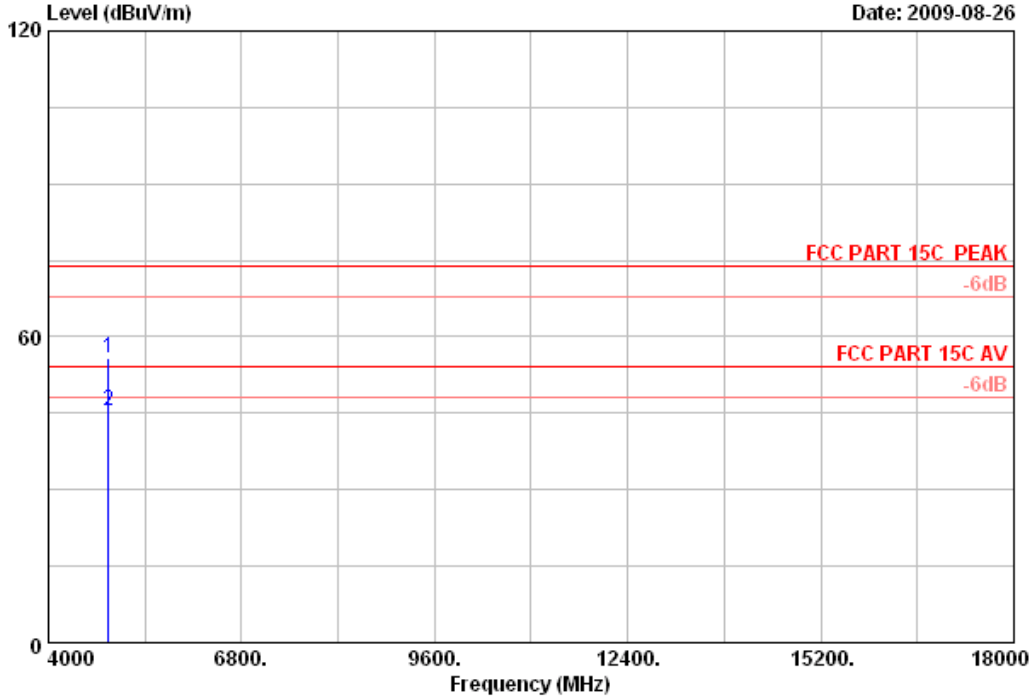


Site no.	: 3m Chamber	Data no.	: 9
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11b CH6 2437MHz		



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 10 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 10
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH6 2437MHz

	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	34.78	12.23	35.36	44.23	55.88	74.00	18.12	Peak
2	4874.000	34.78	12.23	35.36	33.68	45.33	54.00	8.67	Average

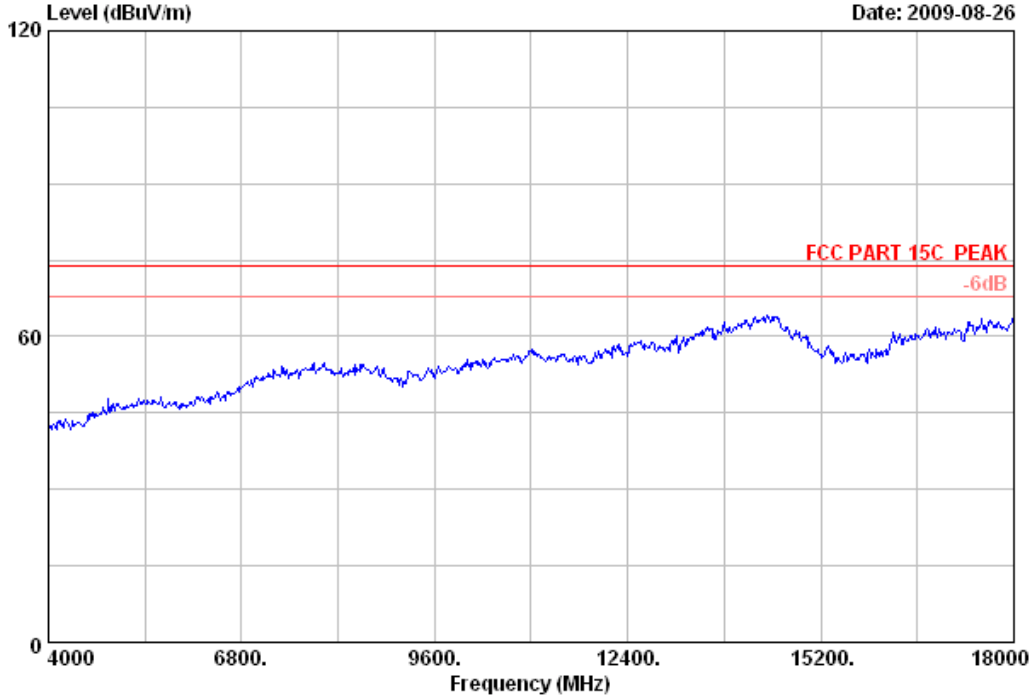
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 11 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

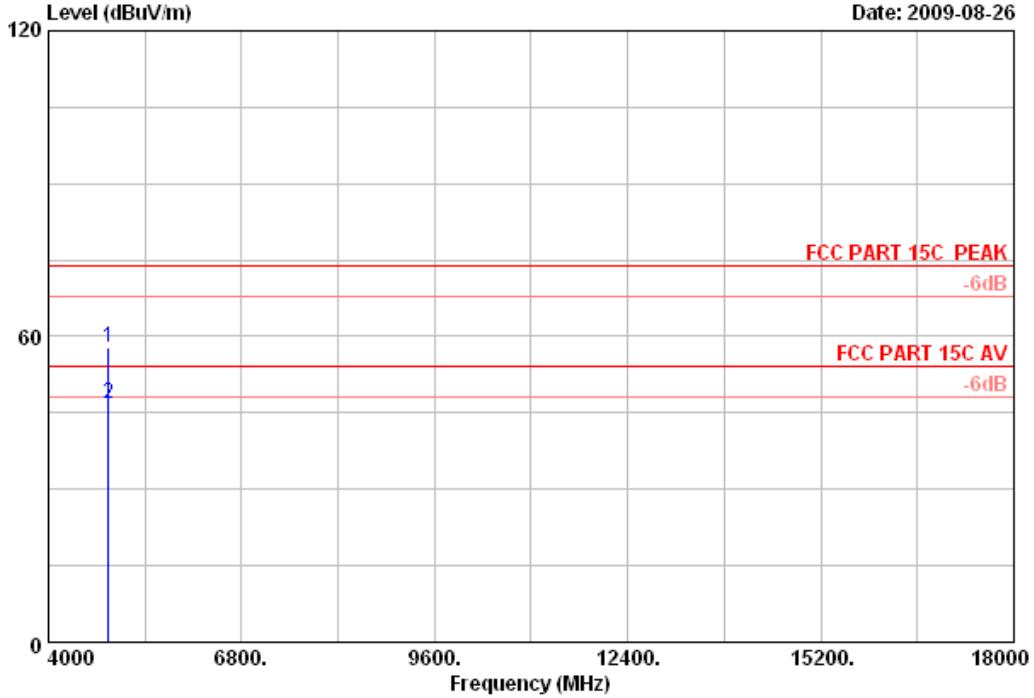


Site no.	: 3m Chamber	Data no.	: 11
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11b CH6 2437MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 12 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 12
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH6 2437MHz

	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	34.78	12.23	35.36	46.11	57.76	74.00	16.24	Peak
2	4874.000	34.78	12.23	35.36	35.13	46.78	54.00	7.22	Average

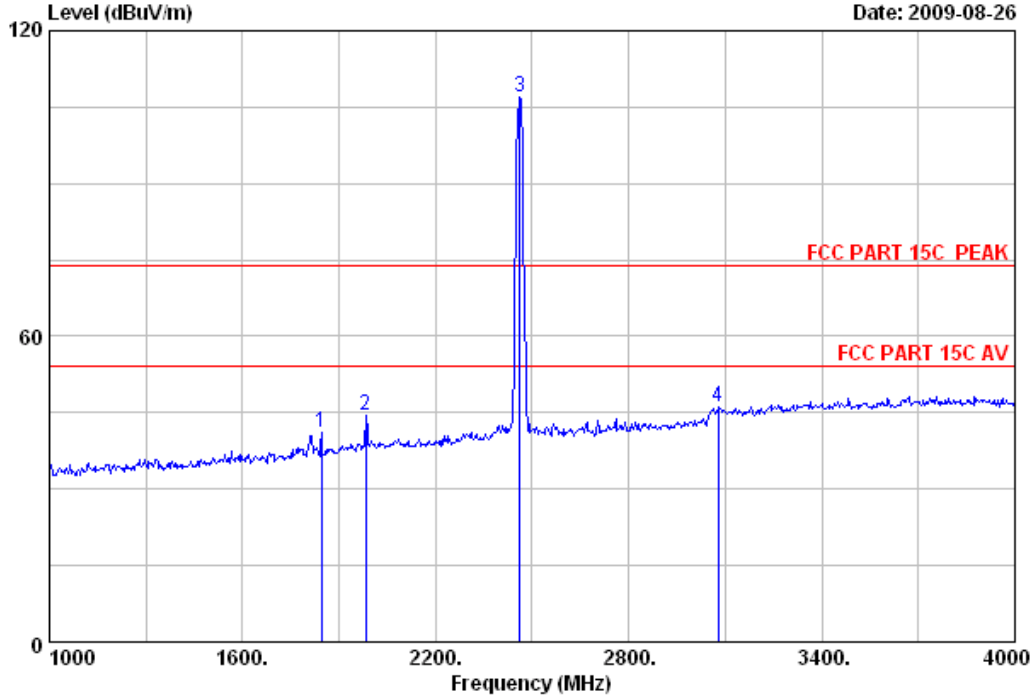
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 13 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 13
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	1846.000	27.30	7.52	36.23	42.38	40.97	74.00	33.03	Peak
2	1984.000	27.83	7.76	36.06	44.84	44.37	74.00	29.63	Peak
3	2462.000	28.55	8.76	36.02	105.61	106.90	74.00	-32.90	Peak
4	3079.000	30.39	9.97	35.90	41.60	46.06	74.00	27.94	Peak

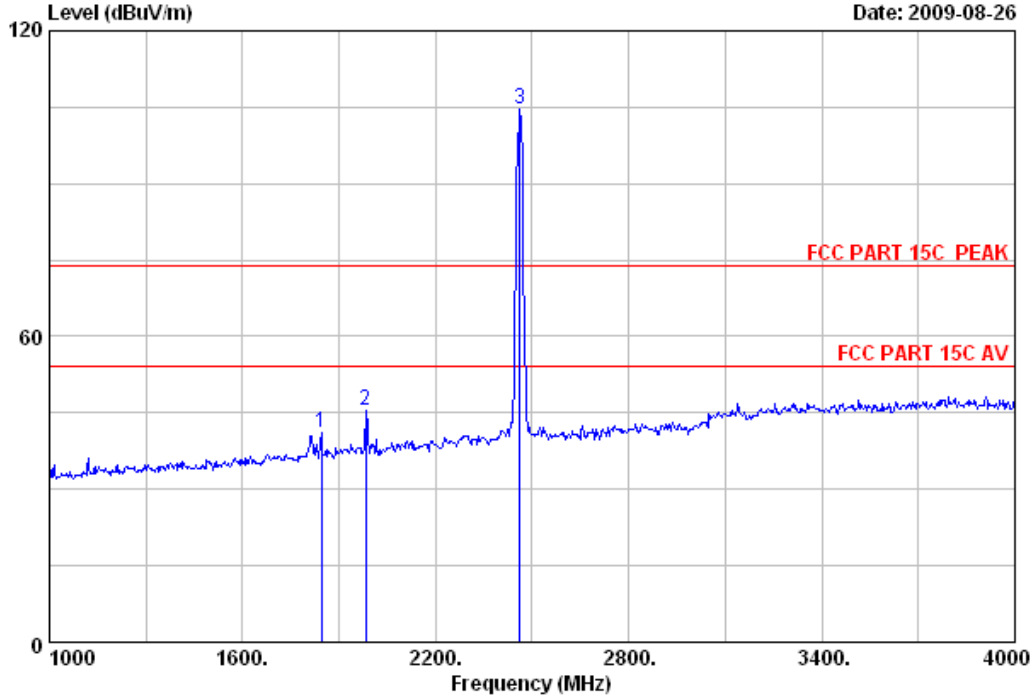
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 14 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 14
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	1846.000	27.30	7.52	36.23	42.38	40.97	74.00	33.03	Peak
2	1984.000	27.83	7.76	36.06	46.09	45.62	74.00	28.38	Peak
3	2462.000	28.55	8.76	36.02	103.25	104.54	74.00	-30.54	Peak

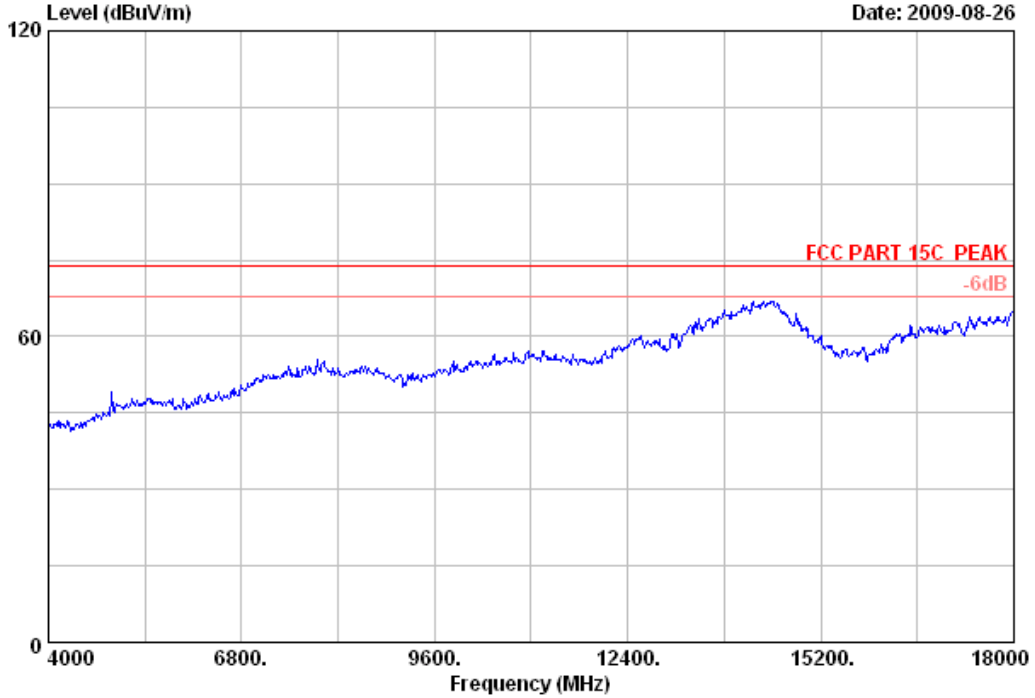
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 15 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

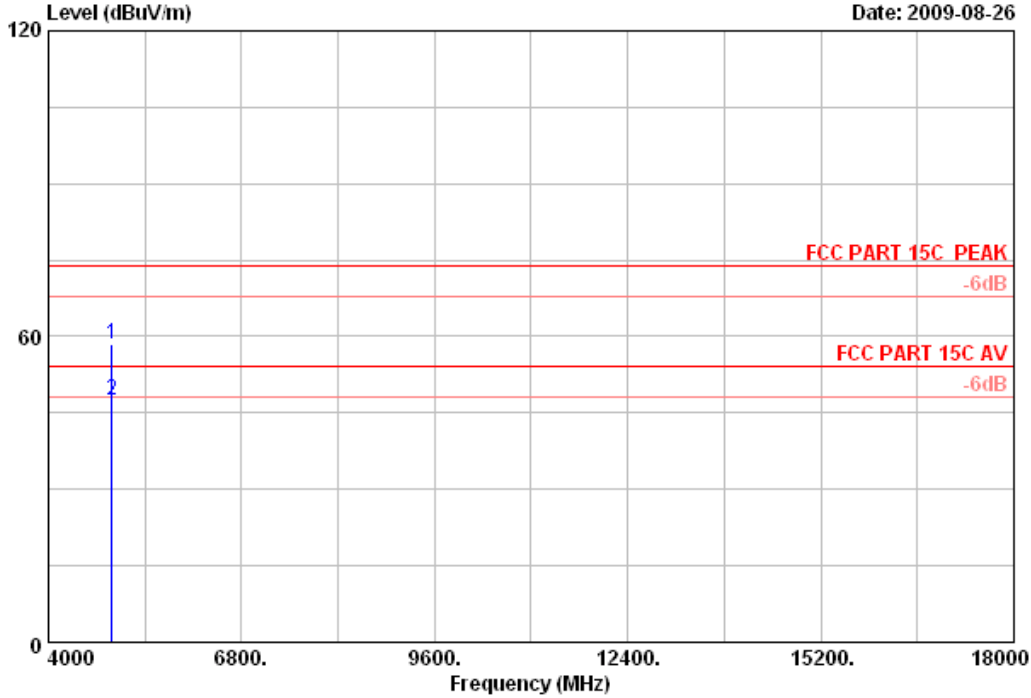


Site no.	: 3m Chamber	Data no.	: 15
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11b CH11 2462MHz		



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 16 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 16
 Dis. / Ant. : 3m 3115(O905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	35.09	12.58	35.34	46.27	58.60	74.00	15.40	Peak
2	4924.000	35.09	12.58	35.34	35.18	47.51	54.00	6.49	Average

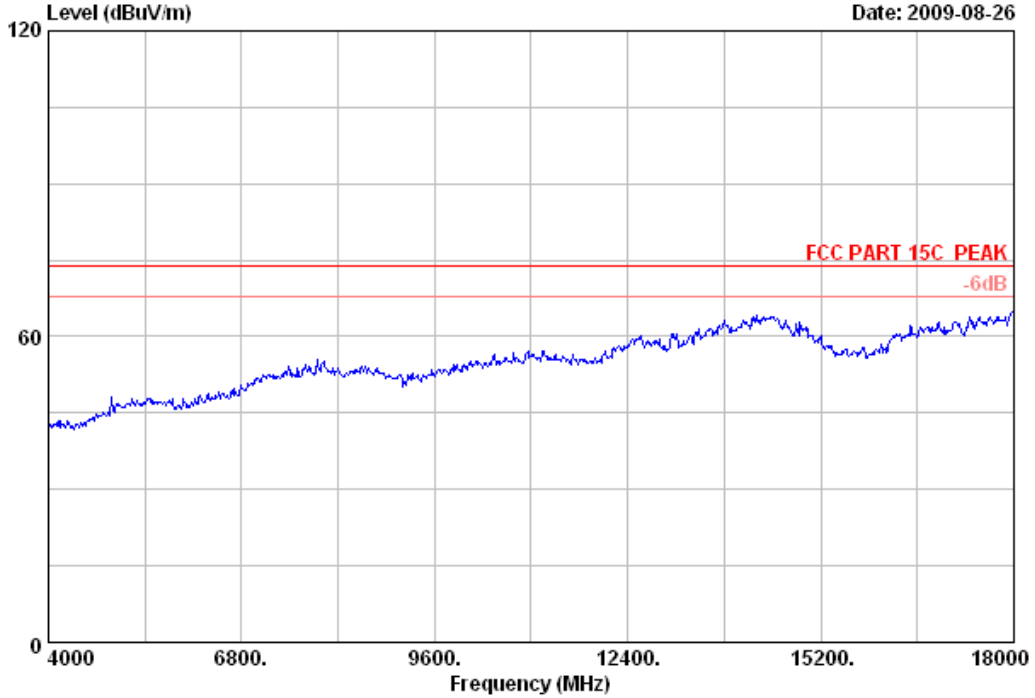
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 17 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

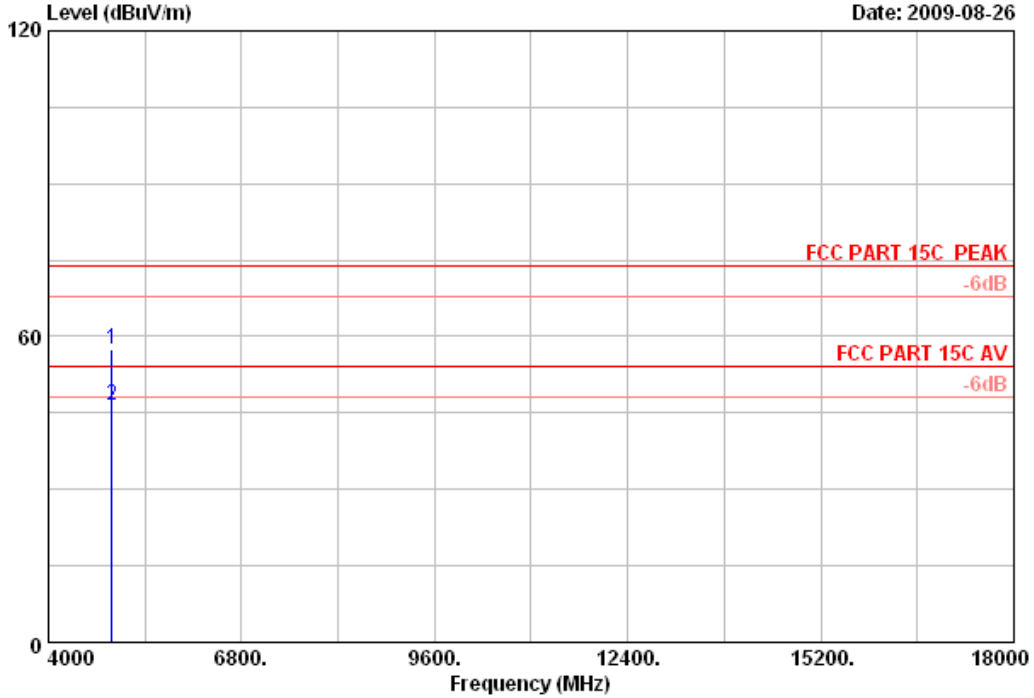


Site no.	: 3m Chamber	Data no.	: 17
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11b CH11 2462MHz		



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 18 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 18
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	35.09	12.58	35.34	45.24	57.57	74.00	16.43	Peak
2	4924.000	35.09	12.58	35.34	34.27	46.60	54.00	7.40	Average

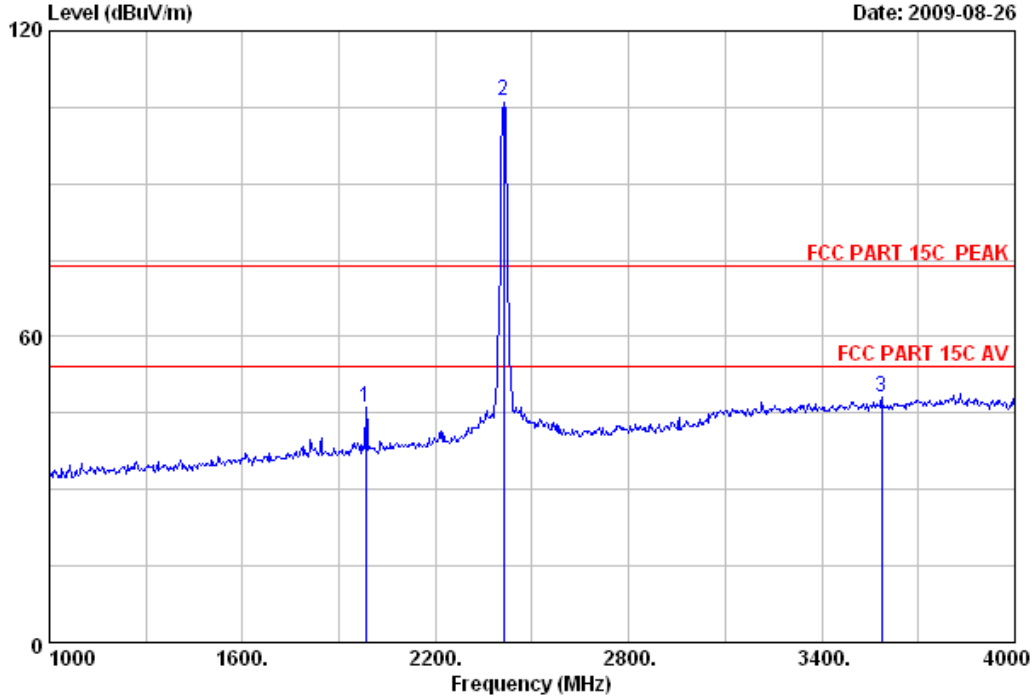
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 19 File: E:\2009 report data\T\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 19
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

	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	27.83	7.76	36.06	46.56	46.09	74.00	27.91	Peak
2	2412.000	28.48	8.60	35.95	105.07	106.20	74.00	-32.20	Peak
3	3586.000	31.72	10.61	35.60	41.37	48.10	74.00	25.90	Peak

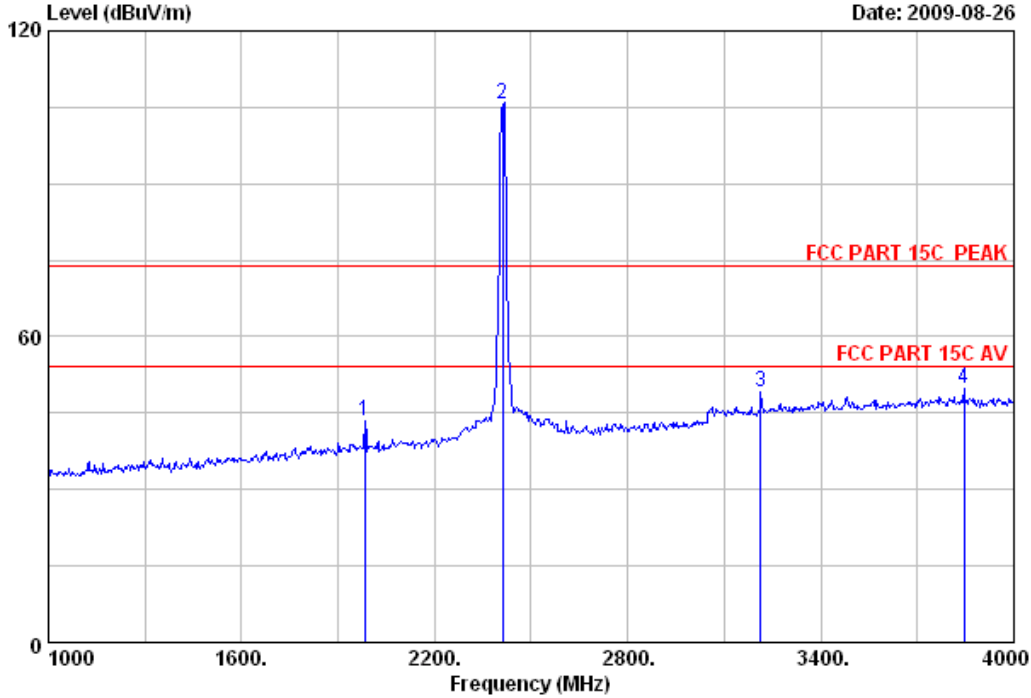
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 20 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 20
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

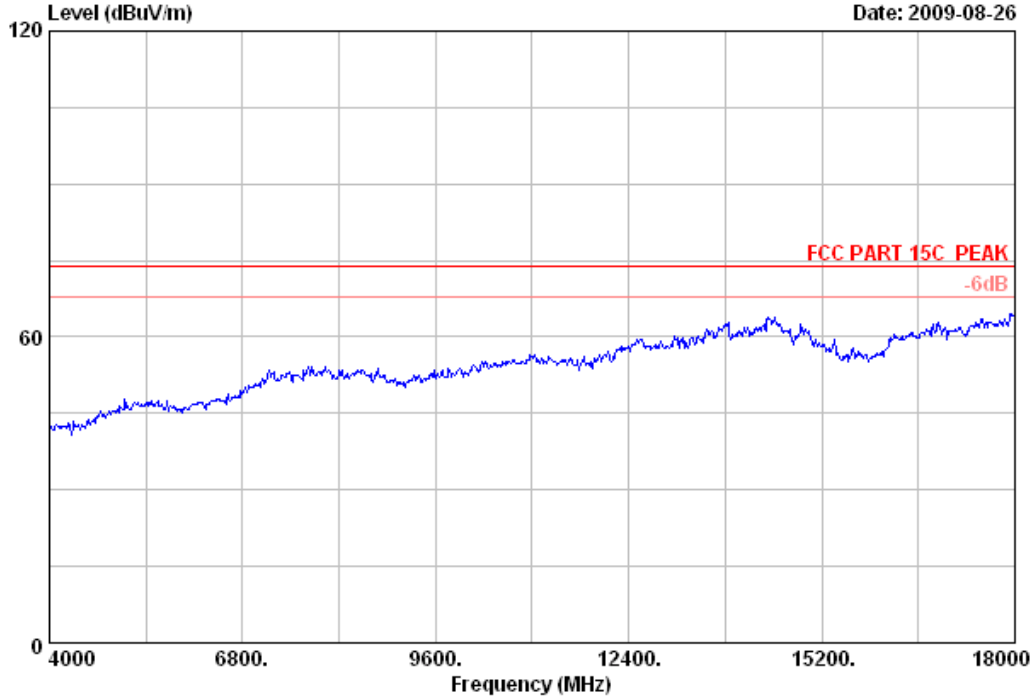
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1984.000	27.83	7.76	36.06	43.89	43.42	74.00	30.58	Peak
2	2412.000	28.48	8.60	35.95	104.33	105.46	74.00	-31.46	Peak
3	3214.000	30.78	9.88	35.86	44.42	49.22	74.00	24.78	Peak
4	3844.000	32.08	11.13	35.46	42.14	49.89	74.00	24.11	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.



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 21 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

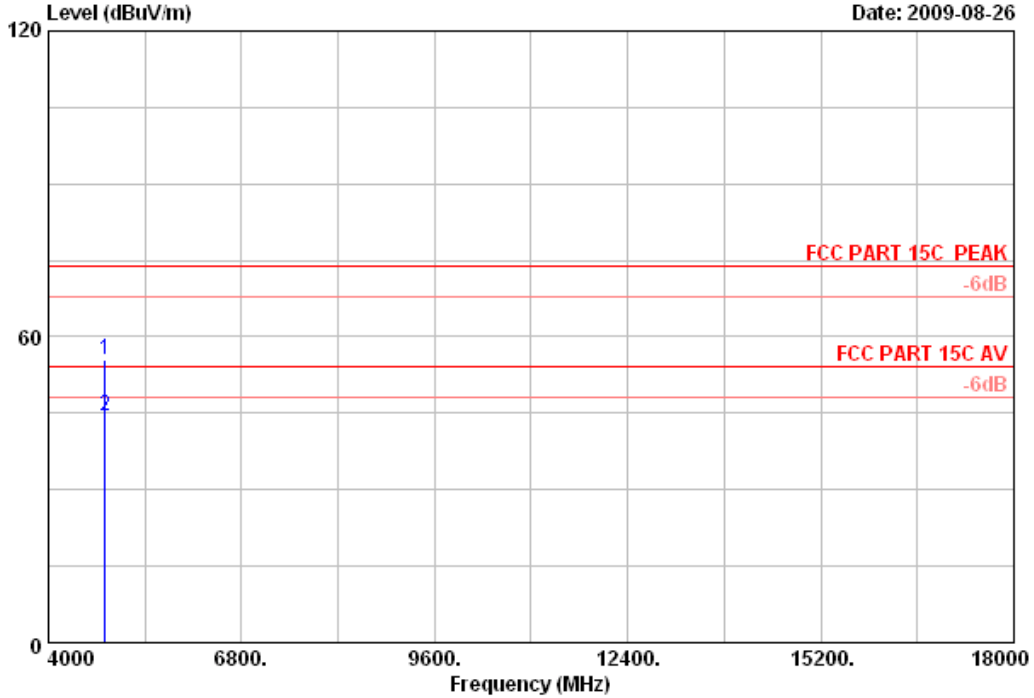


Site no.	: 3m Chamber	Data no.	: 21
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11g CH1 2412MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 22 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 22
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

	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	34.47	12.58	35.25	43.55	55.35	74.00	18.65	Peak
2	4824.000	34.47	12.58	35.25	32.57	44.37	54.00	9.63	Average

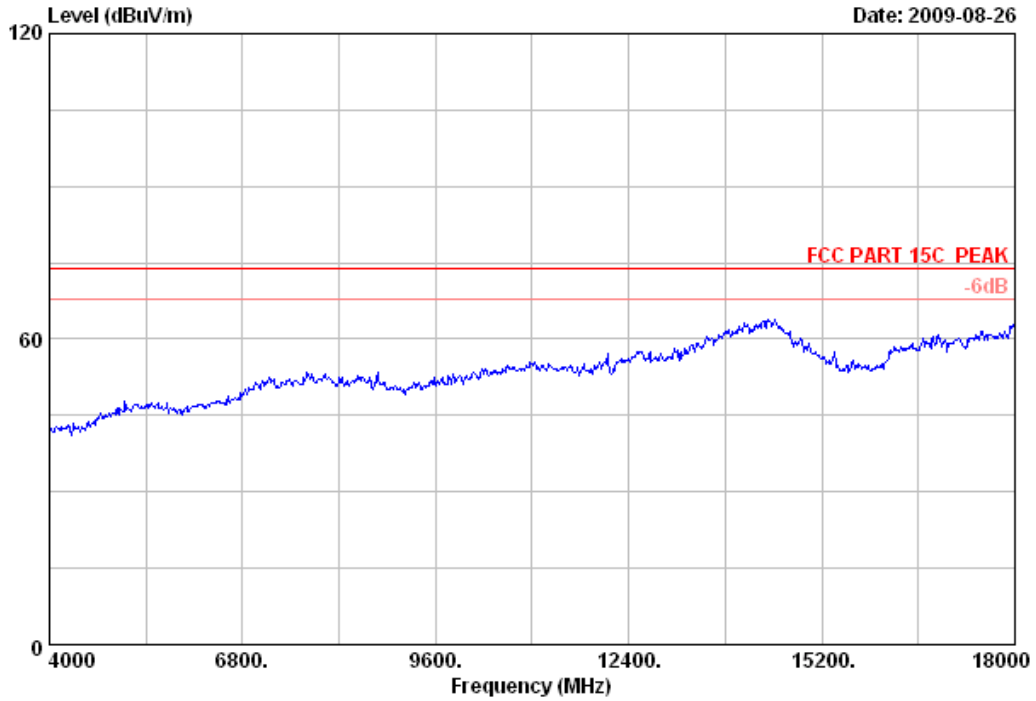
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 23 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

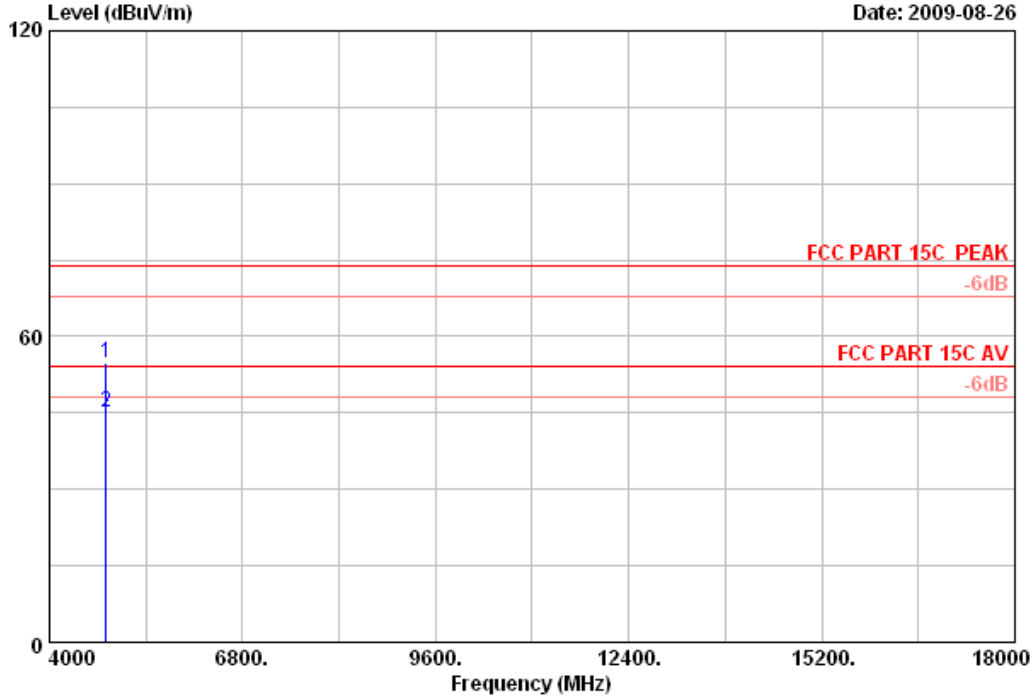


Site no.	: 3m Chamber	Data no.	: 23
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11g CH1 2412MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 24 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 24
 Dis. / Ant. : 3m 3115(O905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

	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	34.47	12.58	35.25	43.17	54.97	74.00	19.03	Peak
2	4824.000	34.47	12.58	35.25	33.37	45.17	54.00	8.83	Average

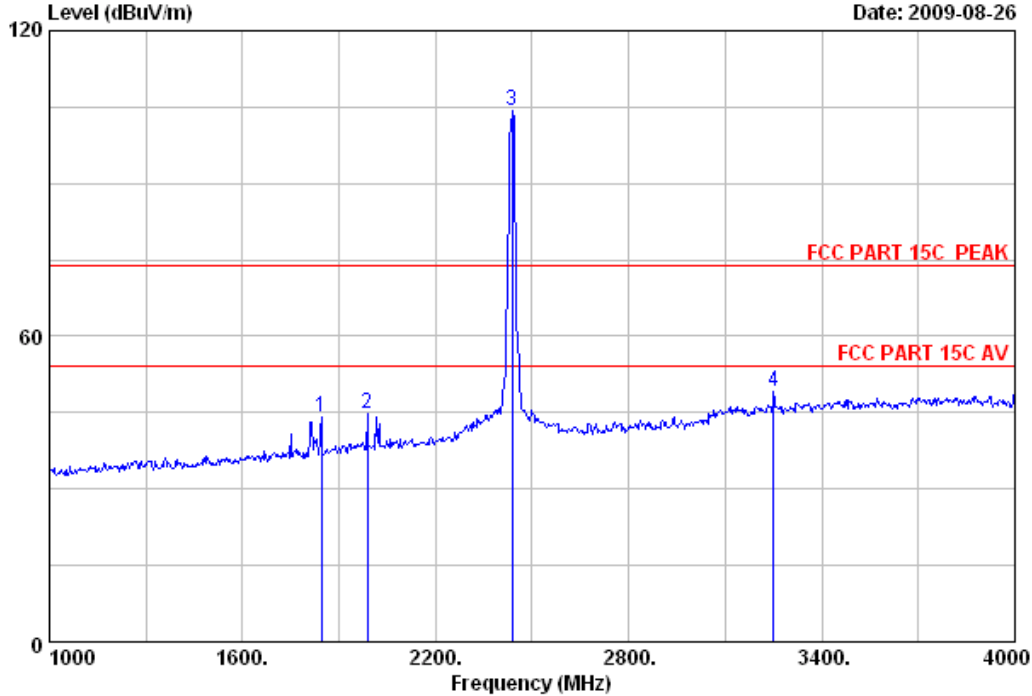
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 25 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 25
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH6 2437MHz

	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	1846.000	27.30	7.52	36.23	45.62	44.21	74.00	29.79	Peak
2	1987.000	27.83	7.76	36.06	45.18	44.71	74.00	29.29	Peak
3	2437.000	28.53	8.60	36.06	103.23	104.30	74.00	-30.30	Peak
4	3250.000	30.88	10.19	35.68	43.87	49.26	74.00	24.74	Peak

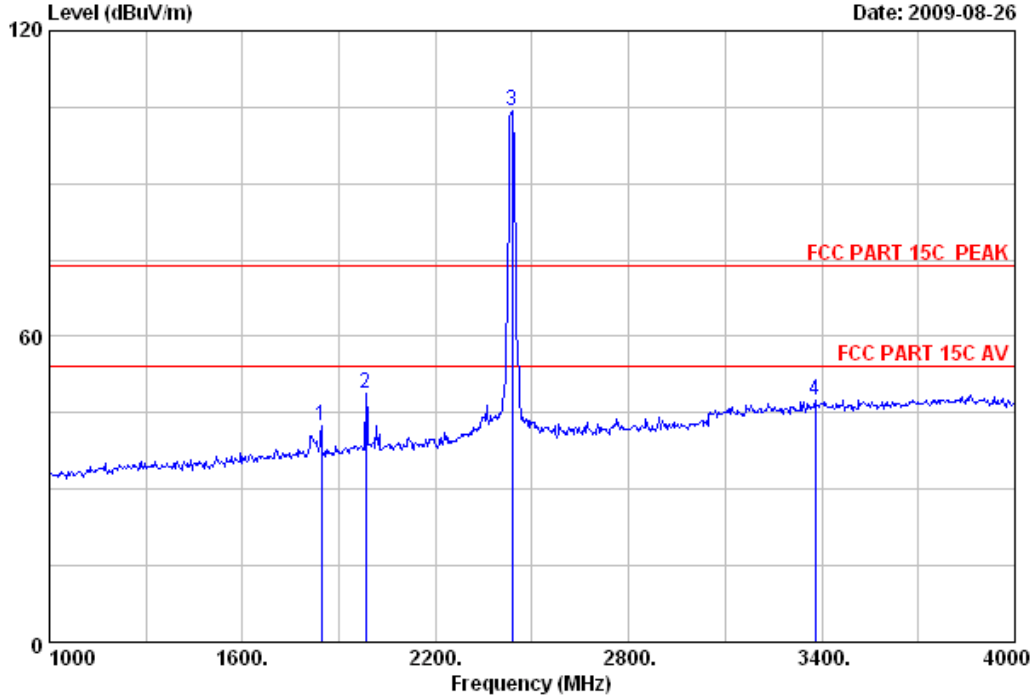
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 26 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 26
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH6 2437MHz

	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	1846.000	27.30	7.52	36.23	43.87	42.46	74.00	31.54	Peak
2	1984.000	27.83	7.76	36.06	49.39	48.92	74.00	25.08	Peak
3	2437.000	28.53	8.60	36.06	103.11	104.18	74.00	-30.18	Peak
4	3379.000	31.26	10.39	35.53	41.33	47.45	74.00	26.55	Peak

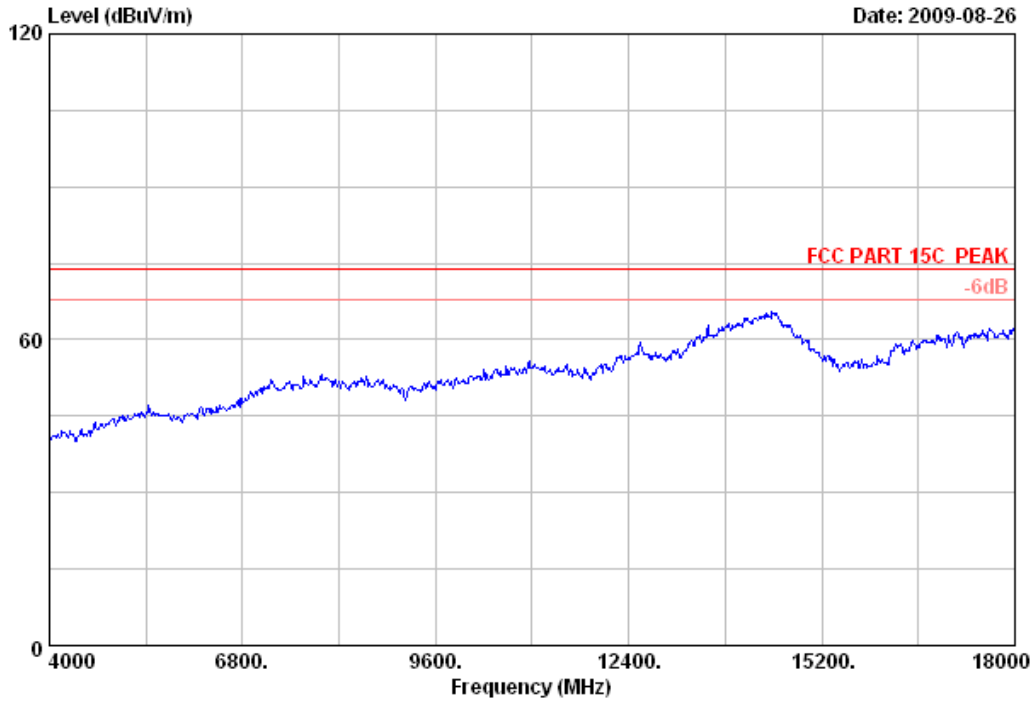
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 27 File: E:\2009 report data\T\TP-LINK\ACS90832.EM6 (72)

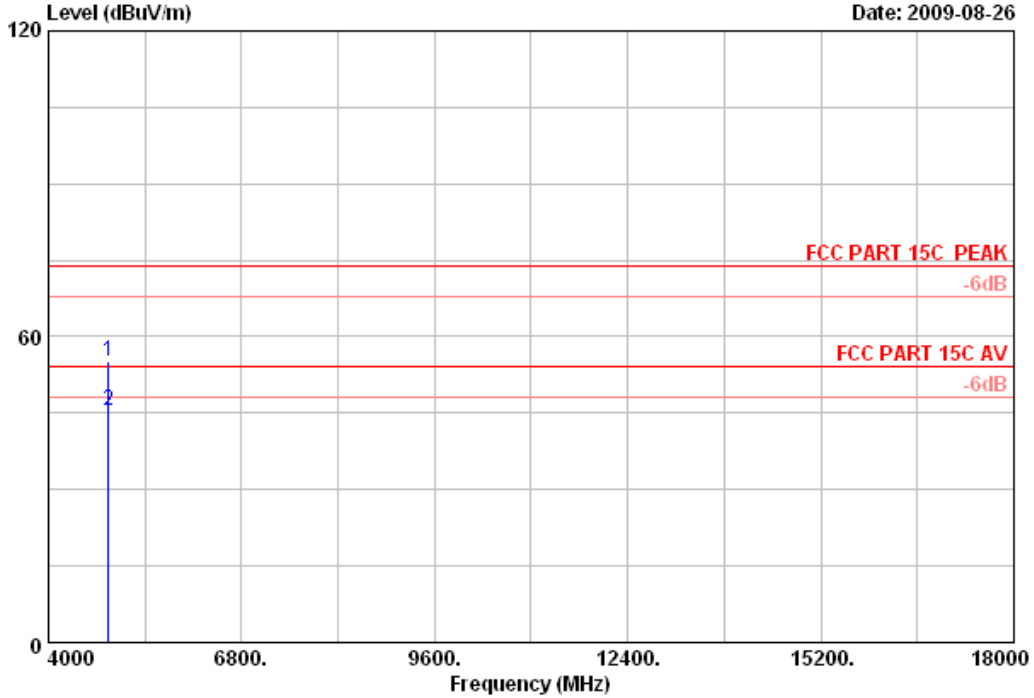


Site no.	: 3m Chamber	Data no.	: 27
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11g CH6 2437MHz		



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 28 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 28
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH6 2437MHz

	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	34.78	12.23	35.36	43.57	55.22	74.00	18.78	Peak
2	4874.000	34.78	12.23	35.36	33.88	45.53	54.00	8.47	Average

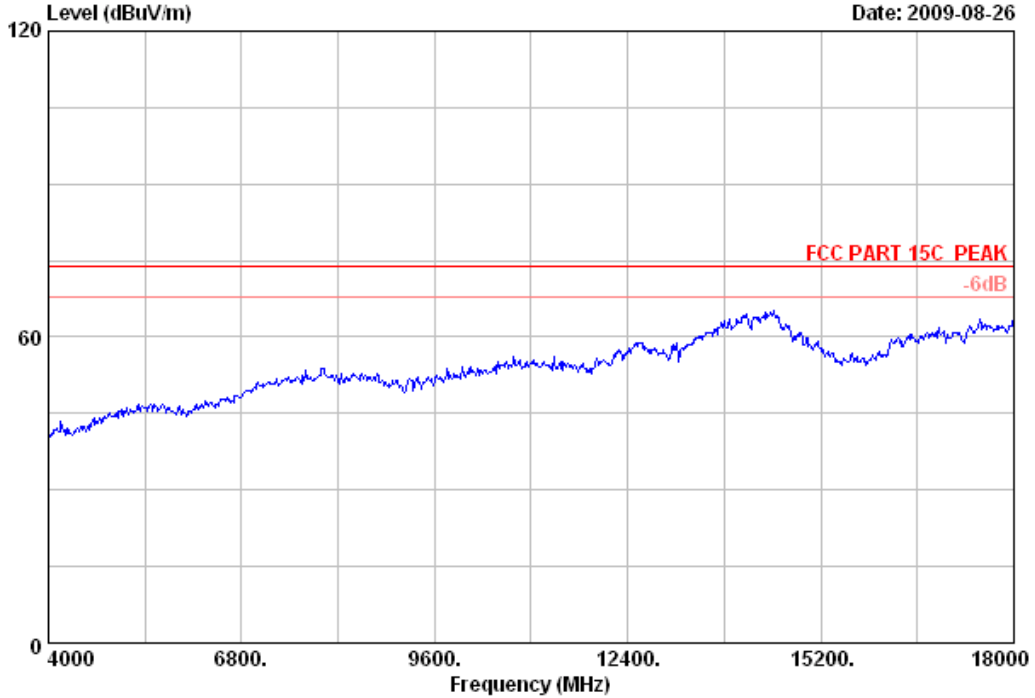
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 29 File: E:\2009 report data\T\TP-LINK\ACS90832.EM6 (72)

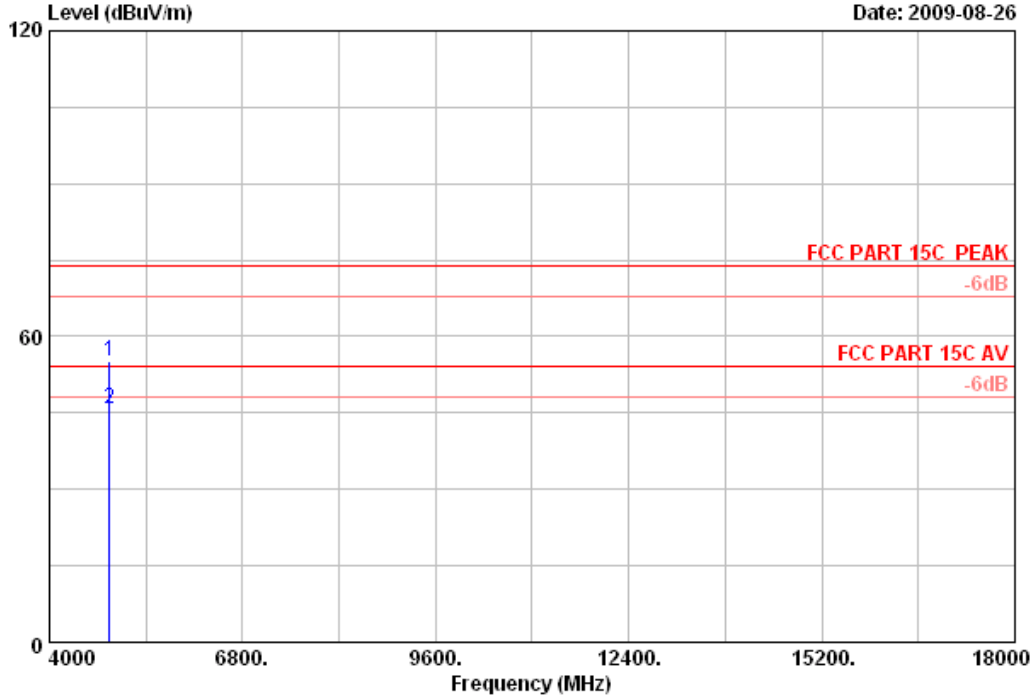


Site no.	: 3m Chamber	Data no.	: 29
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11g CH6 2437MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 30 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 30
 Dis. / Ant. : 3m 3115(O905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH6 2437MHz

	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	34.78	12.23	35.36	43.67	55.32	74.00	18.68	Peak
2	4874.000	34.78	12.23	35.36	34.20	45.85	54.00	8.15	Average

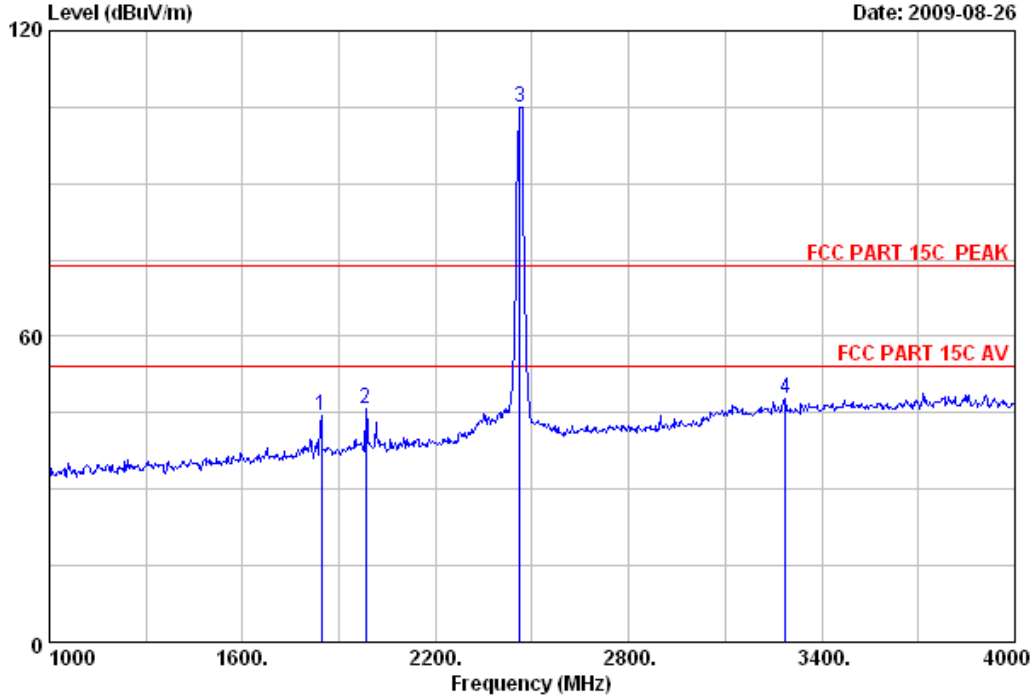
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 31 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 31
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	1846.000	27.30	7.52	36.23	45.91	44.50	74.00	29.50	Peak
2	1984.000	27.83	7.76	36.06	46.33	45.86	74.00	28.14	Peak
3	2462.000	28.55	8.76	36.02	103.79	105.08	74.00	-31.08	Peak
4	3286.000	30.97	10.26	35.79	42.36	47.80	74.00	26.20	Peak

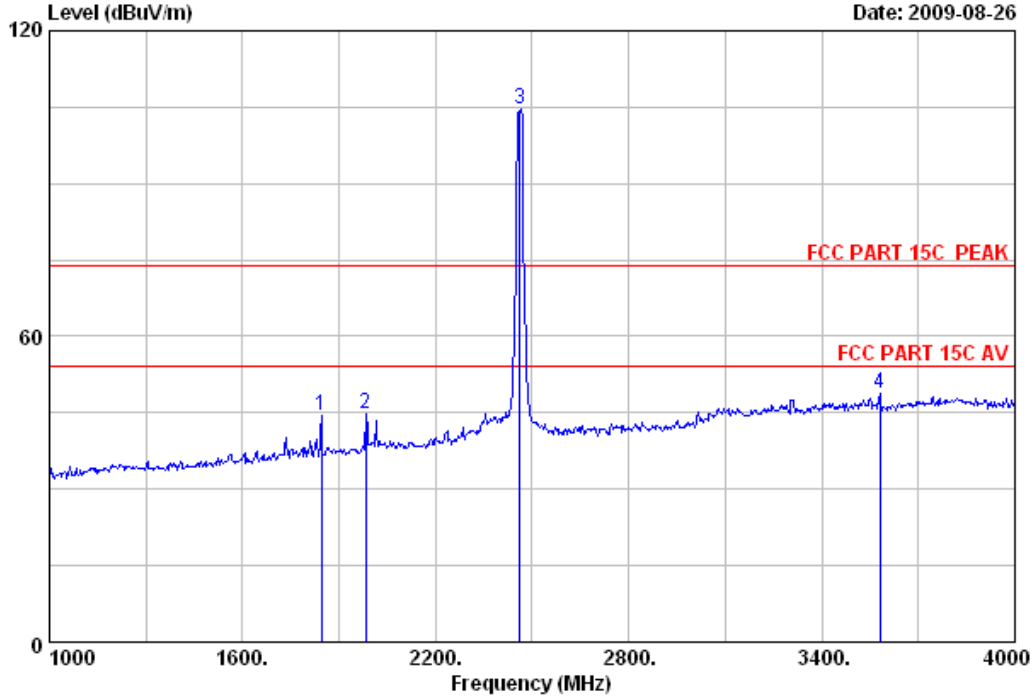
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 32 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 32
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	1846.000	27.30	7.52	36.23	45.80	44.39	74.00	29.61	Peak
2	1984.000	27.83	7.76	36.06	45.18	44.71	74.00	29.29	Peak
3	2462.000	28.55	8.76	36.02	103.35	104.64	74.00	-30.64	Peak
4	3580.000	31.72	10.61	35.60	42.24	48.97	74.00	25.03	Peak

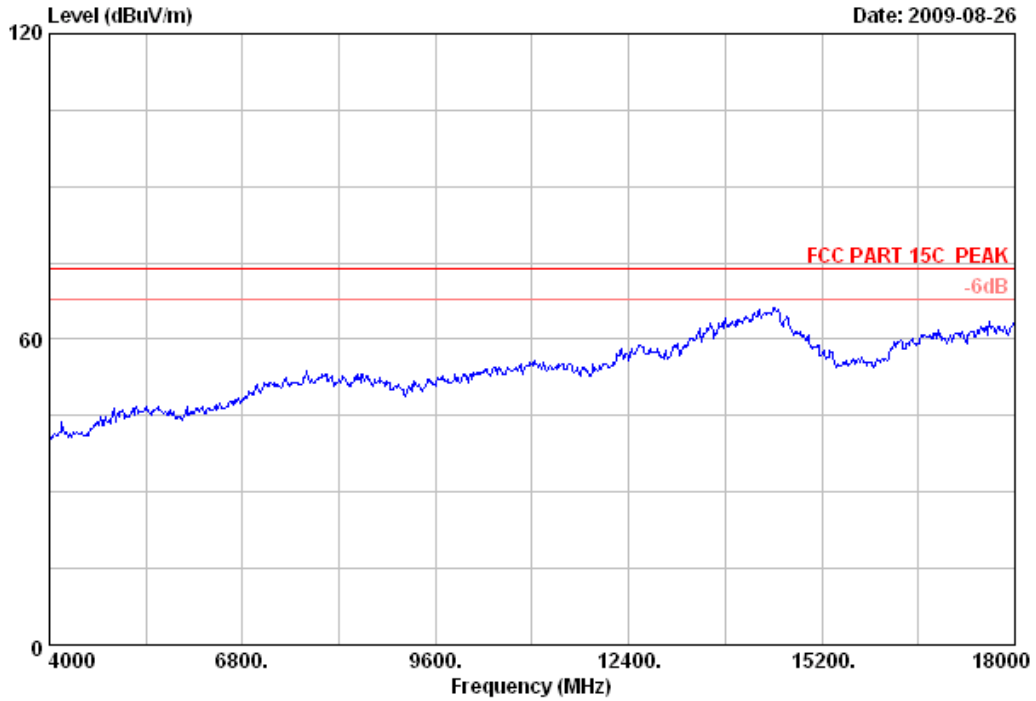
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 33 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

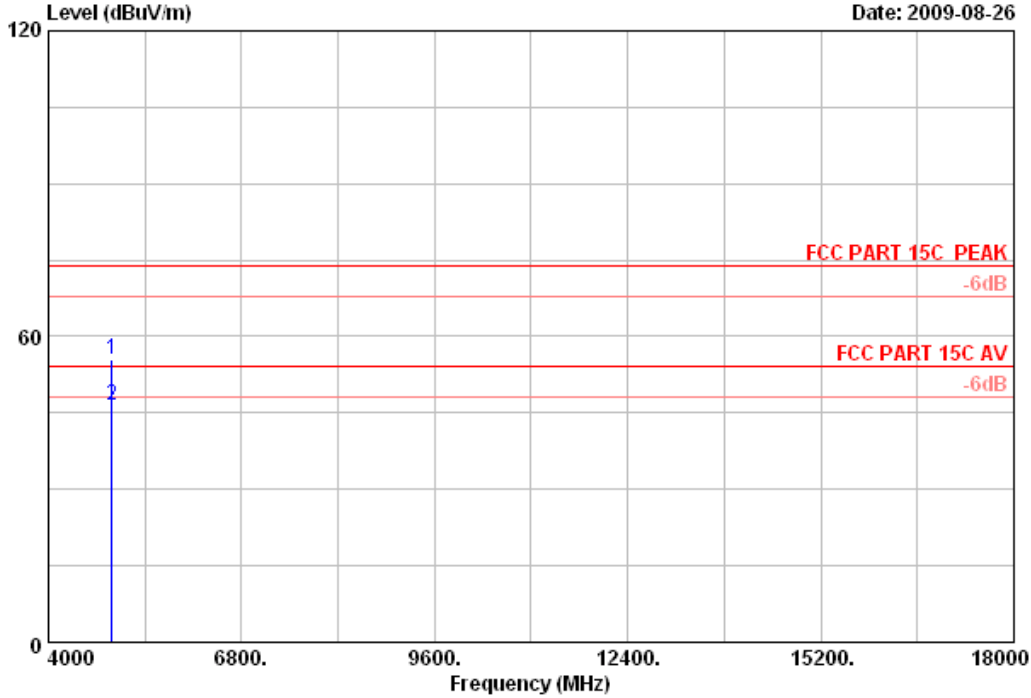


Site no.	: 3m Chamber	Data no.	: 33
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11g CH11 2462MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 34 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 34
 Dis. / Ant. : 3m 3115(O905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	35.09	12.58	35.34	43.19	55.52	74.00	18.48	Peak
2	4924.000	35.09	12.58	35.34	34.15	46.48	54.00	7.52	Average

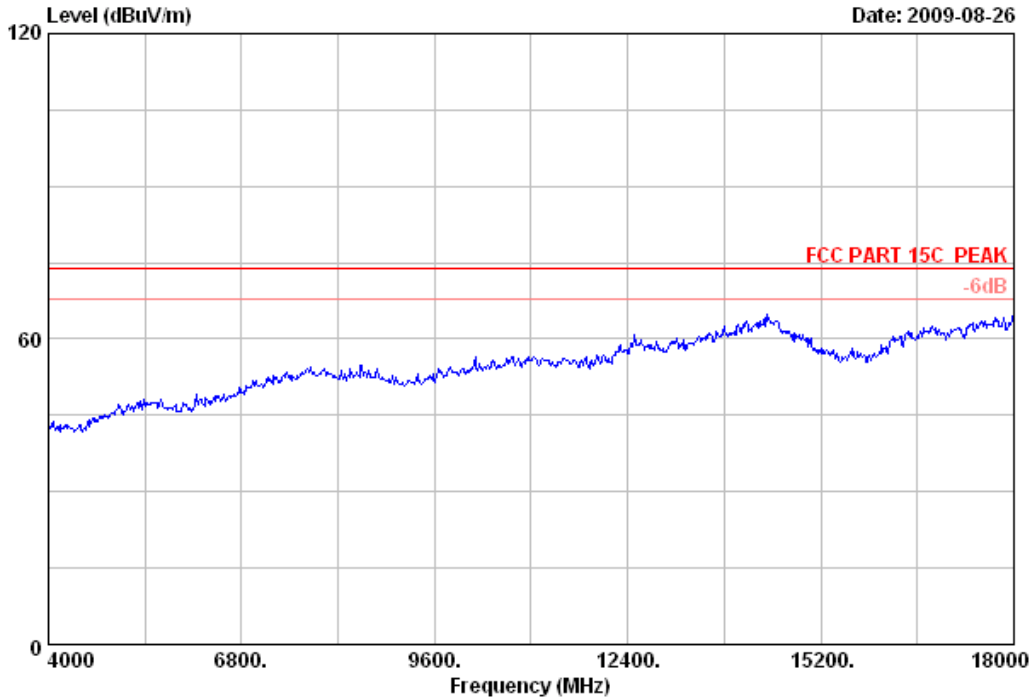
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 35 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

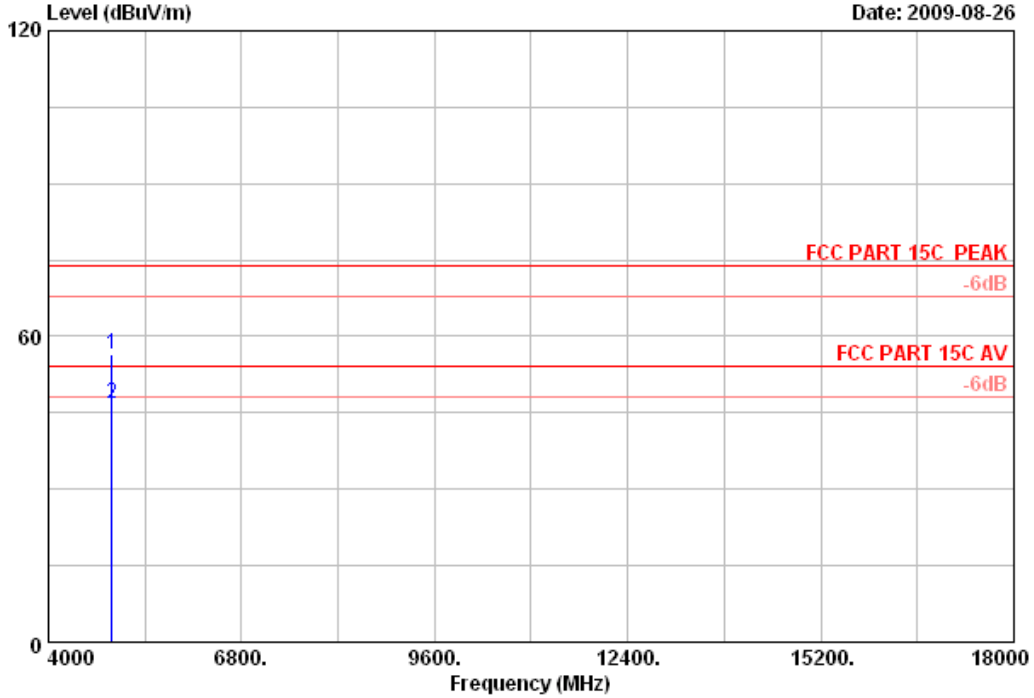


Site no.	: 3m Chamber	Data no.	: 35
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11g CH11 2462MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 36 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 36
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	35.09	12.58	35.34	44.15	56.48	74.00	17.52	Peak
2	4924.000	35.09	12.58	35.34	34.56	46.89	54.00	7.11	Average

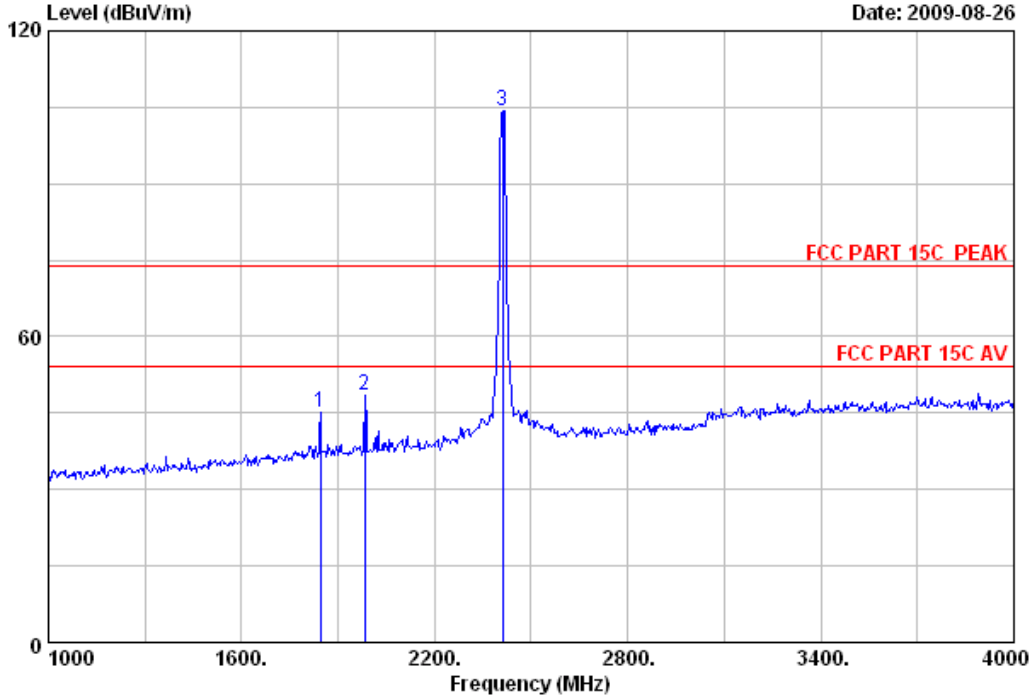
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 37 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 37
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

	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	1846.000	27.30	7.52	36.23	46.51	45.10	74.00	28.90	Peak
2	1984.000	27.83	7.76	36.06	49.01	48.54	74.00	25.46	Peak
3	2412.000	28.48	8.60	35.95	103.31	104.44	74.00	-30.44	Peak

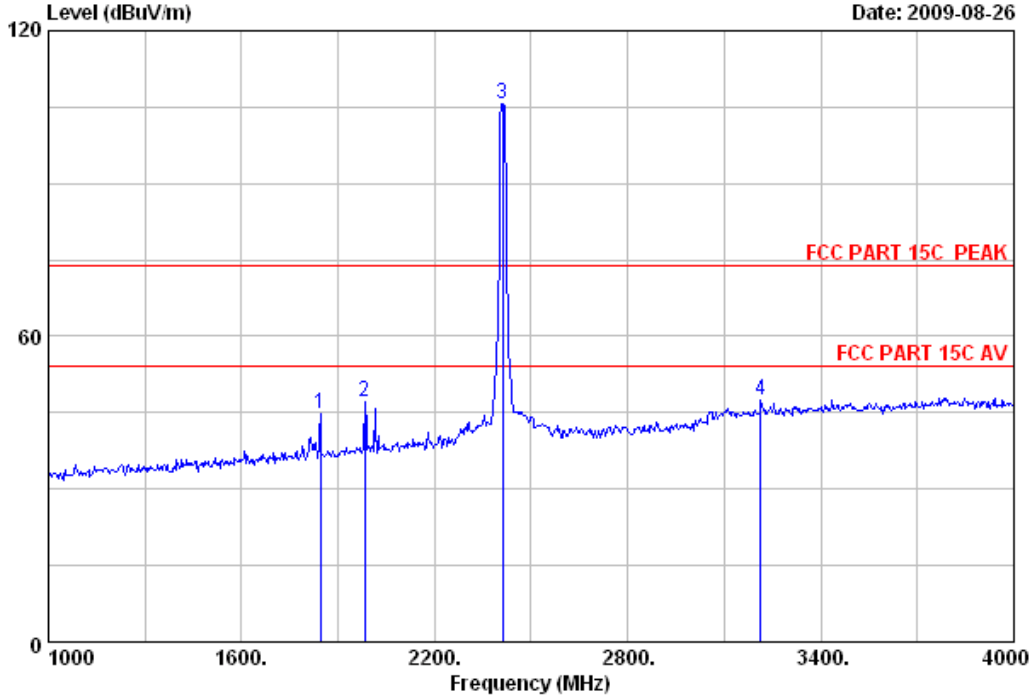
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 38 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 38
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

	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	1846.000	27.30	7.52	36.23	46.24	44.83	74.00	29.17	Peak
2	1984.000	27.83	7.76	36.06	47.60	47.13	74.00	26.87	Peak
3	2412.000	28.48	8.60	35.95	104.56	105.69	74.00	-31.69	Peak
4	3214.000	30.78	9.88	35.86	42.70	47.50	74.00	26.50	Peak

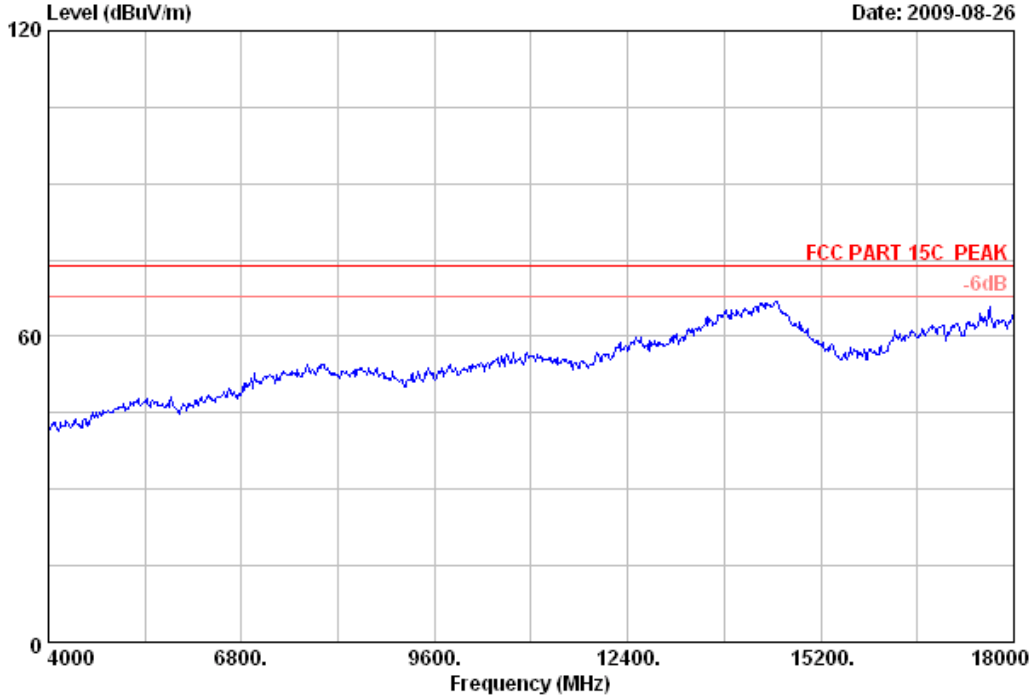
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 39 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

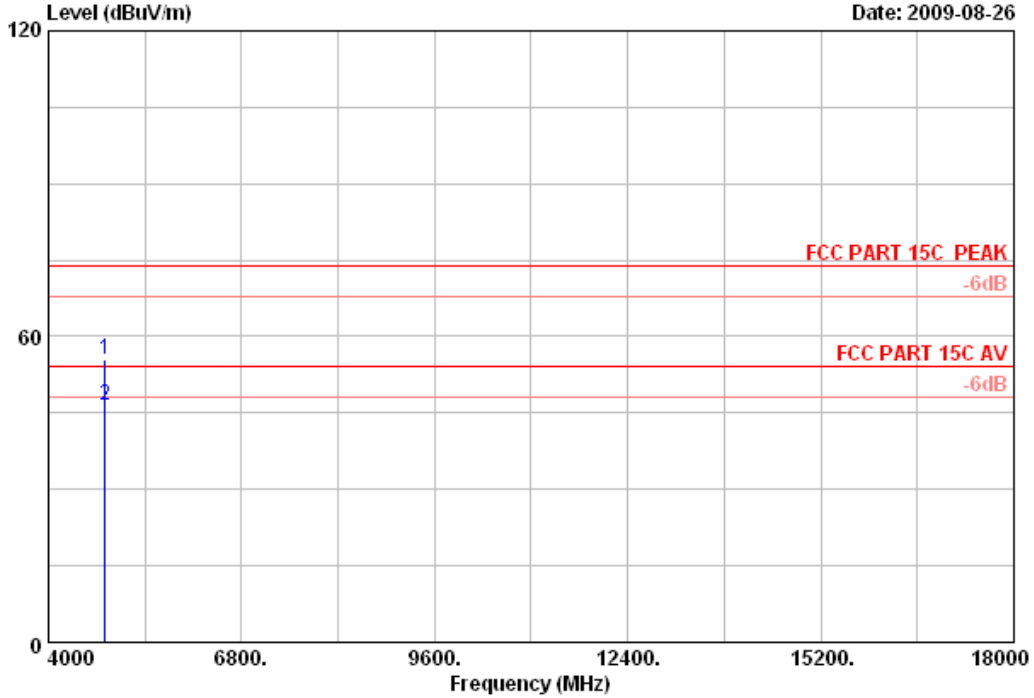


Site no.	: 3m Chamber	Data no.	: 39
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH1 2412MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 40 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 40
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

	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	34.47	12.58	35.25	43.57	55.37	74.00	18.63	Peak
2	4824.000	34.47	12.58	35.25	34.66	46.46	54.00	7.54	Average

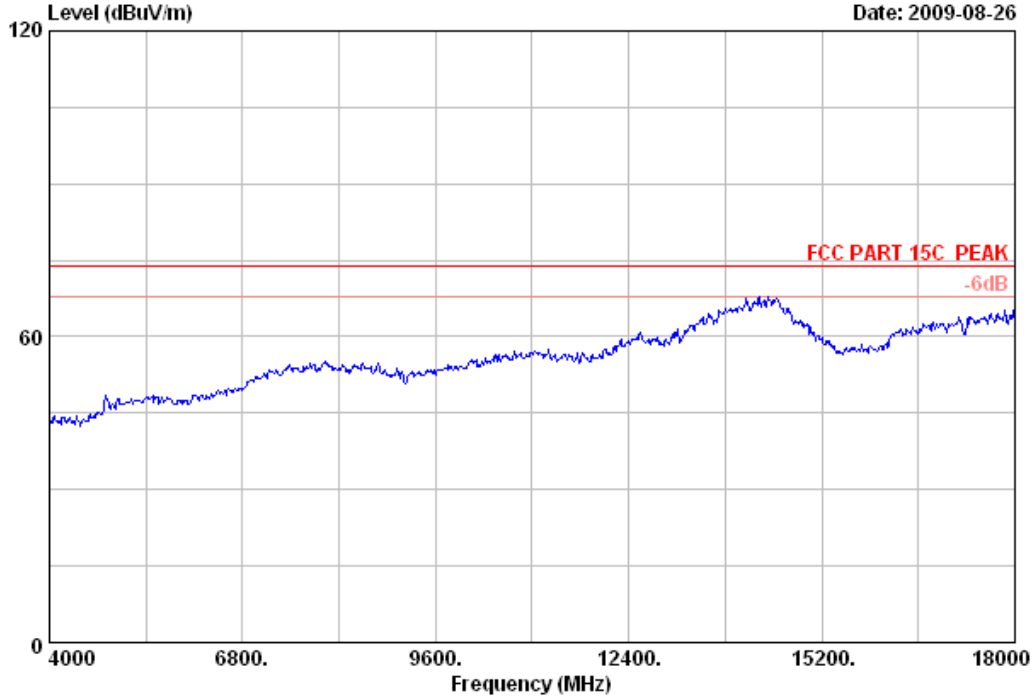
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 41 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

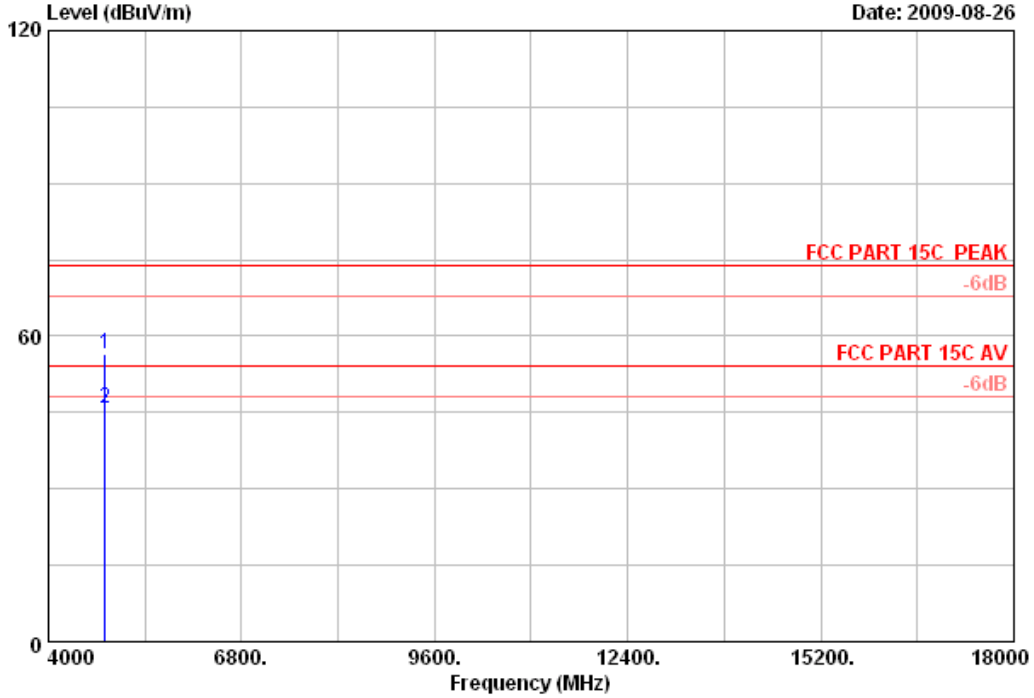


Site no.	: 3m Chamber	Data no.	: 41
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH1 2412MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 42 File: E:\2009 report data\T\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 42
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

	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	34.47	12.58	35.25	44.58	56.38	74.00	17.62	Peak
2	4824.000	34.47	12.58	35.25	33.96	45.76	54.00	8.24	Average

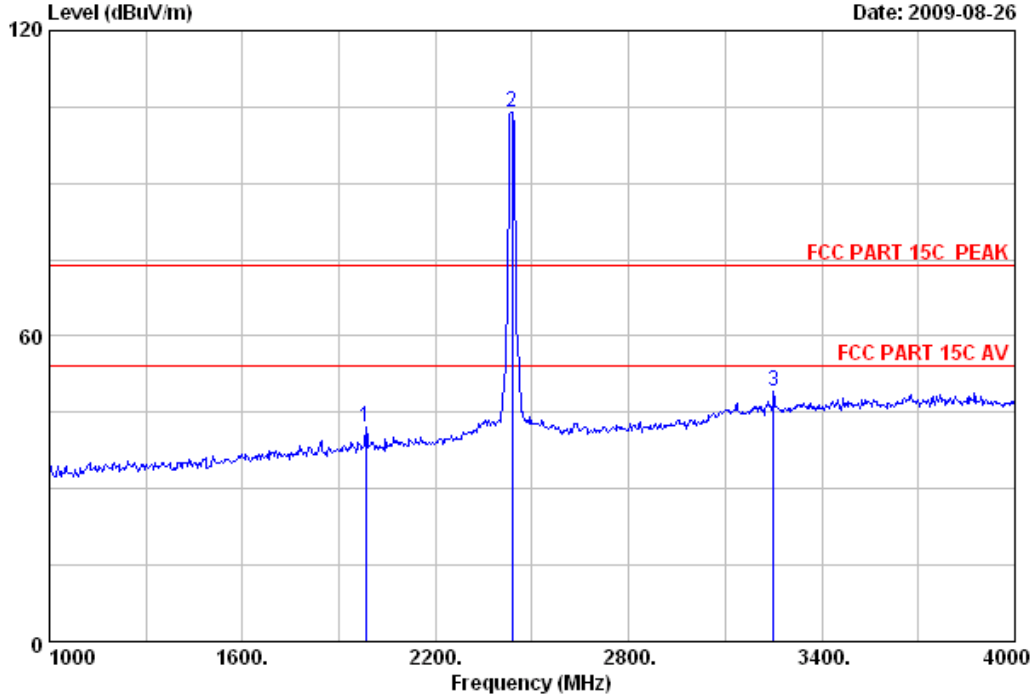
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 43 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 43
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH6 2437MHz

	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	27.83	7.76	36.06	42.48	42.01	74.00	31.99	Peak
2	2437.000	28.53	8.60	36.06	102.93	104.00	74.00	-30.00	Peak
3	3250.000	30.88	10.19	35.68	43.60	48.99	74.00	25.01	Peak

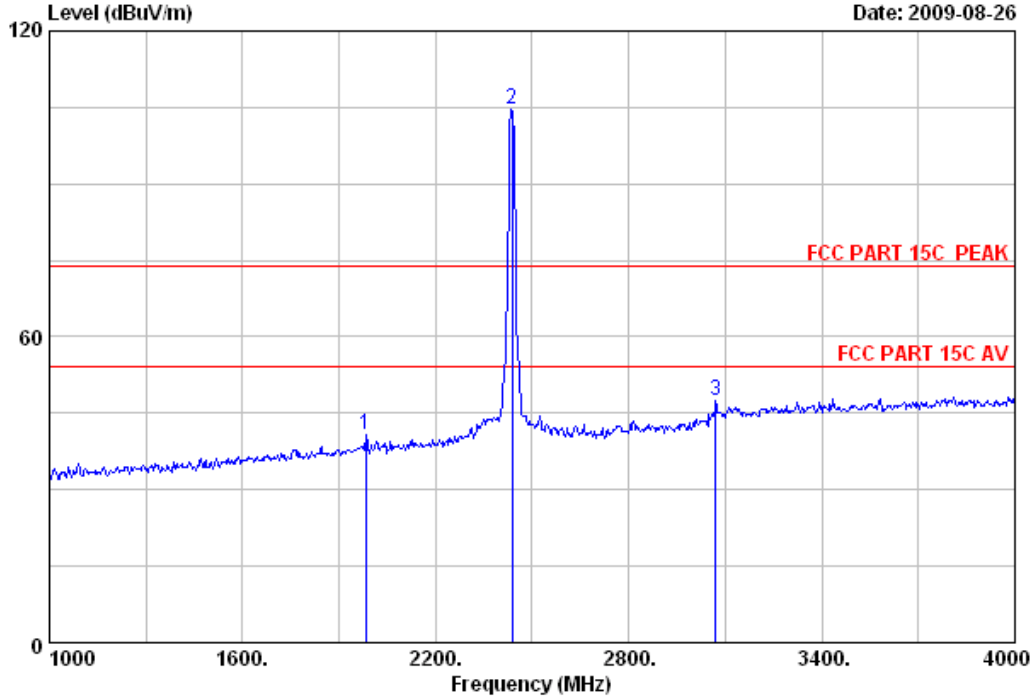
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 44 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)



Site no. : 3m Chamber Data no. : 44
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH6 2437MHz

	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	27.83	7.76	36.06	41.24	40.77	74.00	33.23	Peak
2	2437.000	28.53	8.60	36.06	103.62	104.69	74.00	-30.69	Peak
3	3070.000	30.39	9.96	35.90	43.02	47.47	74.00	26.53	Peak

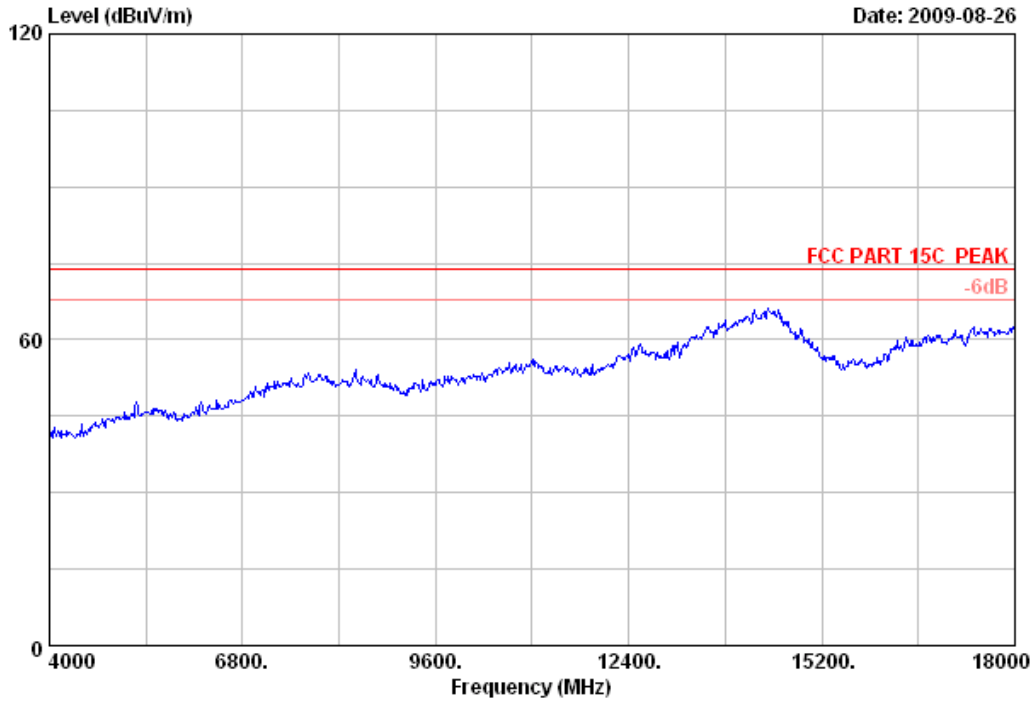
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 45 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

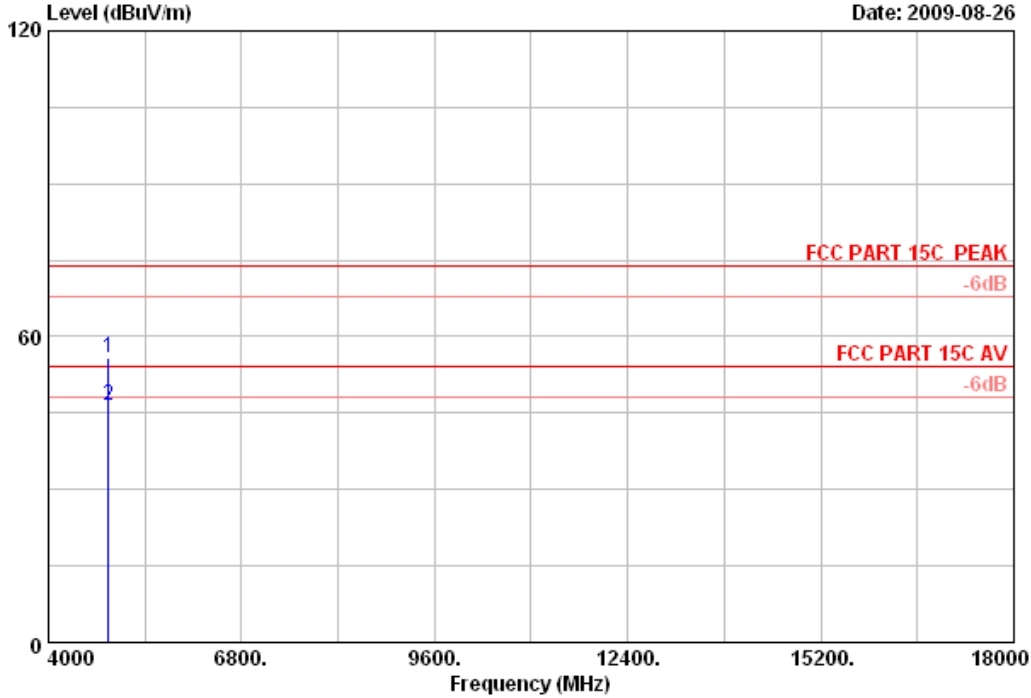


Site no.	: 3m Chamber	Data no.	: 45
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH6 2437MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 46 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 46
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH6 2437MHz

	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	34.78	12.23	35.36	44.23	55.88	74.00	18.12	Peak
2	4874.000	34.78	12.23	35.36	34.66	46.31	54.00	7.69	Average

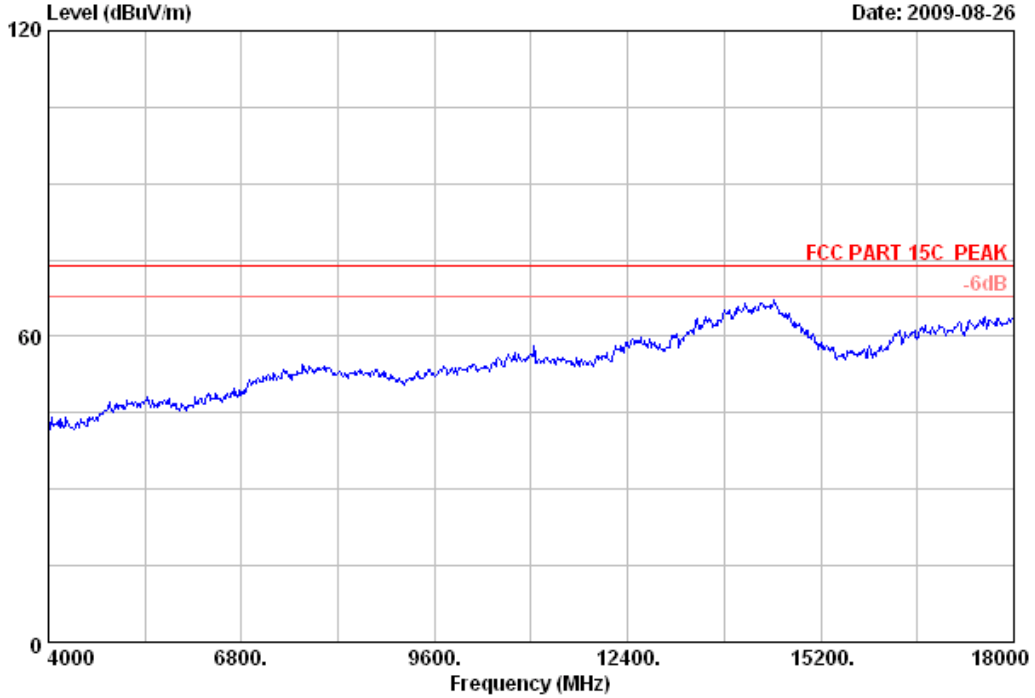
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 47 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

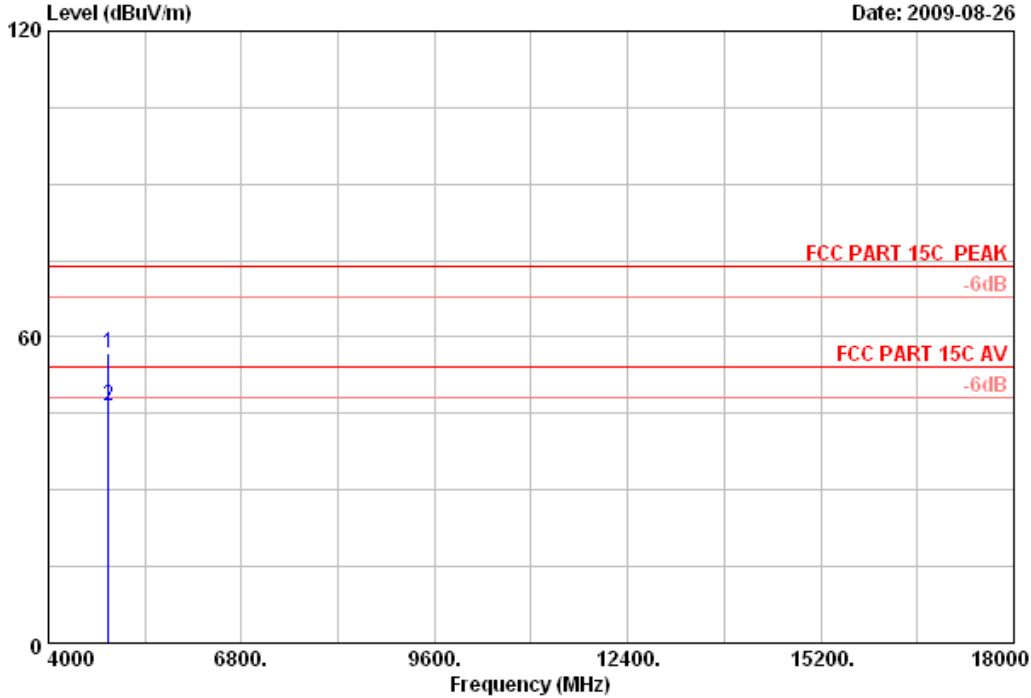


Site no.	: 3m Chamber	Data no.	: 47
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH6 2437MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 48 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 48
 Dis. / Ant. : 3m 3115(O905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH6 2437MHz

	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	4874.000	34.78	12.23	35.36	45.11	56.76	74.00	17.24	Peak
2	4874.000	34.78	12.23	35.36	34.97	46.62	54.00	7.38	Average

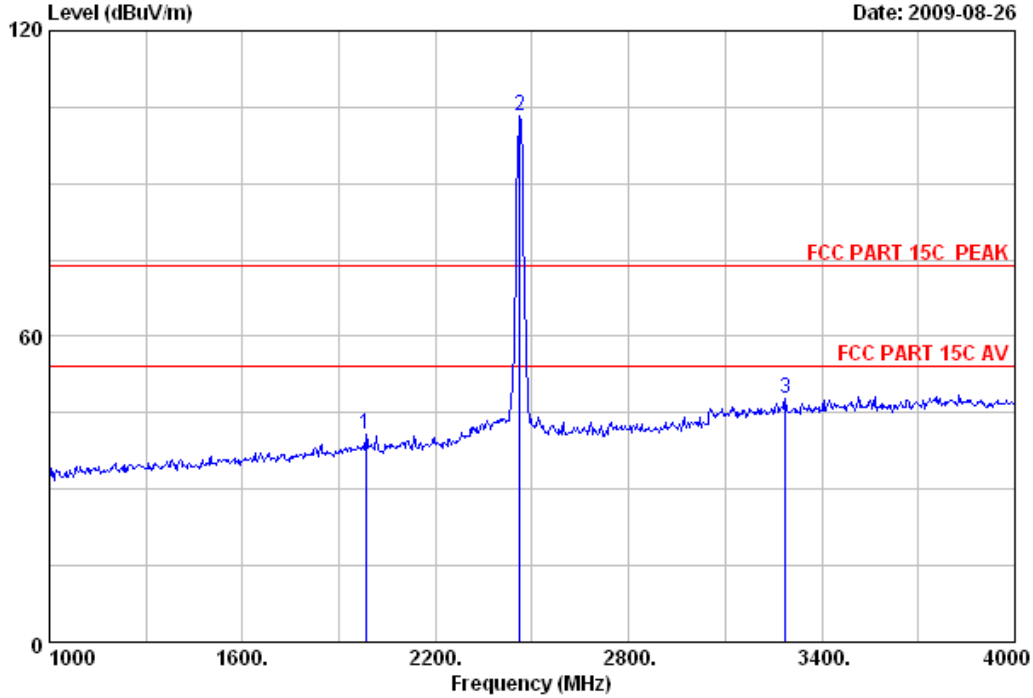
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 49 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 49
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	27.83	7.76	36.06	41.26	40.79	74.00	33.21	Peak
2	2462.000	28.55	8.76	36.02	101.95	103.24	74.00	-29.24	Peak
3	3286.000	30.97	10.26	35.79	42.44	47.88	74.00	26.12	Peak

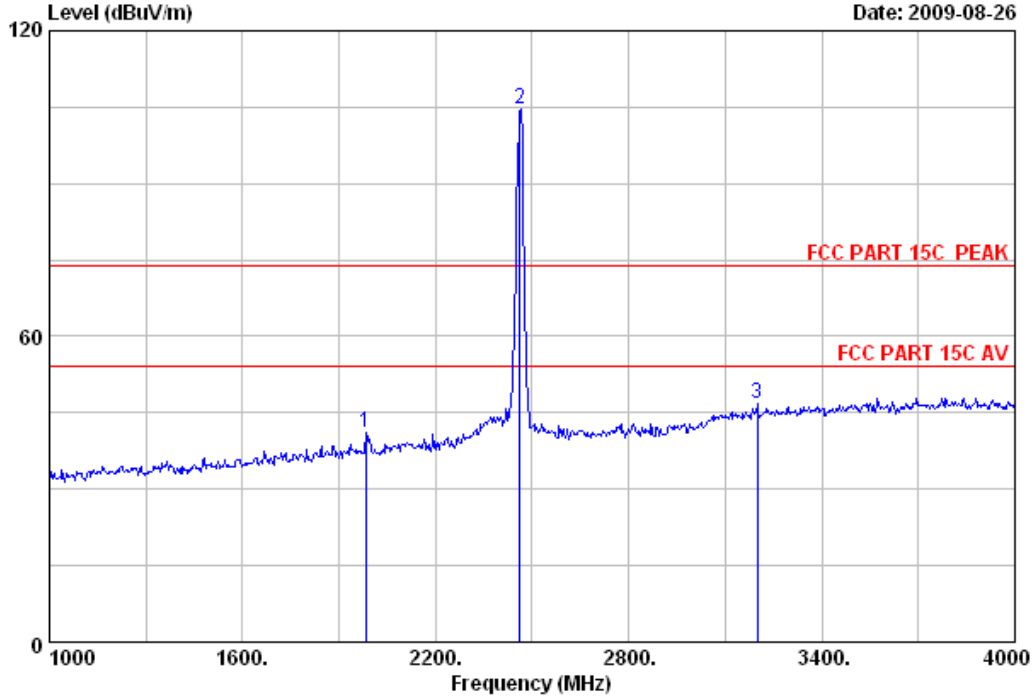
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 50 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 50
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	27.83	7.76	36.06	41.43	40.96	74.00	33.04	Peak
2	2462.000	28.55	8.76	36.02	103.48	104.77	74.00	-30.77	Peak
3	3199.000	30.73	9.88	35.93	42.00	46.68	74.00	27.32	Peak

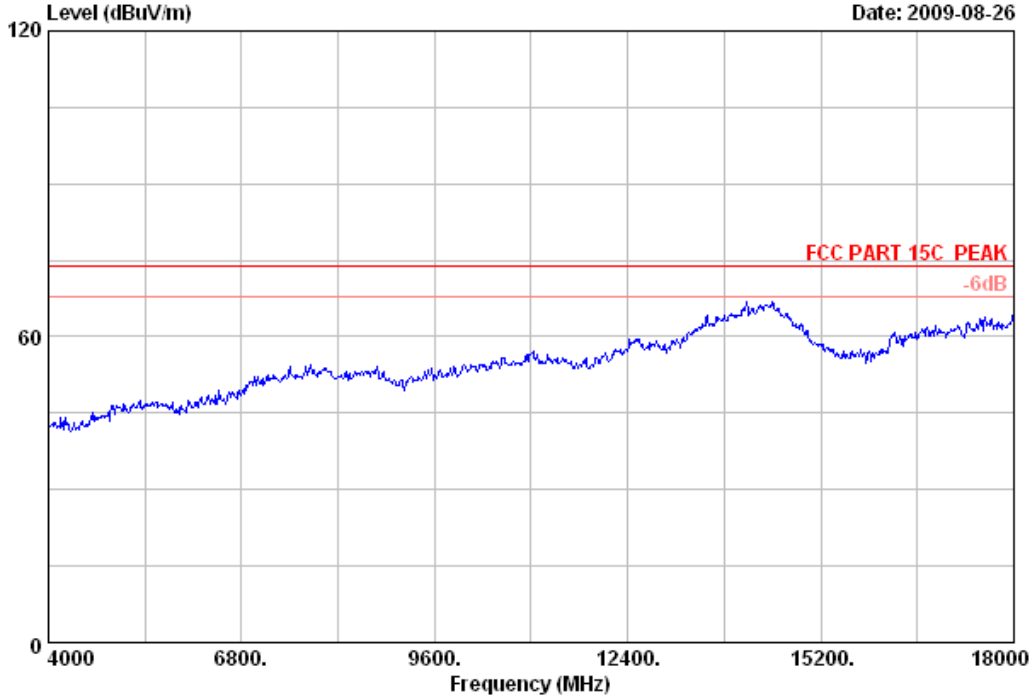
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 51 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

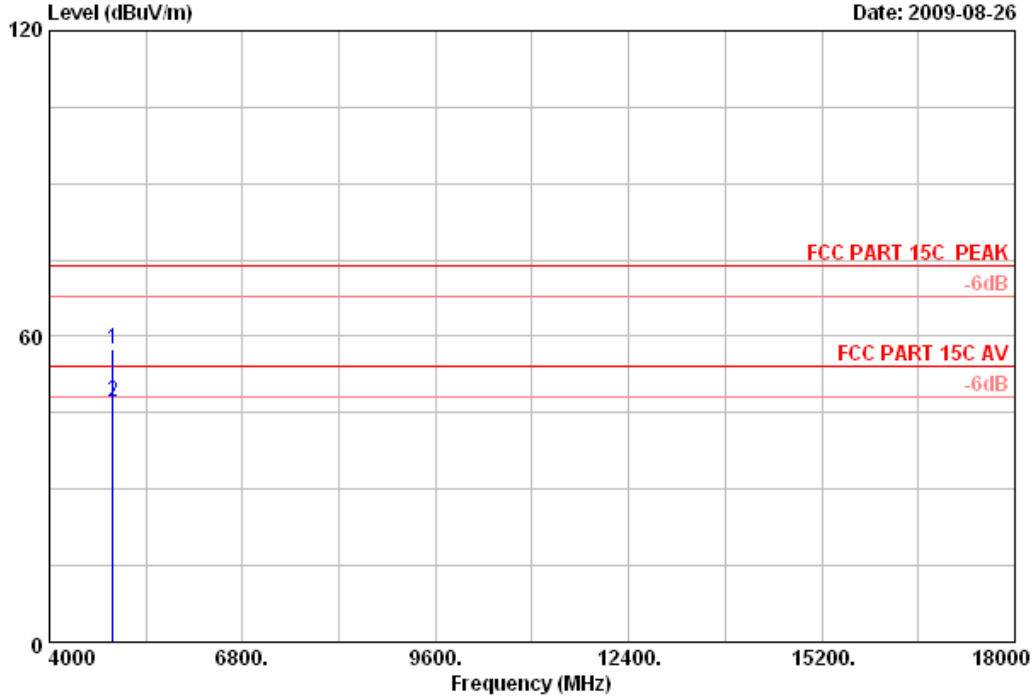


Site no.	: 3m Chamber	Data no.	: 51
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH11 2462MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 52 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 52
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	35.09	12.58	35.34	45.12	57.45	74.00	16.55	Peak
2	4924.000	35.09	12.58	35.34	34.95	47.28	54.00	6.72	Average

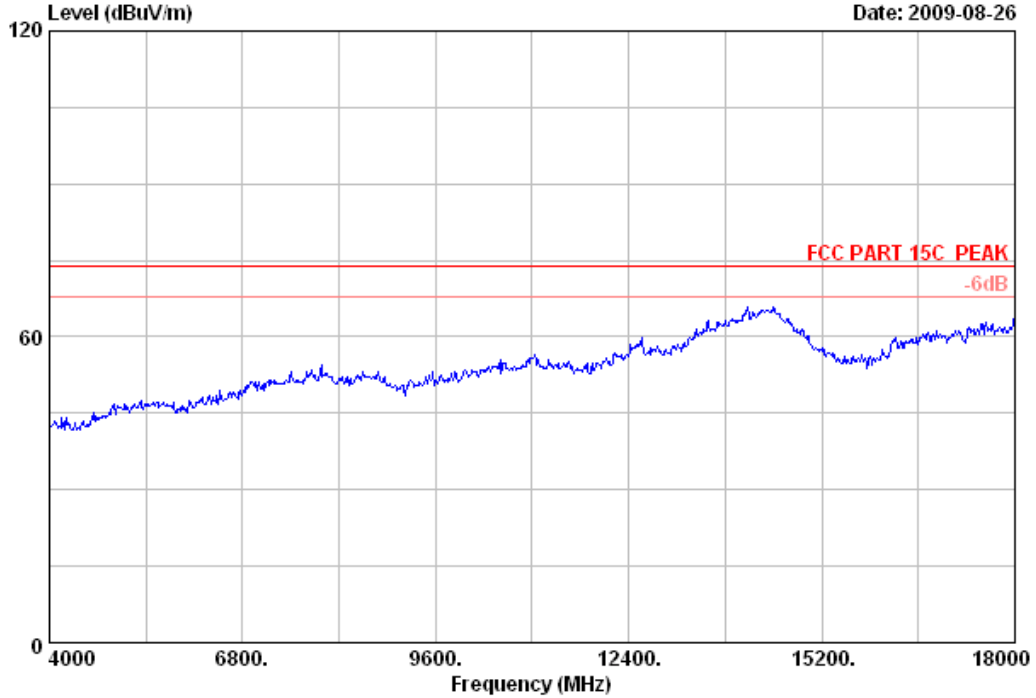
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 53 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

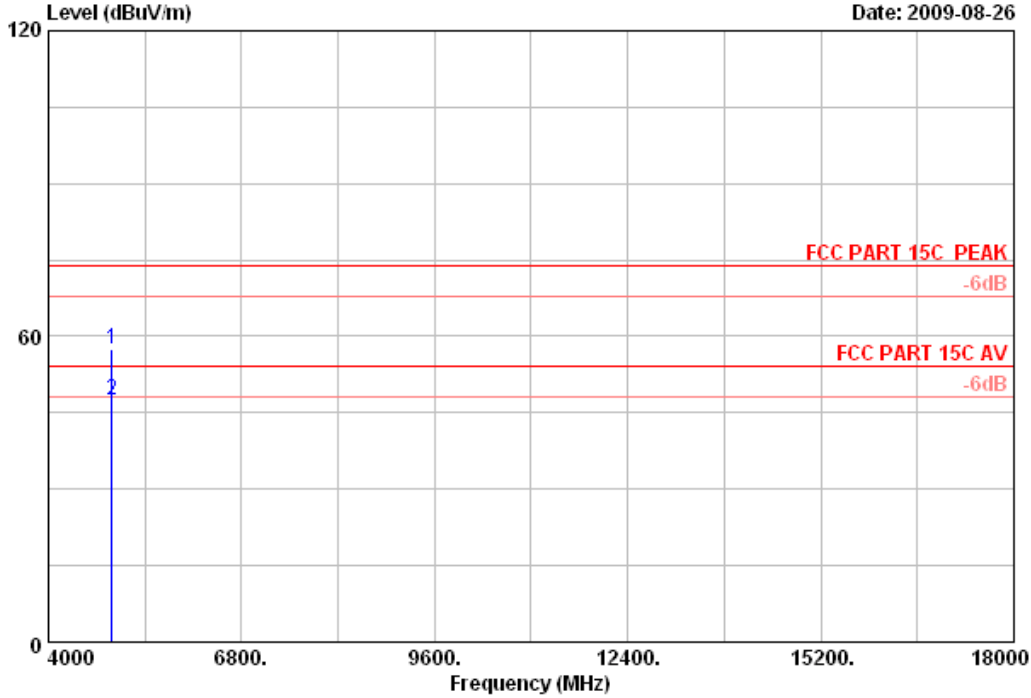


Site no.	: 3m Chamber	Data no.	: 53
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH11 2462MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 54 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 54
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	35.09	12.58	35.34	45.24	57.57	74.00	16.43	Peak
2	4924.000	35.09	12.58	35.34	35.09	47.42	54.00	6.58	Average

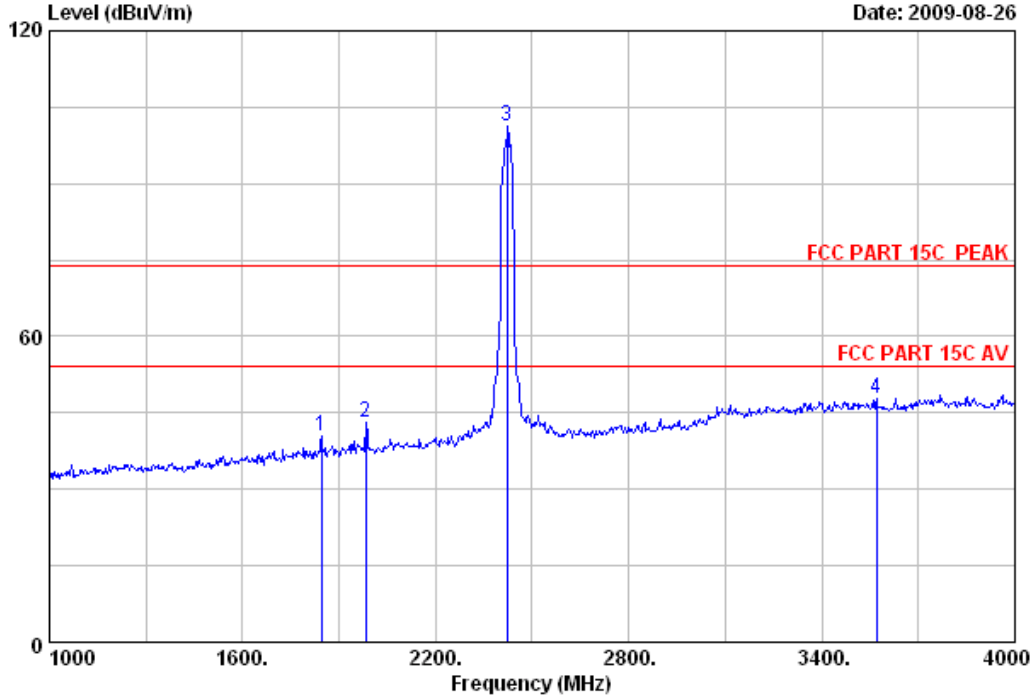
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 55 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 55
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	1846.000	27.30	7.52	36.23	41.96	40.55	74.00	33.45	Peak
2	1984.000	27.83	7.76	36.06	43.45	42.98	74.00	31.02	Peak
3	2422.000	28.50	8.60	36.01	100.24	101.33	74.00	-27.33	Peak
4	3571.000	31.70	10.68	35.59	41.12	47.91	74.00	26.09	Peak

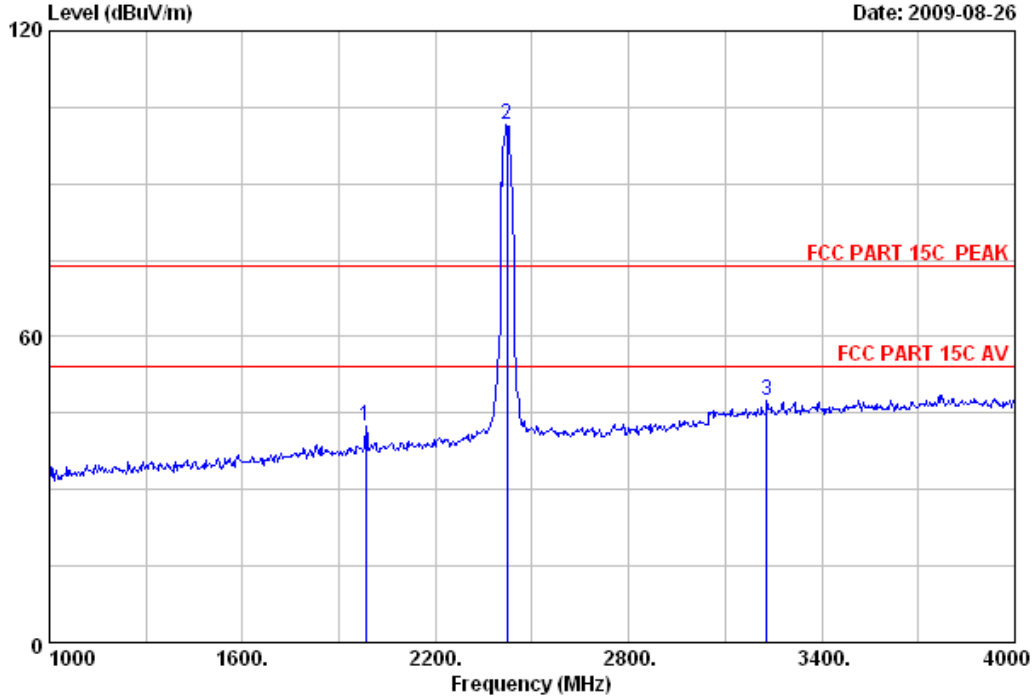
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 56 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 56
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	27.83	7.76	36.06	42.87	42.40	74.00	31.60	Peak
2	2422.000	28.50	8.60	36.01	100.59	101.68	74.00	-27.68	Peak
3	3229.000	30.83	10.04	35.77	42.43	47.53	74.00	26.47	Peak

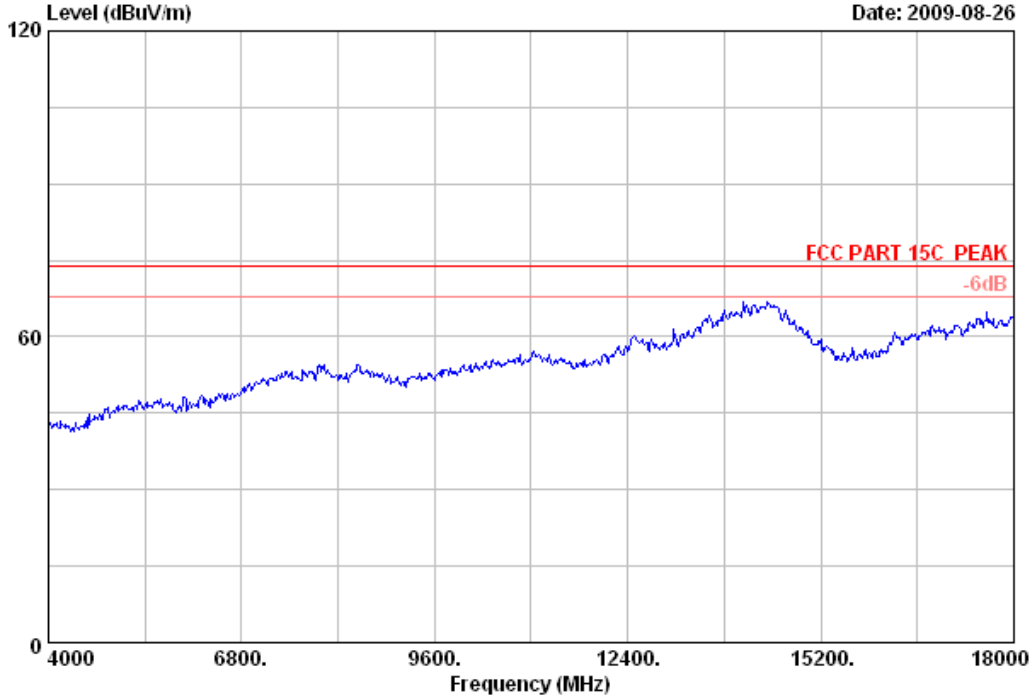
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 57 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

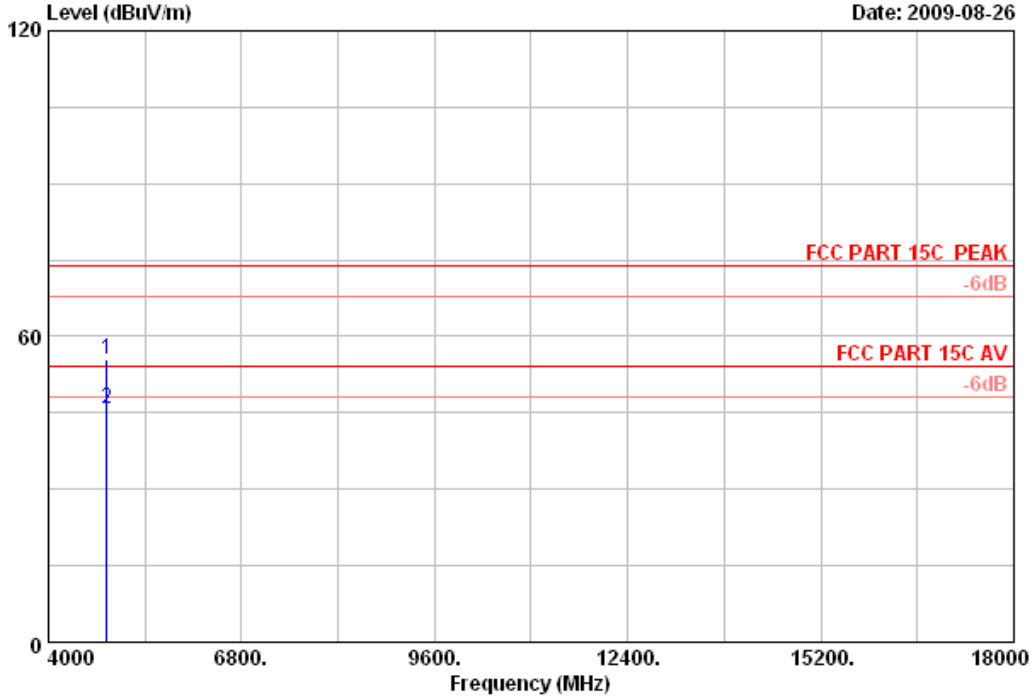


Site no.	: 3m Chamber	Data no.	: 57
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH1 2422MHz		



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 58 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 58
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	34.57	12.45	35.25	43.69	55.46	74.00	18.54	Peak
2	4844.000	34.57	12.45	35.25	33.87	45.64	54.00	8.36	Average

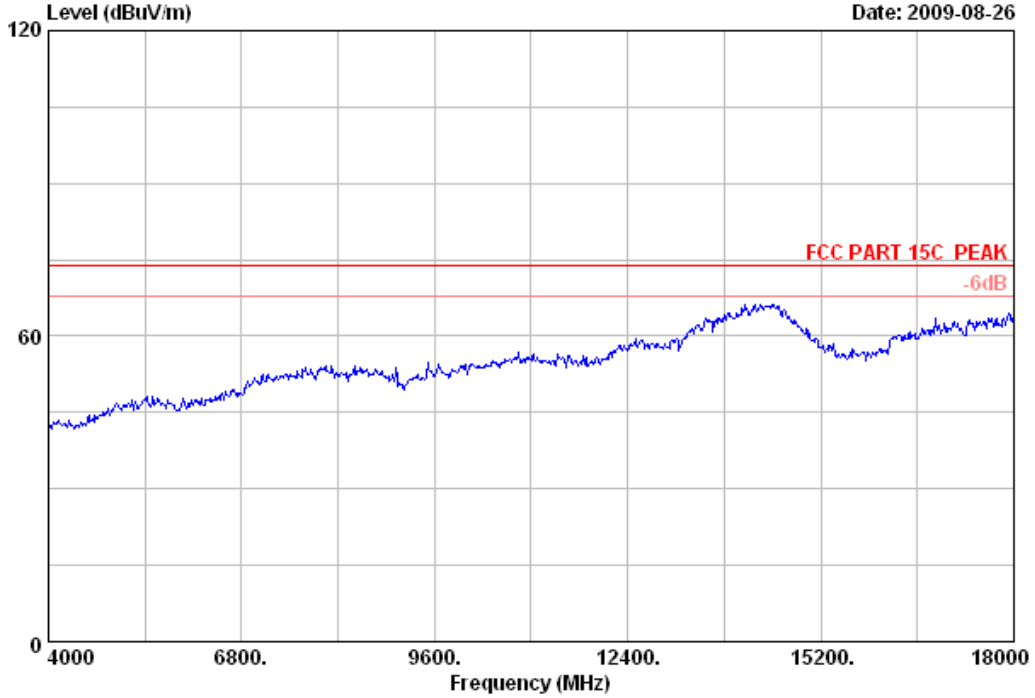
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 59 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

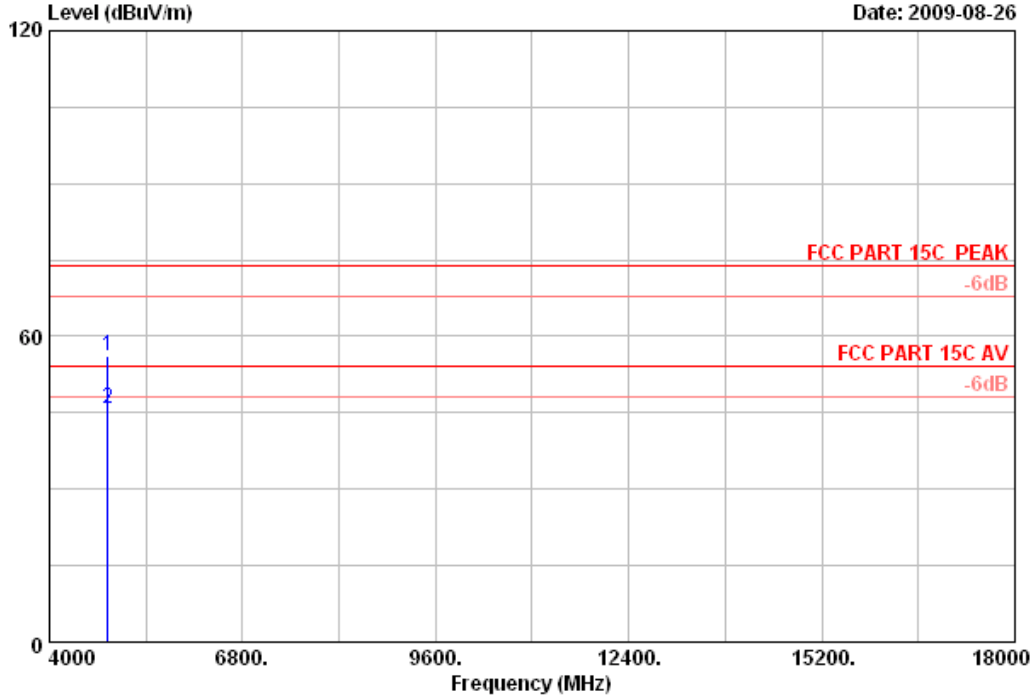


Site no.	: 3m Chamber	Data no.	: 59
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH1 2422MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 60 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 60
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	34.57	12.45	35.25	44.28	56.05	74.00	17.95	Peak
2	4844.000	34.57	12.45	35.25	33.98	45.75	54.00	8.25	Average

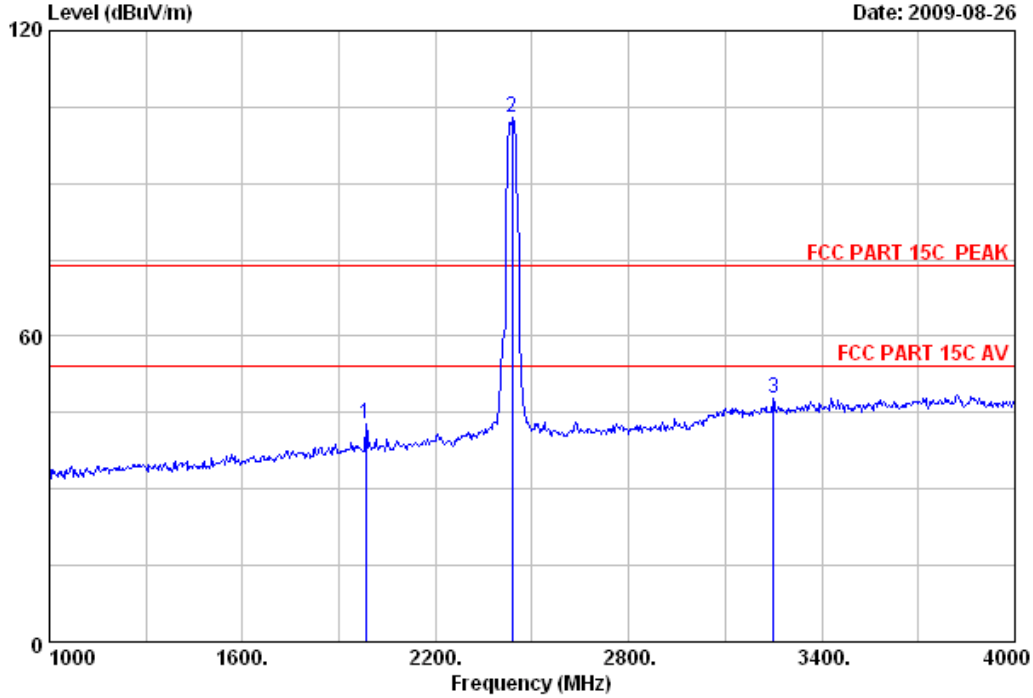
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 61 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 61
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH4 2437MHz

	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	27.83	7.76	36.06	43.23	42.76	74.00	31.24	Peak
2	2437.000	28.53	8.60	36.06	101.97	103.04	74.00	-29.04	Peak
3	3250.000	30.88	10.19	35.68	42.47	47.86	74.00	26.14	Peak

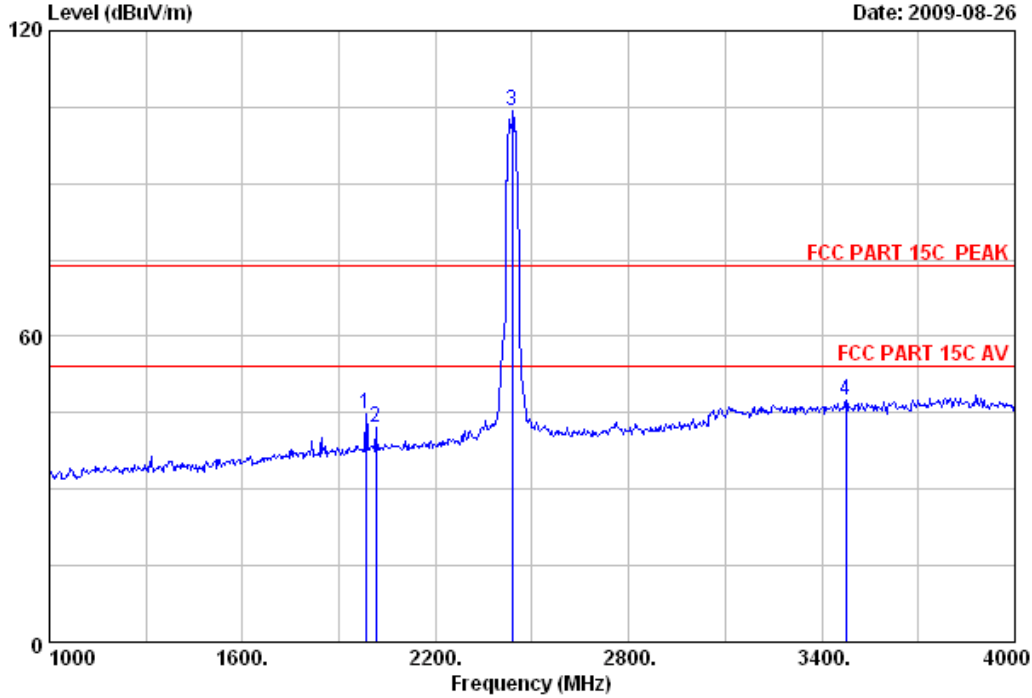
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 62 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 62
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH4 2437MHz

	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	27.83	7.76	36.06	45.37	44.90	74.00	29.10	Peak
2	2014.000	27.92	7.92	36.12	42.56	42.28	74.00	31.72	Peak
3	2437.000	28.53	8.60	36.06	103.16	104.23	74.00	-30.23	Peak
4	3475.000	31.55	10.47	35.64	40.97	47.35	74.00	26.65	Peak

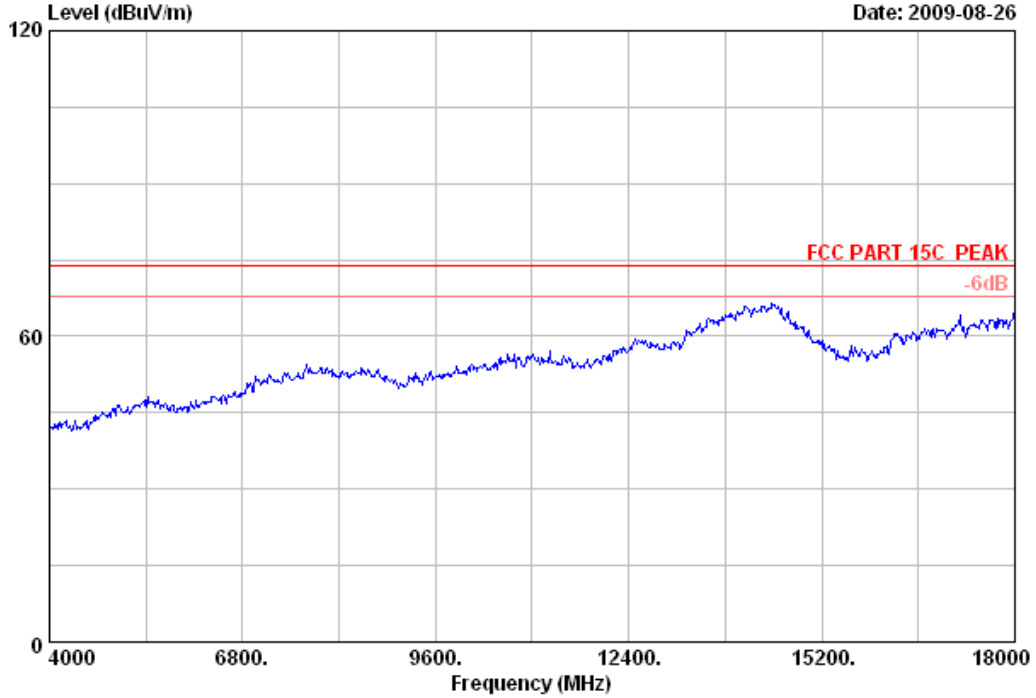
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 63 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

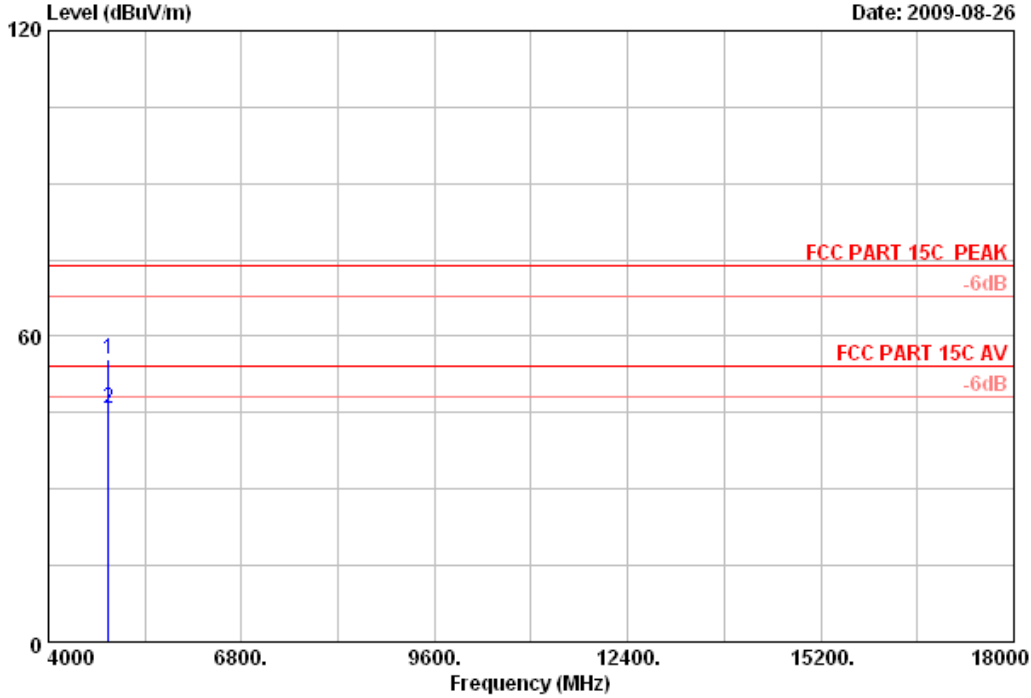


Site no.	: 3m Chamber	Data no.	: 63
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH4 2437MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 64 File: E:\2009 report data\T\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 64
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH4 2437MHz

	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	34.78	12.23	35.36	43.97	55.62	74.00	18.38	Peak
2	4874.000	34.78	12.23	35.36	34.26	45.91	54.00	8.09	Average

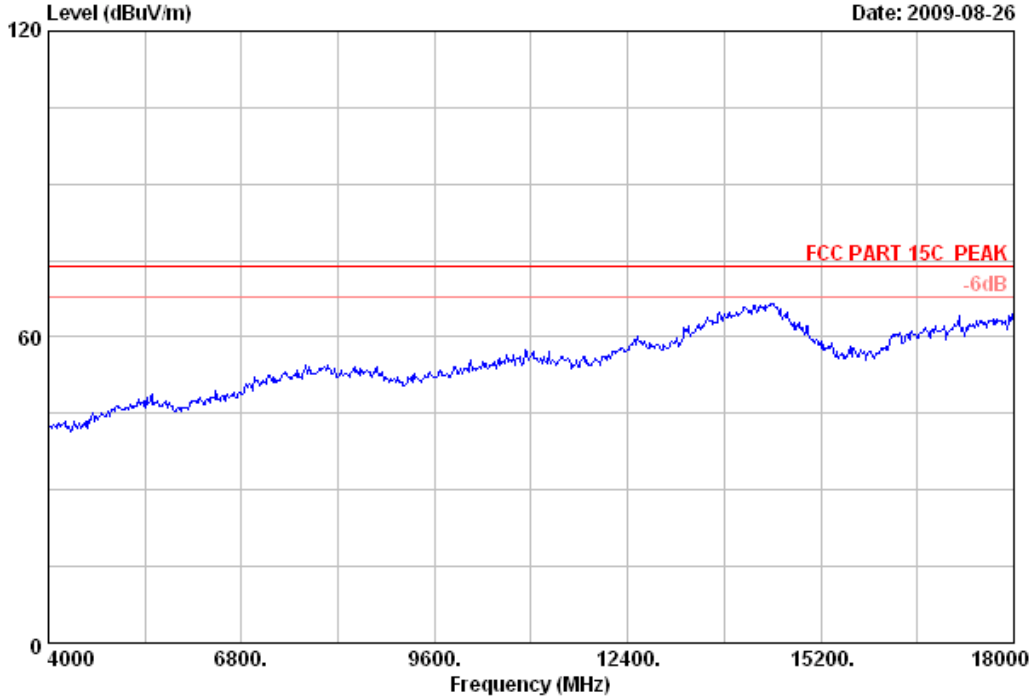
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 65 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

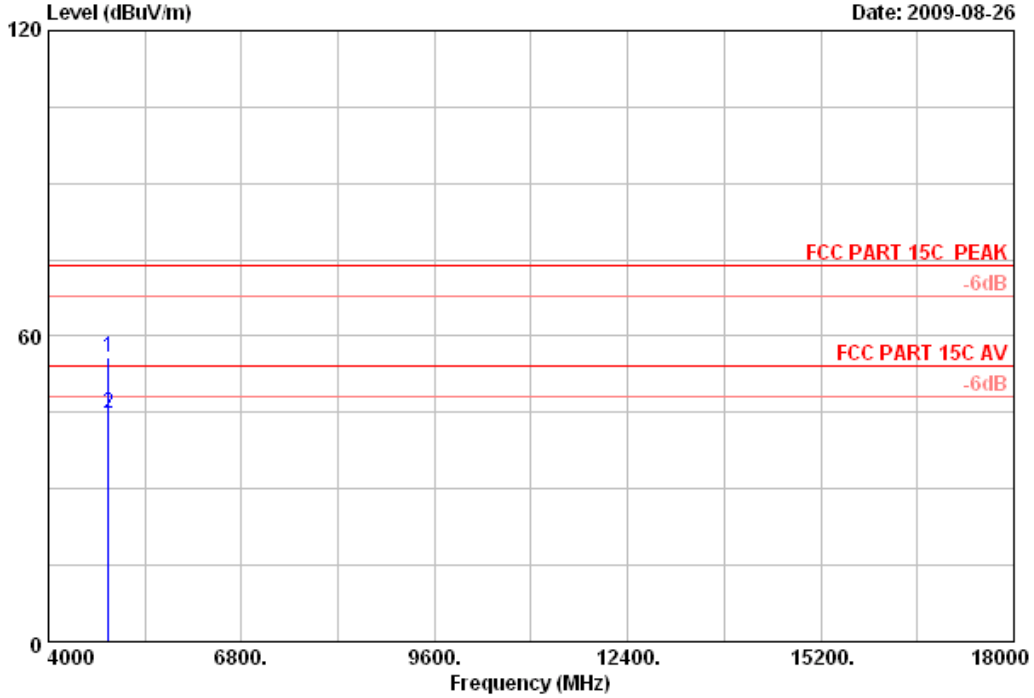


Site no.	: 3m Chamber	Data no.	: 65
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH4 2437MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 66 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 66
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH4 2437MHz

	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	34.78	12.23	35.36	44.27	55.92	74.00	18.08	Peak
2	4874.000	34.78	12.23	35.36	33.26	44.91	54.00	9.09	Average

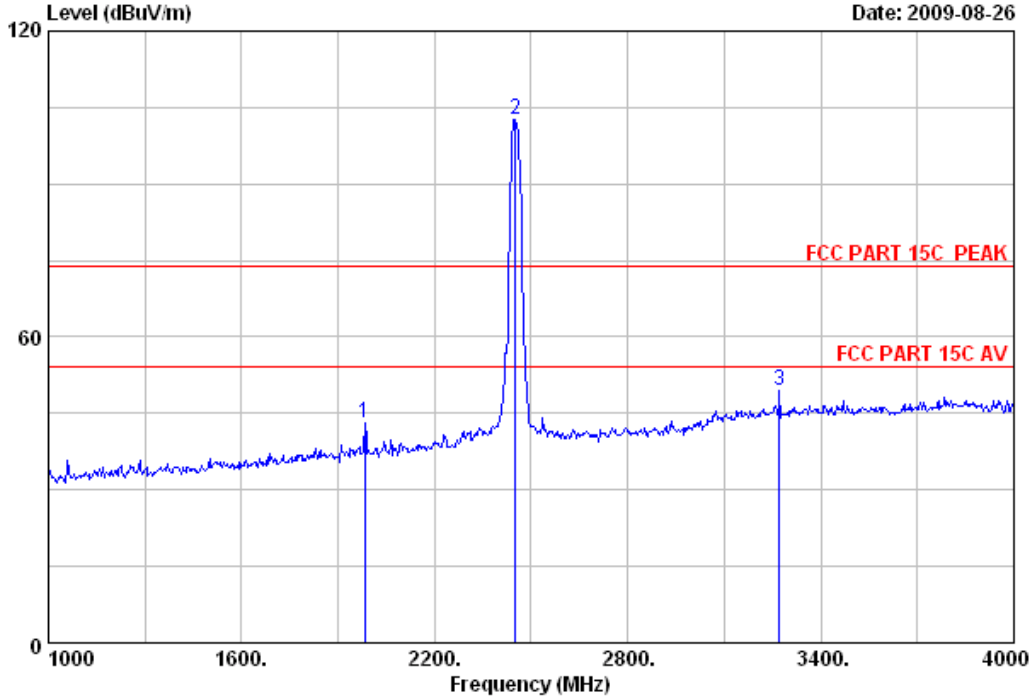
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 67 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)



Site no. : 3m Chamber Data no. : 67
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

	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	27.83	7.76	36.06	43.67	43.20	74.00	30.80	Peak
2	2452.000	28.53	8.48	36.06	101.82	102.77	74.00	-28.77	Peak
3	3271.000	30.97	10.26	35.79	44.04	49.48	74.00	24.52	Peak

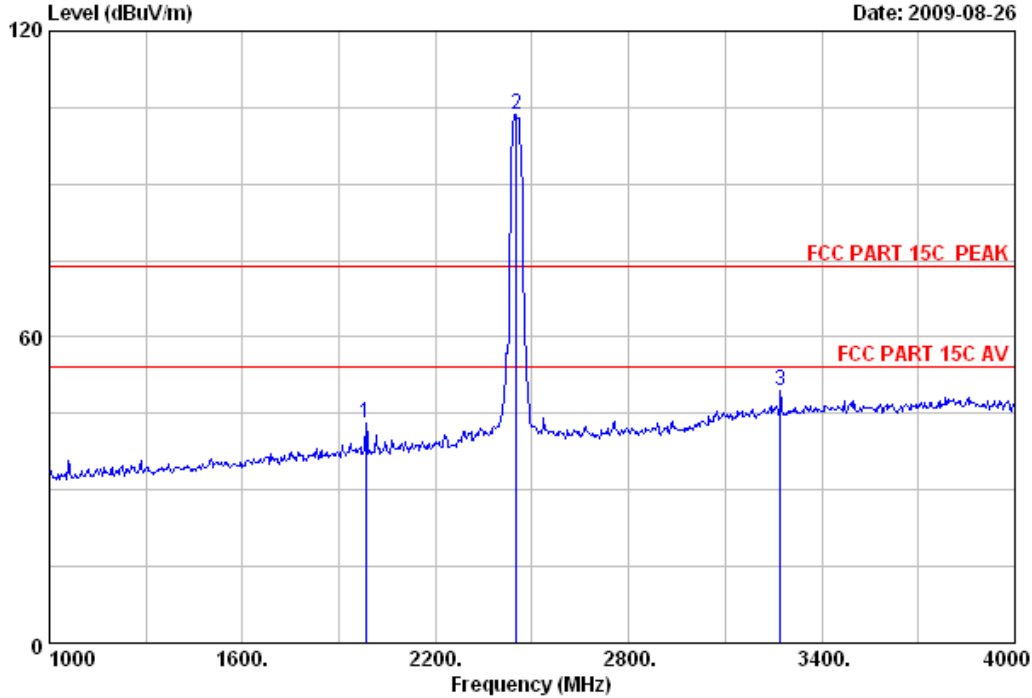
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 68 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)



Site no. : 3m Chamber Data no. : 68
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

	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	27.83	7.76	36.06	43.67	43.20	74.00	30.80	Peak
2	2452.000	28.53	8.48	36.06	102.82	103.77	74.00	-29.77	Peak
3	3271.000	30.97	10.26	35.79	44.04	49.48	74.00	24.52	Peak

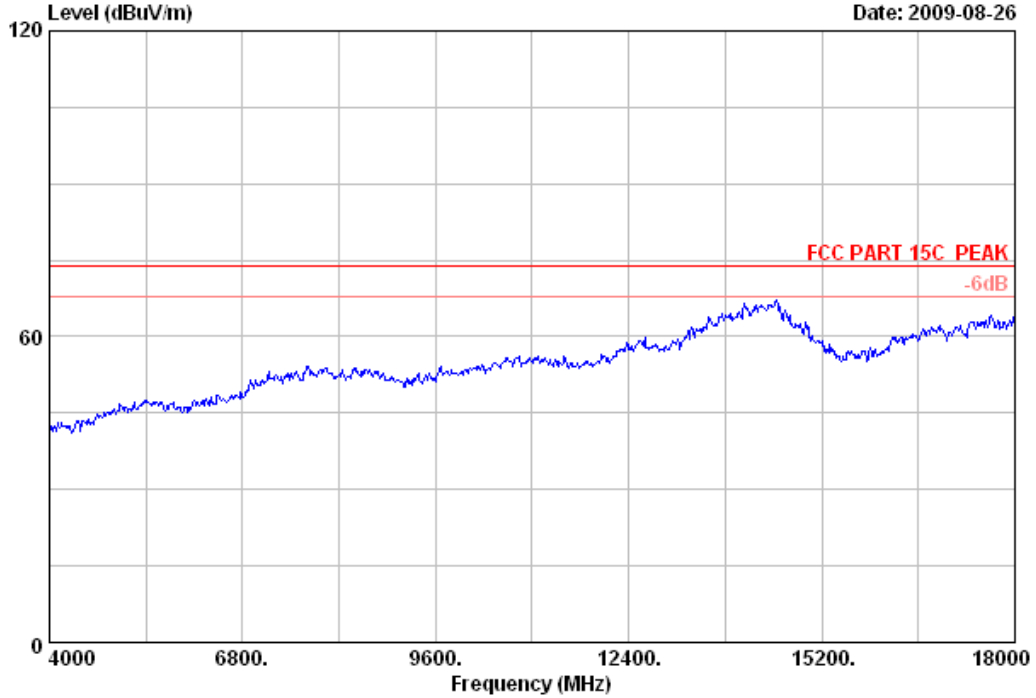
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 69 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (72)

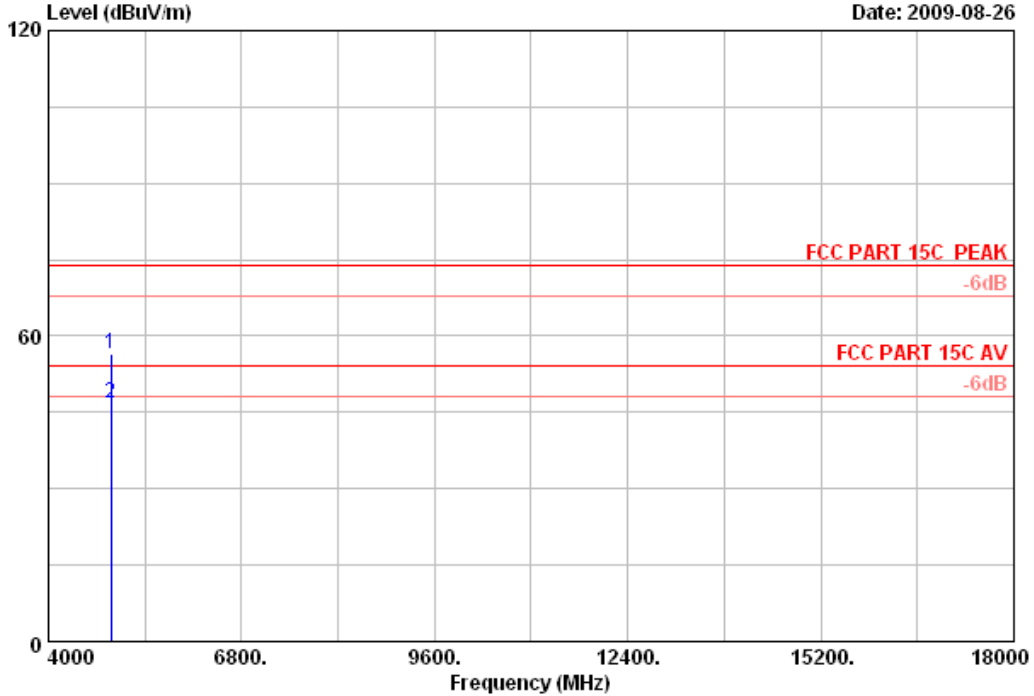


Site no.	: 3m Chamber	Data no.	: 69
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH7 2452MHz		



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 70 File: E:\2009 report data\T\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 70
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

	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	34.98	12.43	35.27	44.26	56.40	74.00	17.60	Peak
2	4904.000	34.98	12.43	35.27	34.59	46.73	54.00	7.27	Average

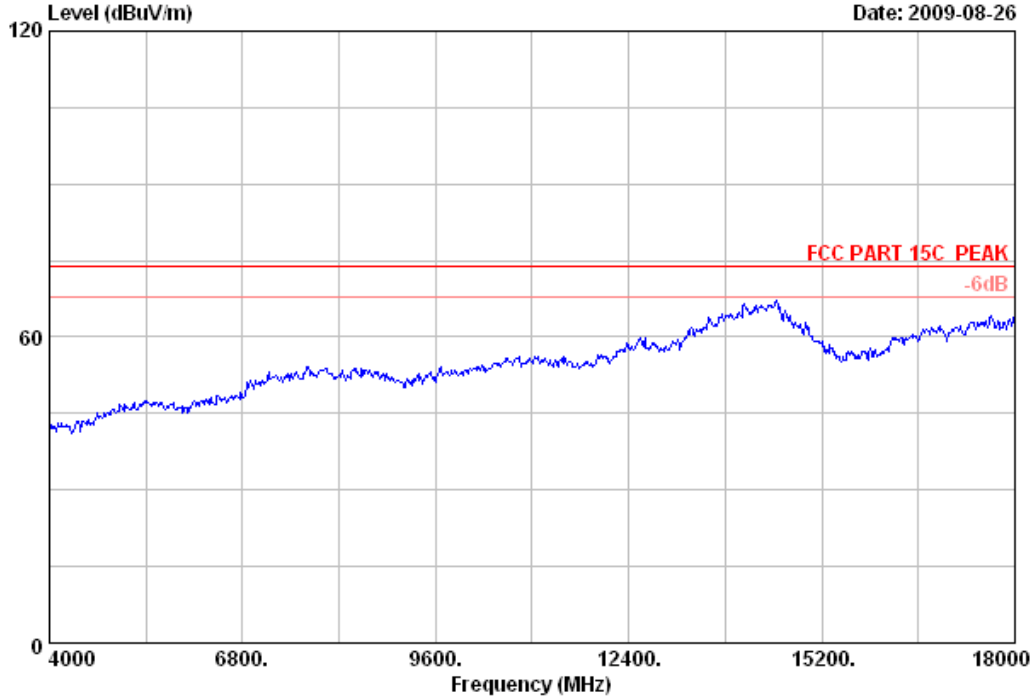
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 71 File: E:\2009 report data\TP-LINK\ACS90832.EM6 (72)

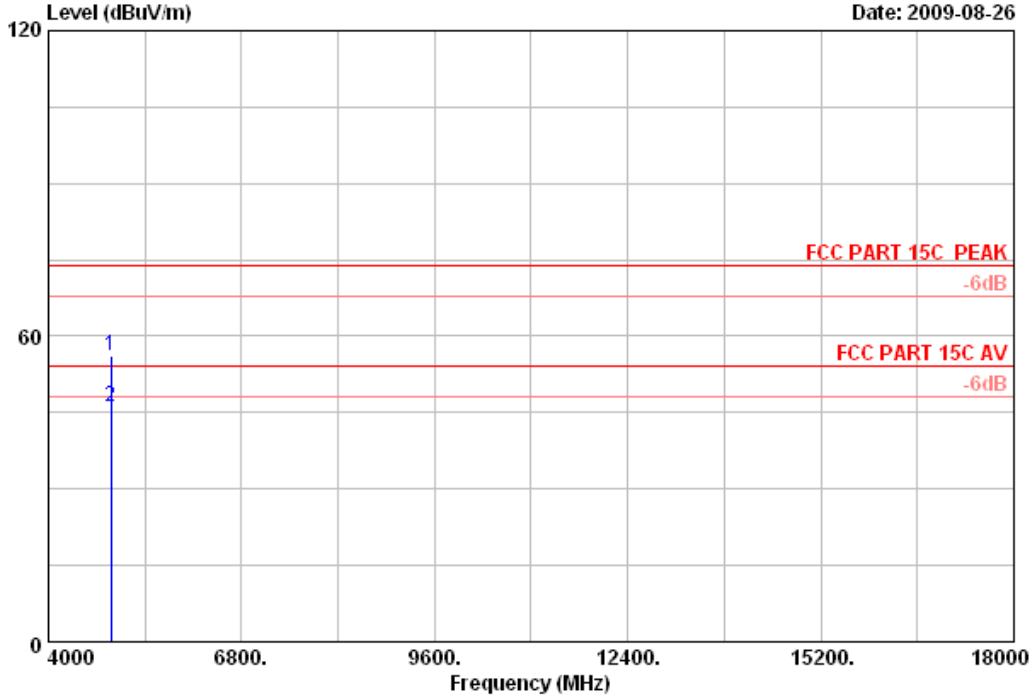


Site no.	: 3m Chamber	Data no.	: 71
Dis. / Ant.	: 3m 3115(0905)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: Wireless N USB Adapter	M/N:	TL-WN821N
Power	: DC 5V From PC input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH7 2452MHz		



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 72 File: E:\2009 report data\T\TP-LINK\ACS9Q832.EM6 (72)



Site no. : 3m Chamber Data no. : 72
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

	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	34.98	12.43	35.27	43.99	56.13	74.00	17.87	Peak
2	4904.000	34.98	12.43	35.27	33.88	46.02	54.00	7.98	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

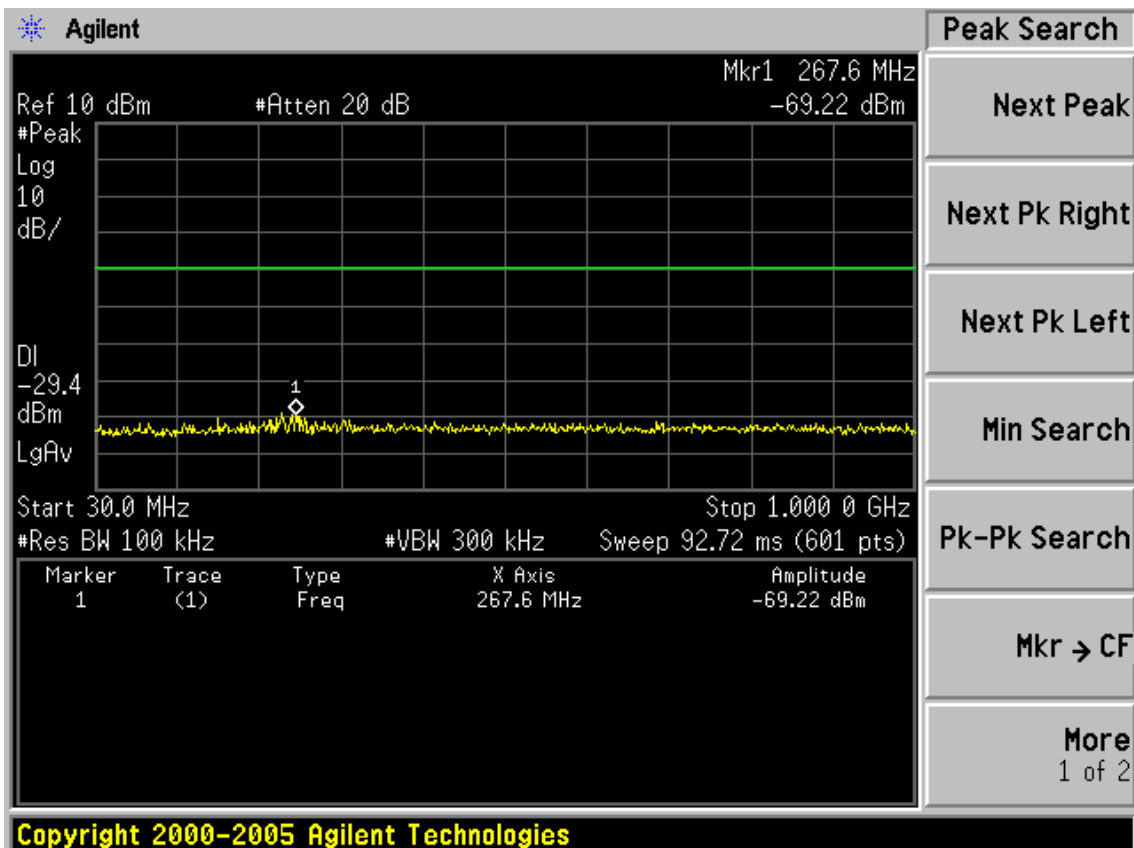
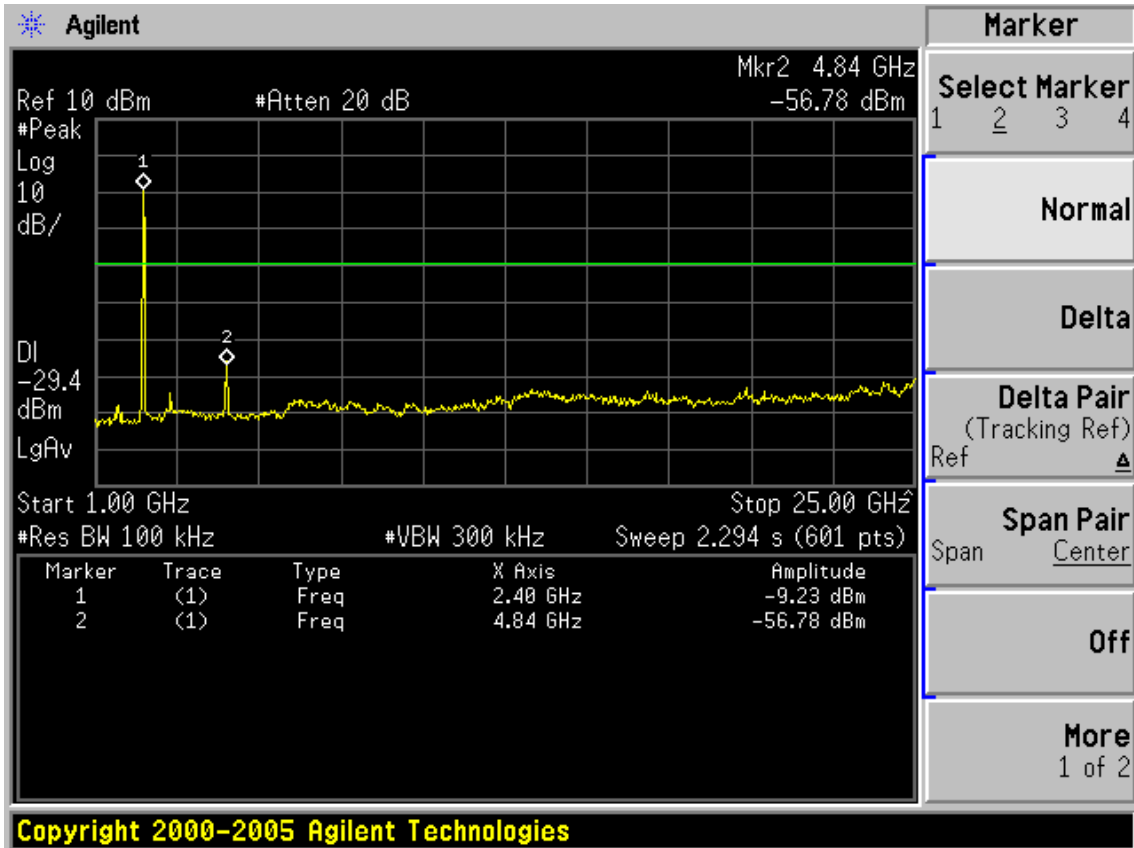
PASS (The testing data was attached in the next pages.)

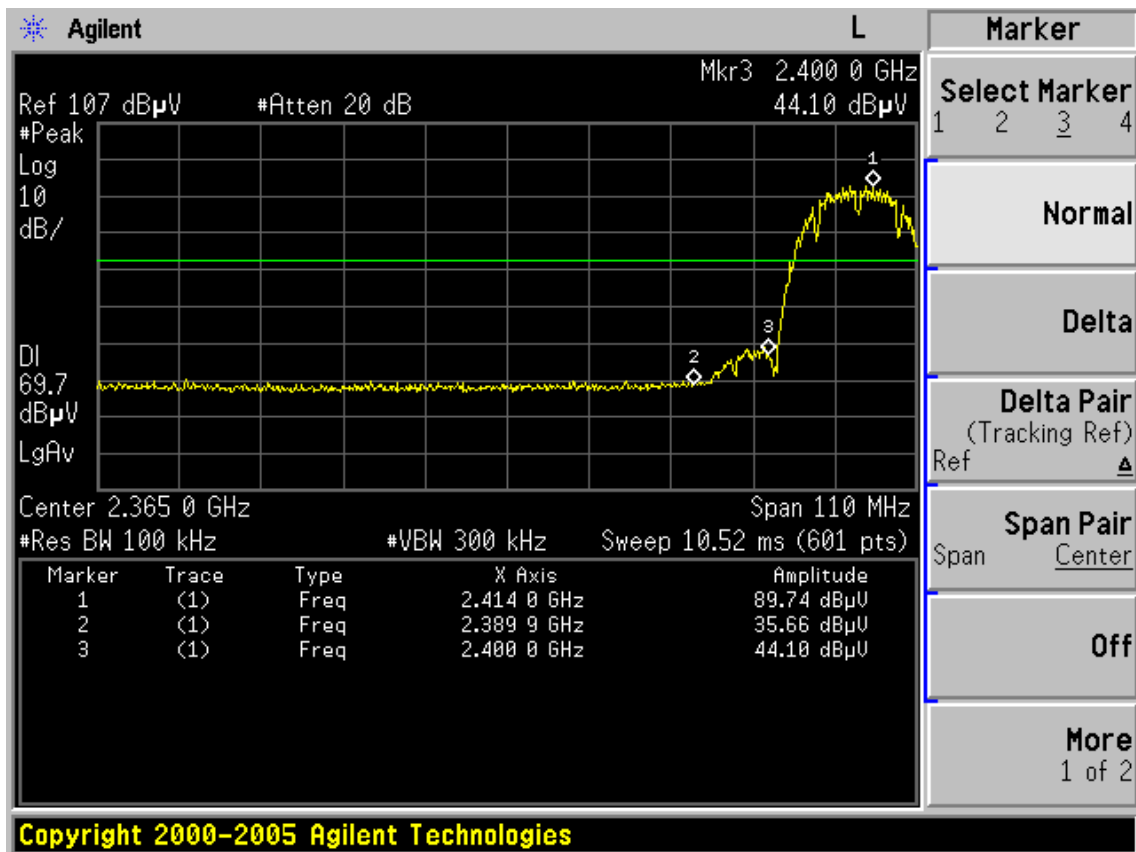
Conducted emission test data:

Chain 1:

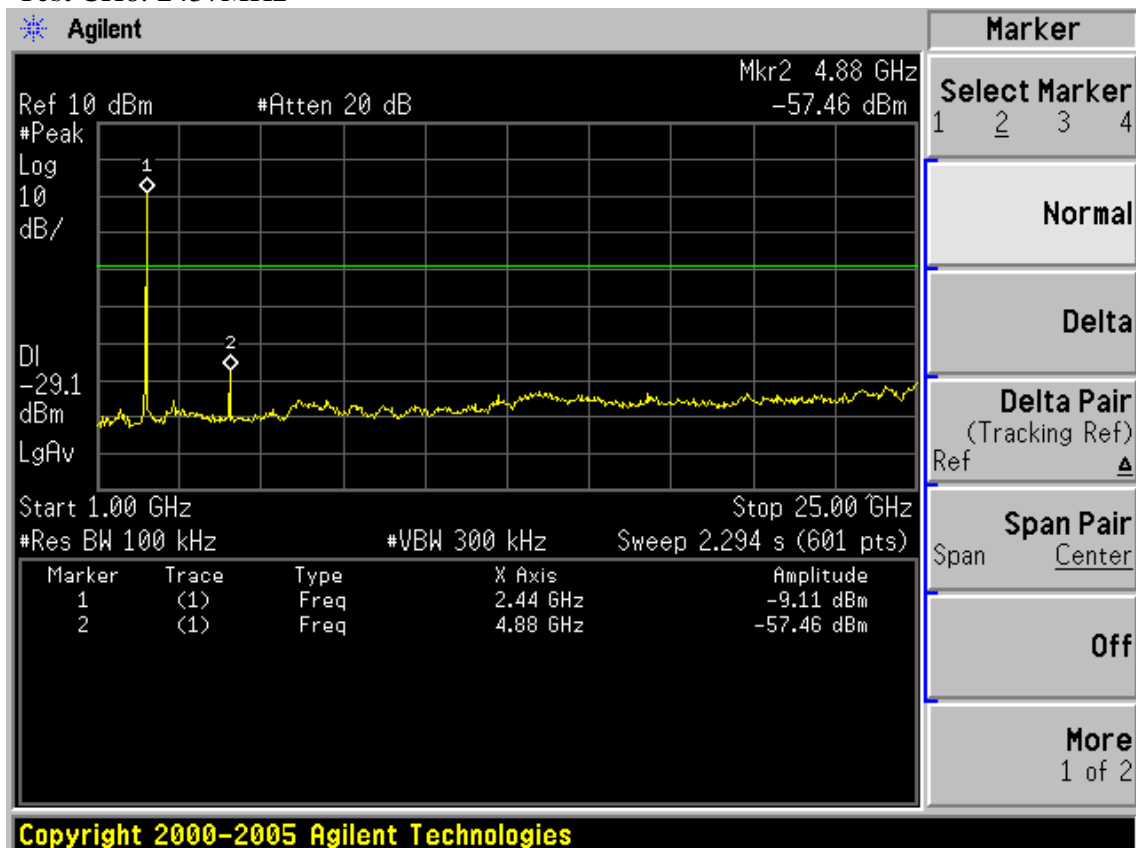
Test Mode: IEEE 802.11b TX

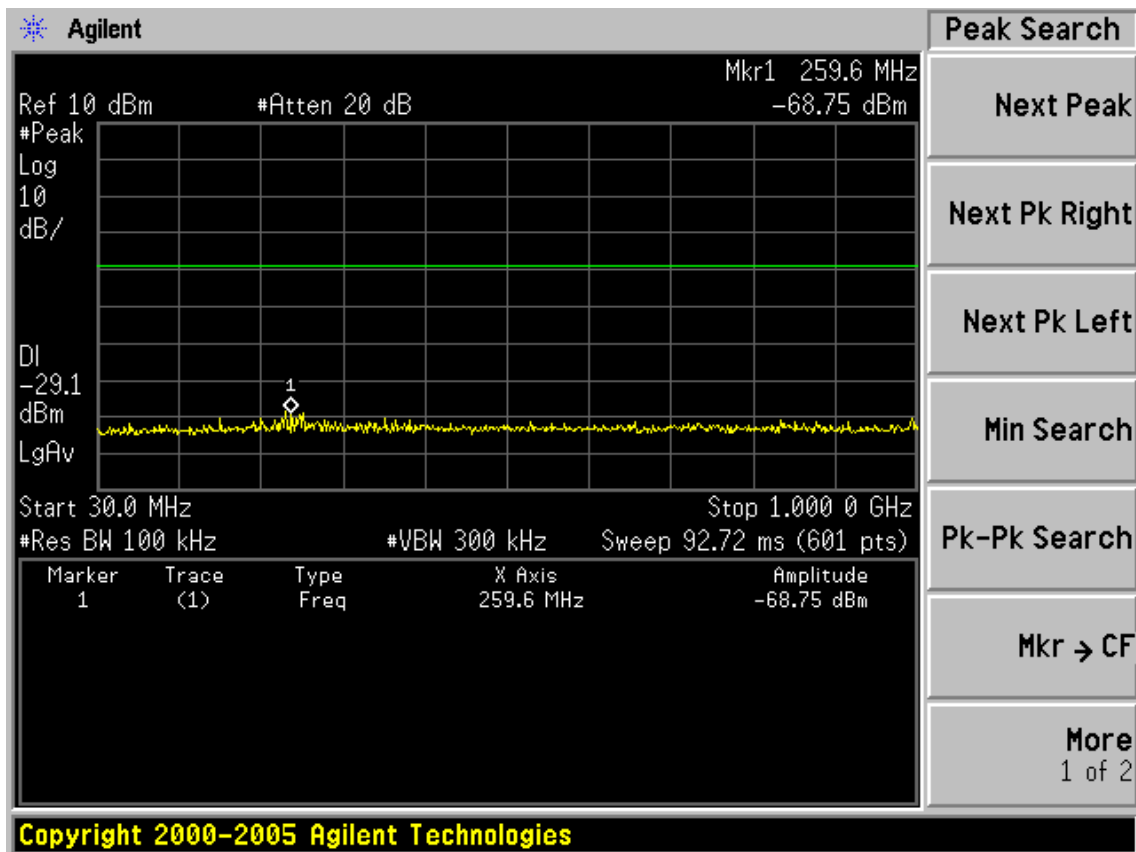
Test CH1: 2412MHz



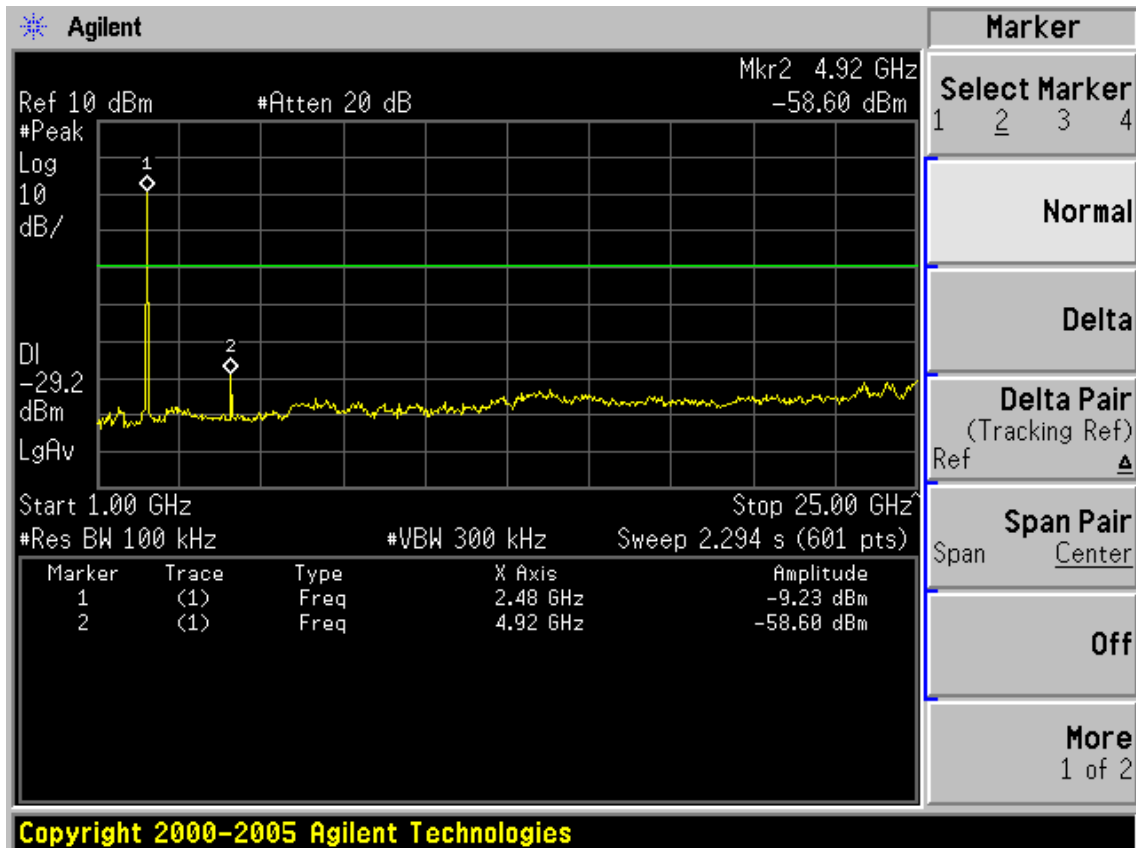


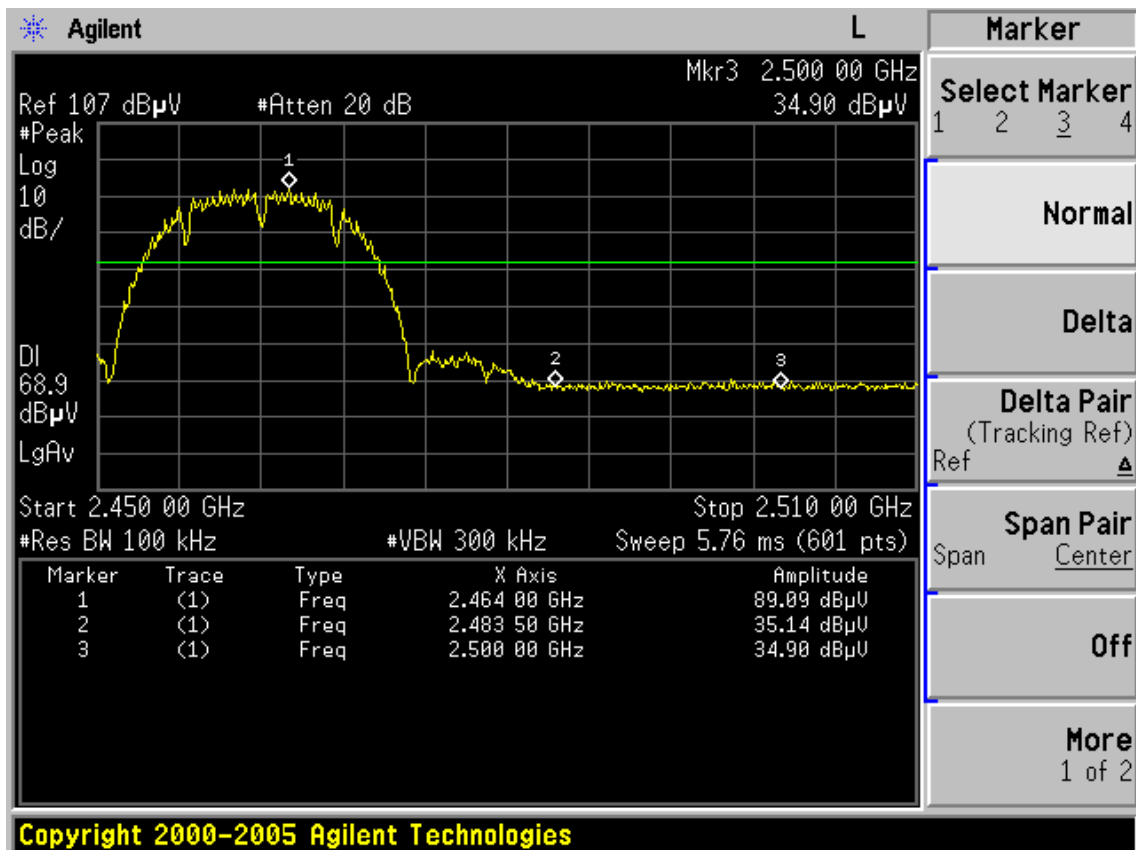
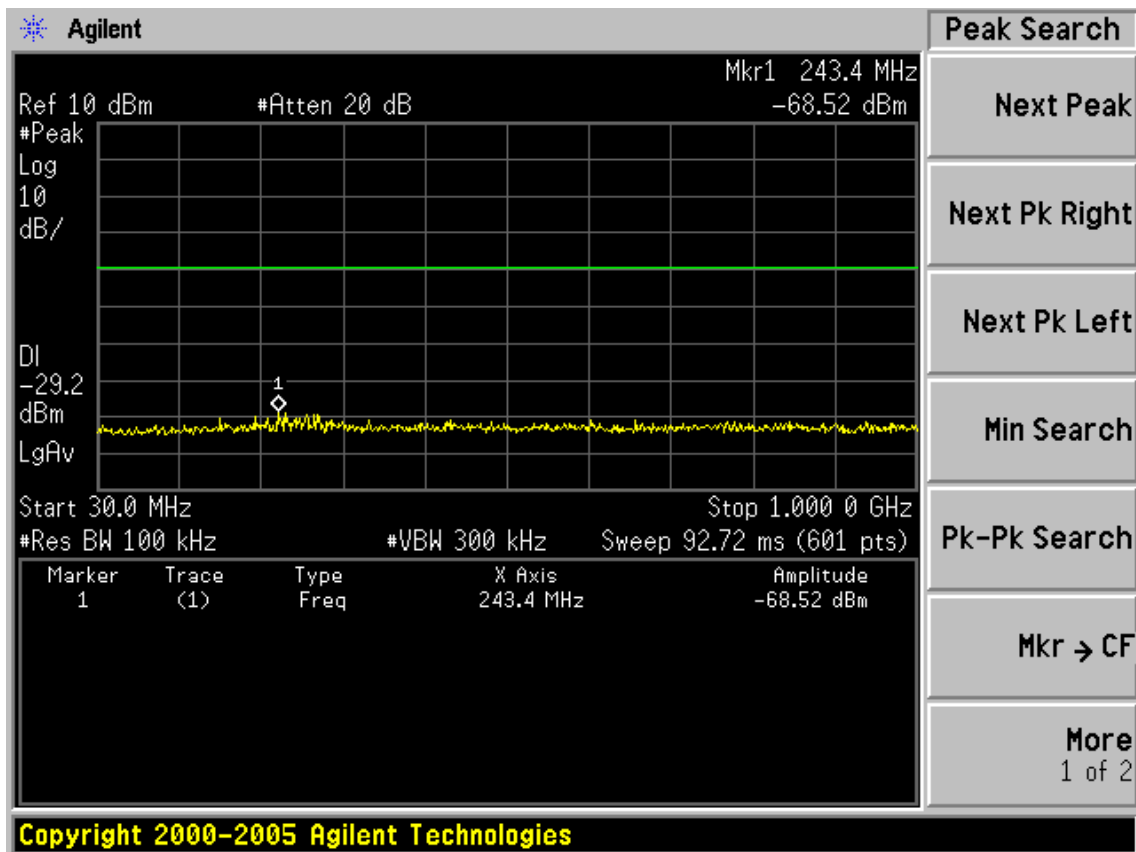
Test CH6: 2437MHz





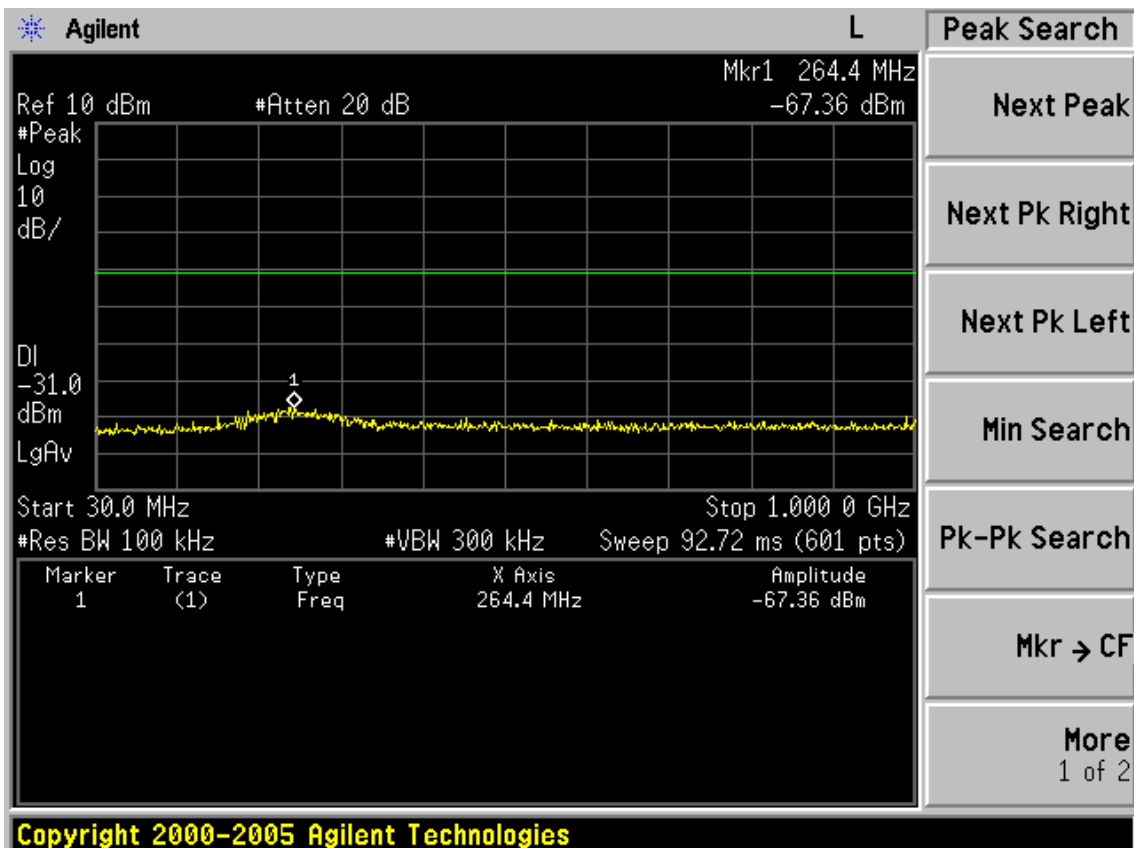
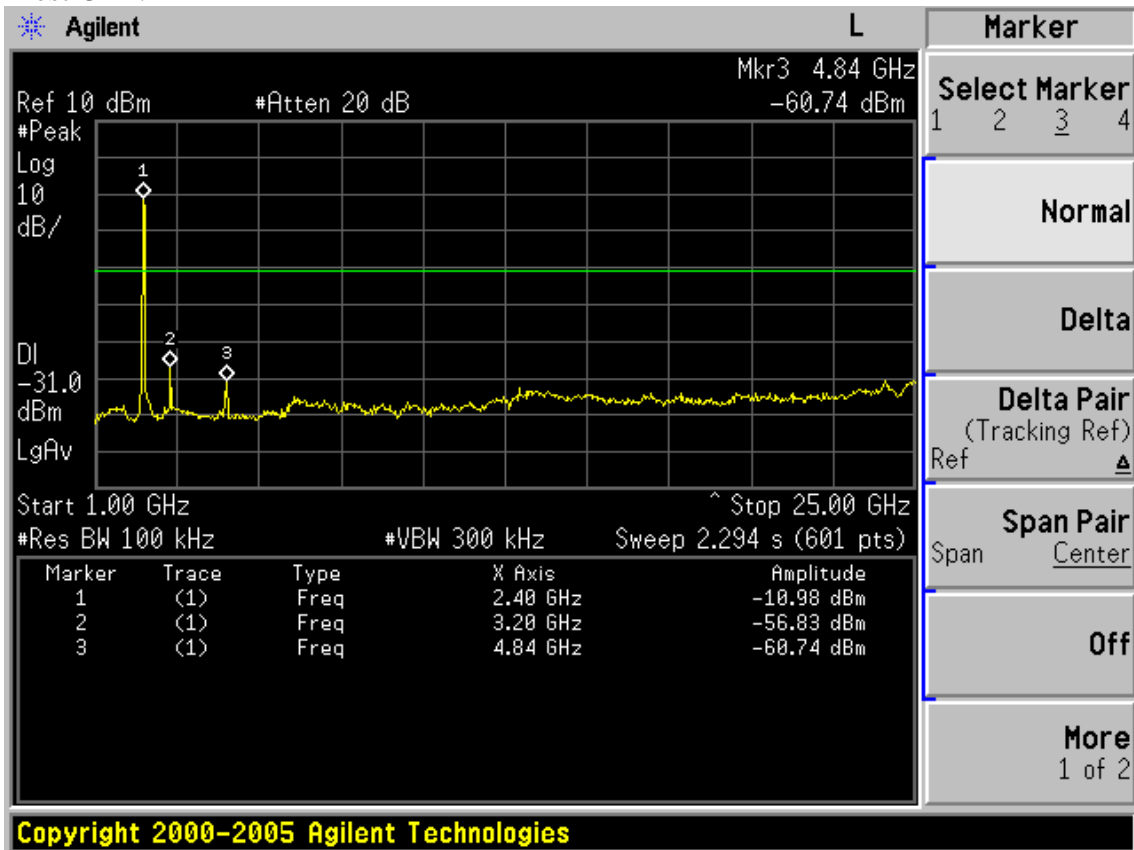
Test CH11: 2462MHz

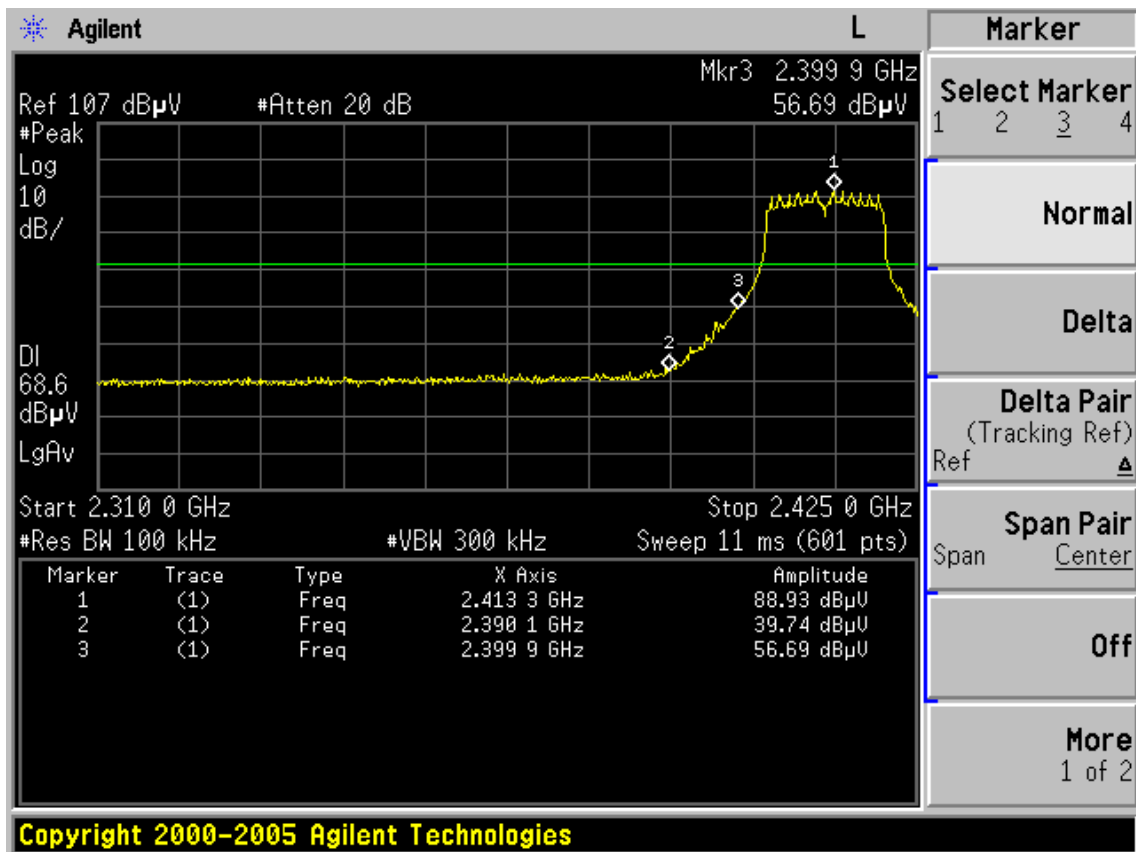




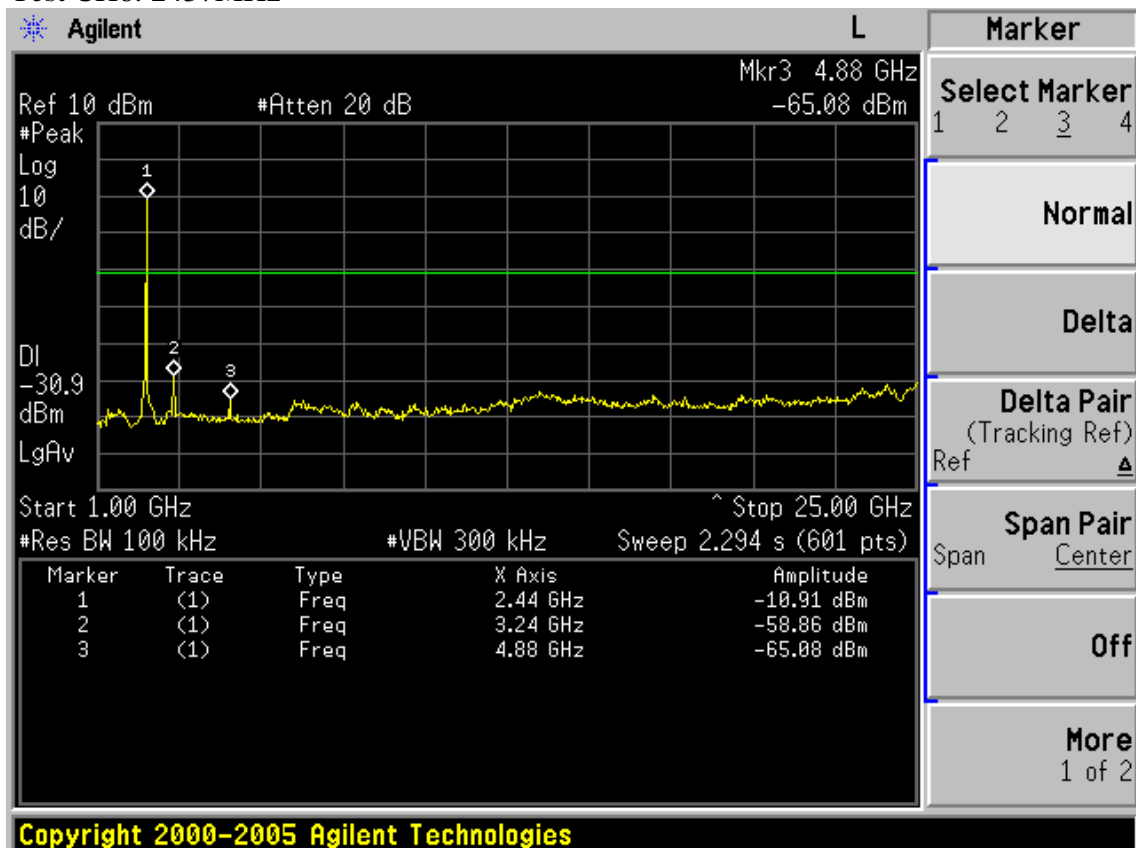
Test Mode: IEEE 802.11g TX

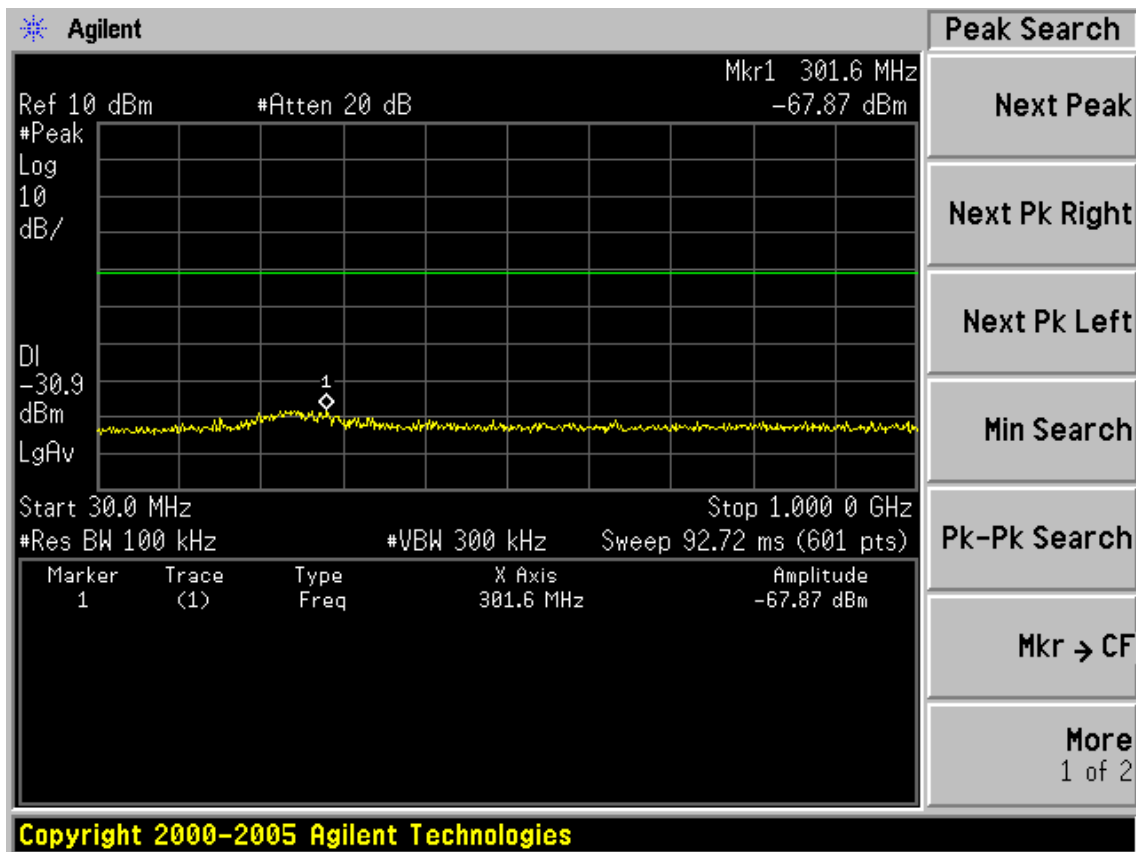
Test CH1: 2412MHz



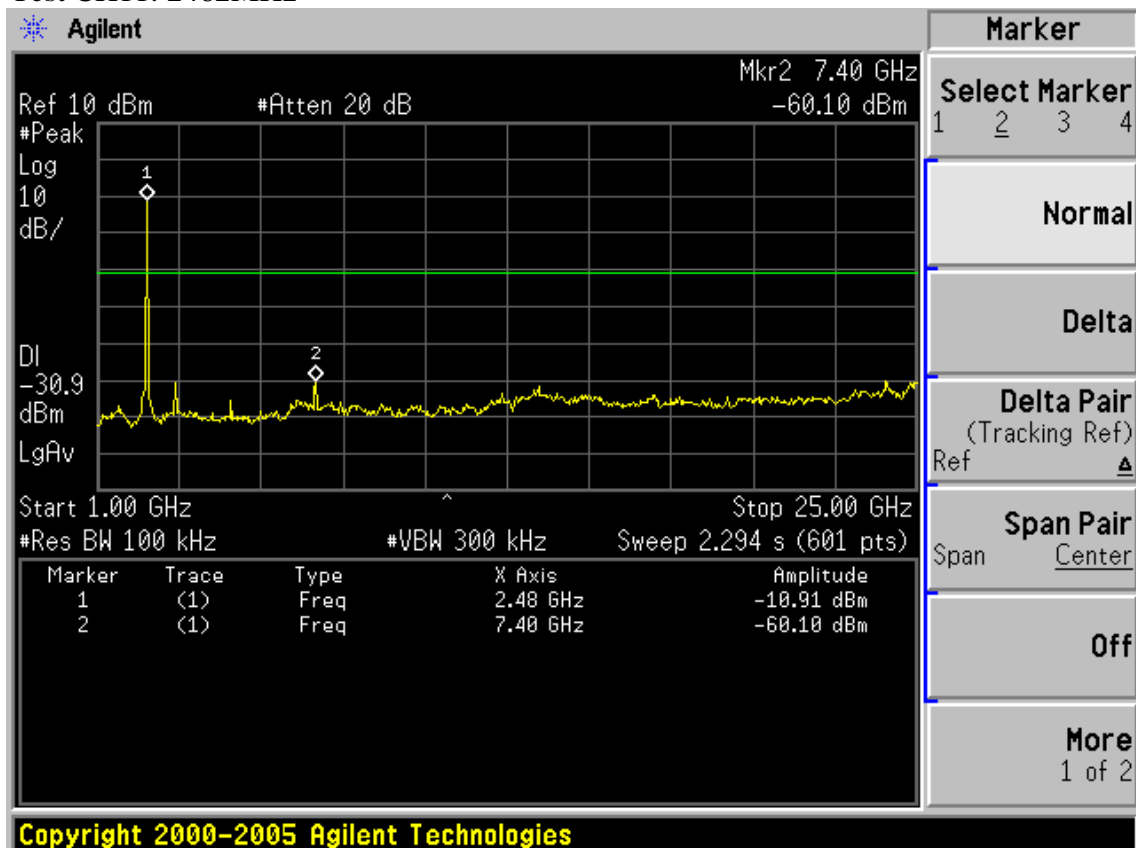


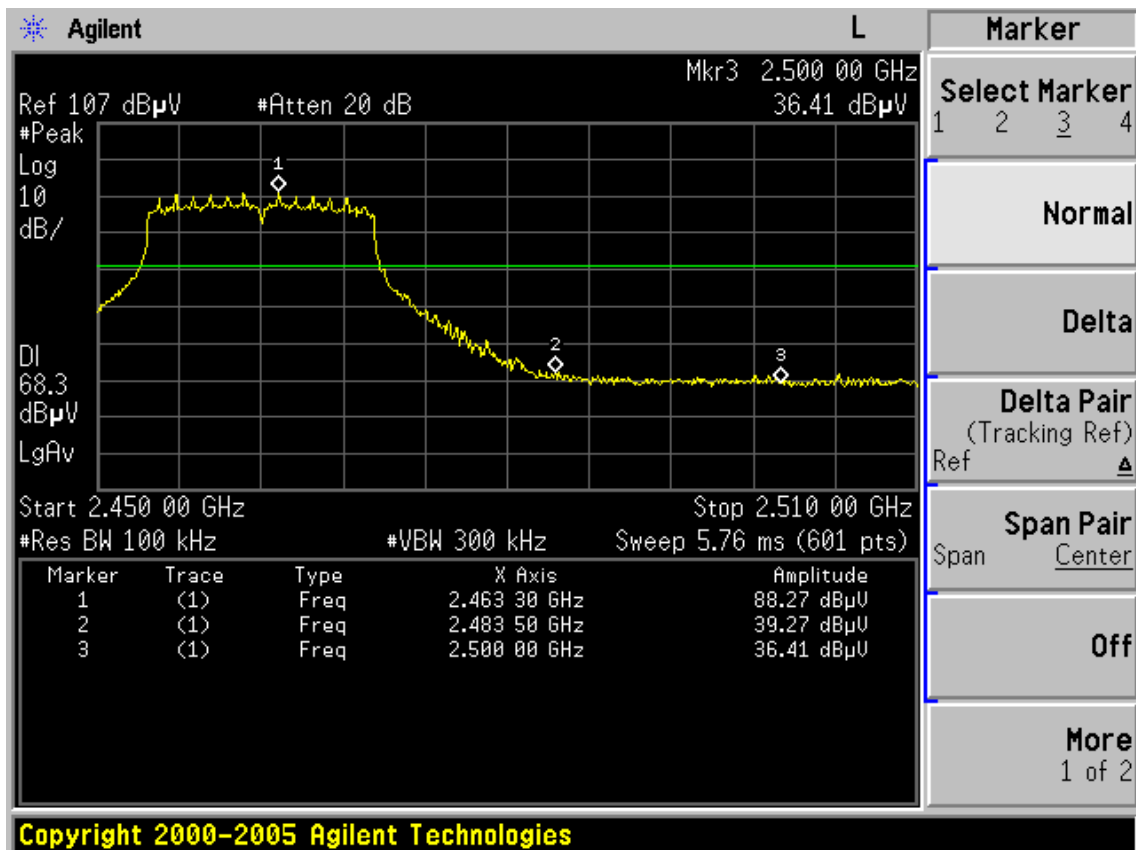
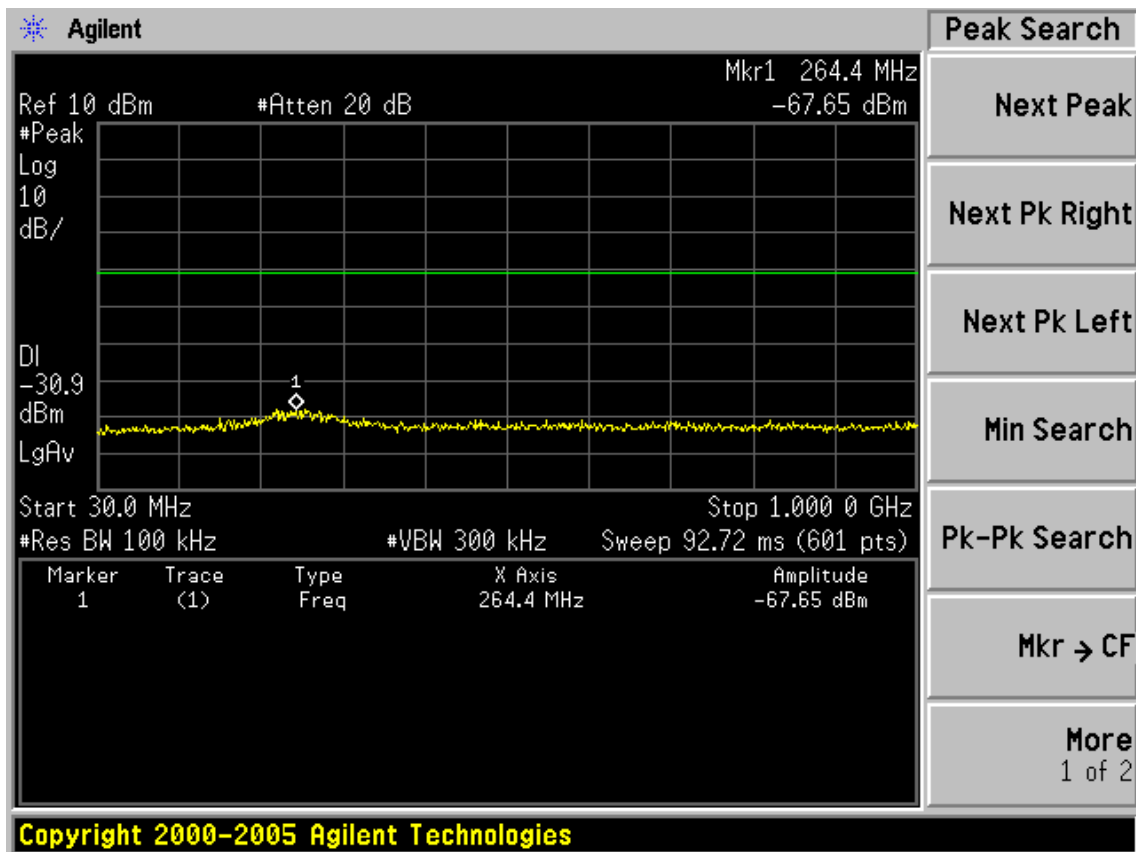
Test CH6: 2437MHz





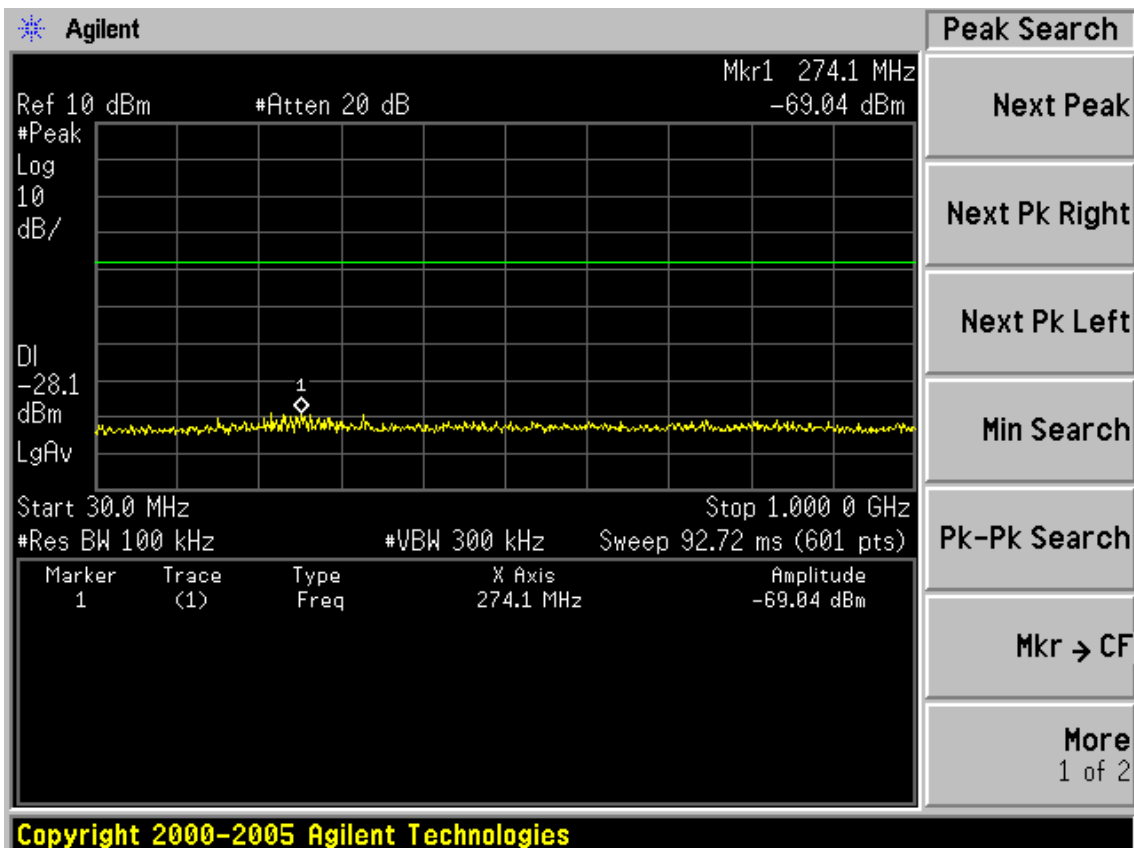
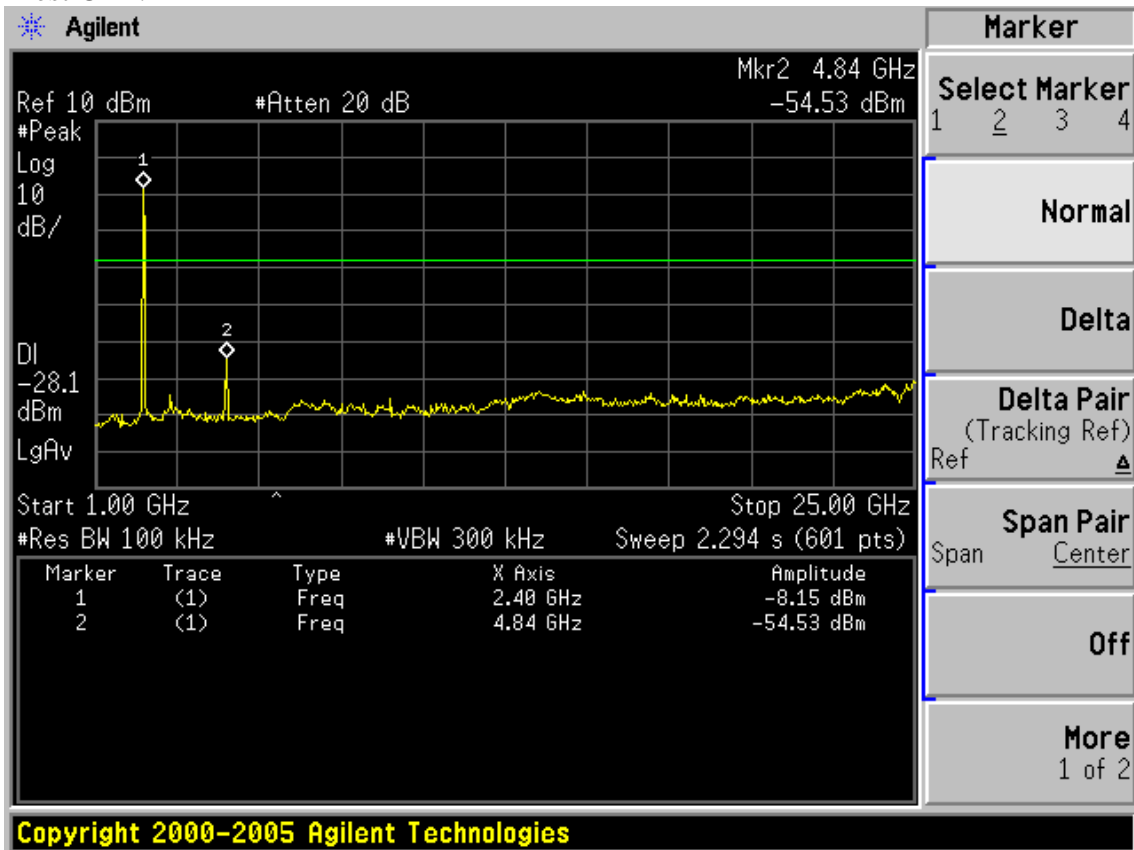
Test CH11: 2462MHz

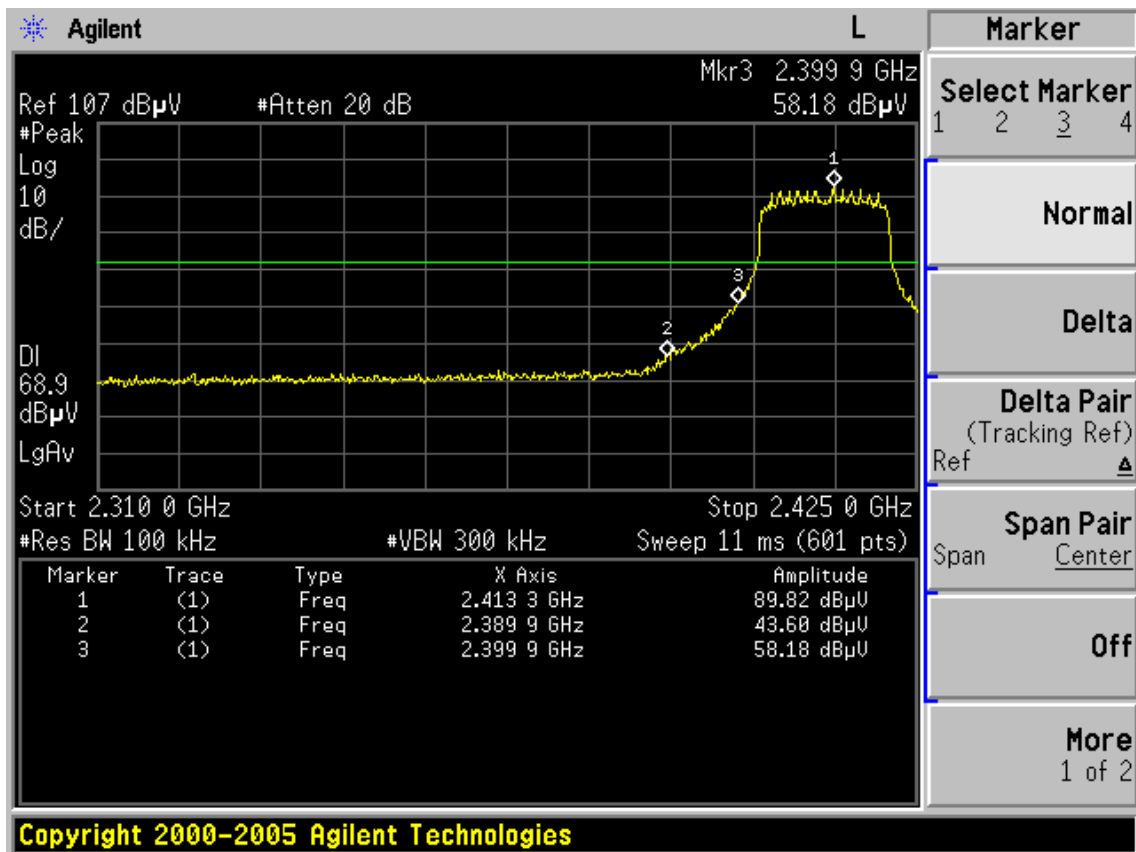




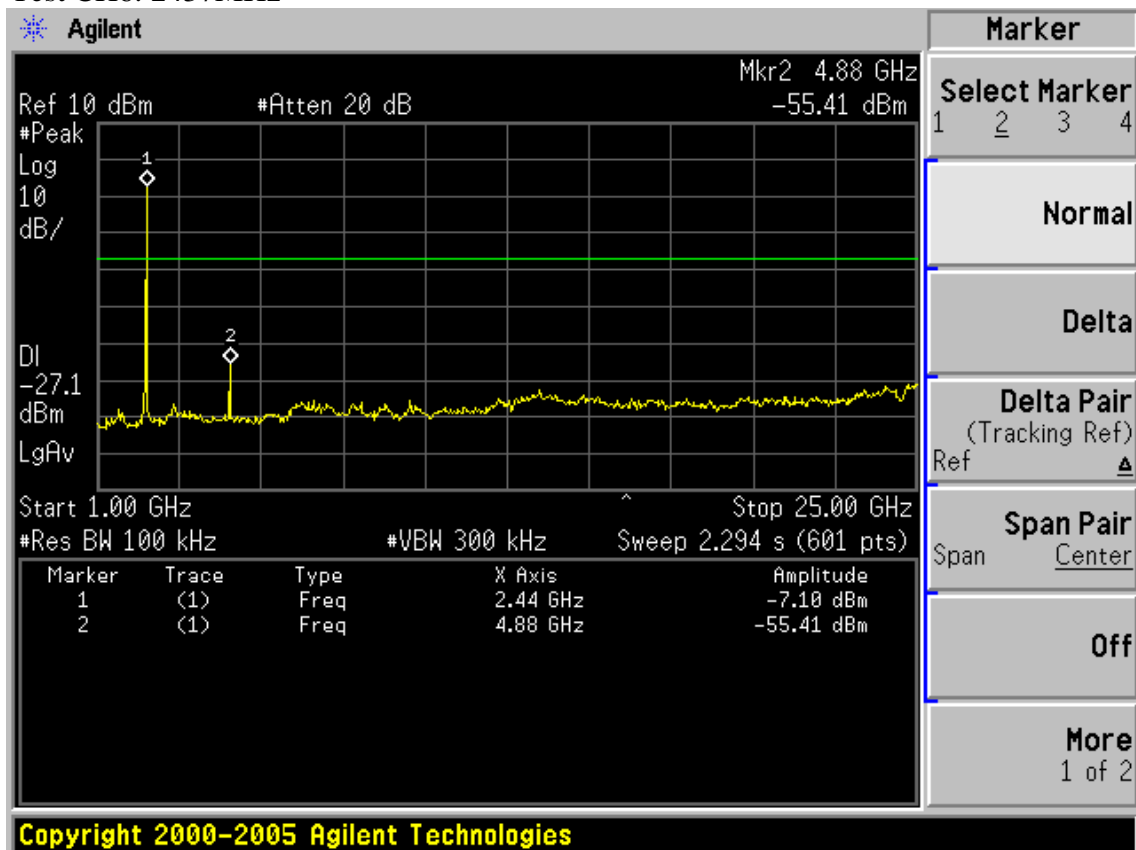
Test Mode: IEEE 802.11n HT20 TX

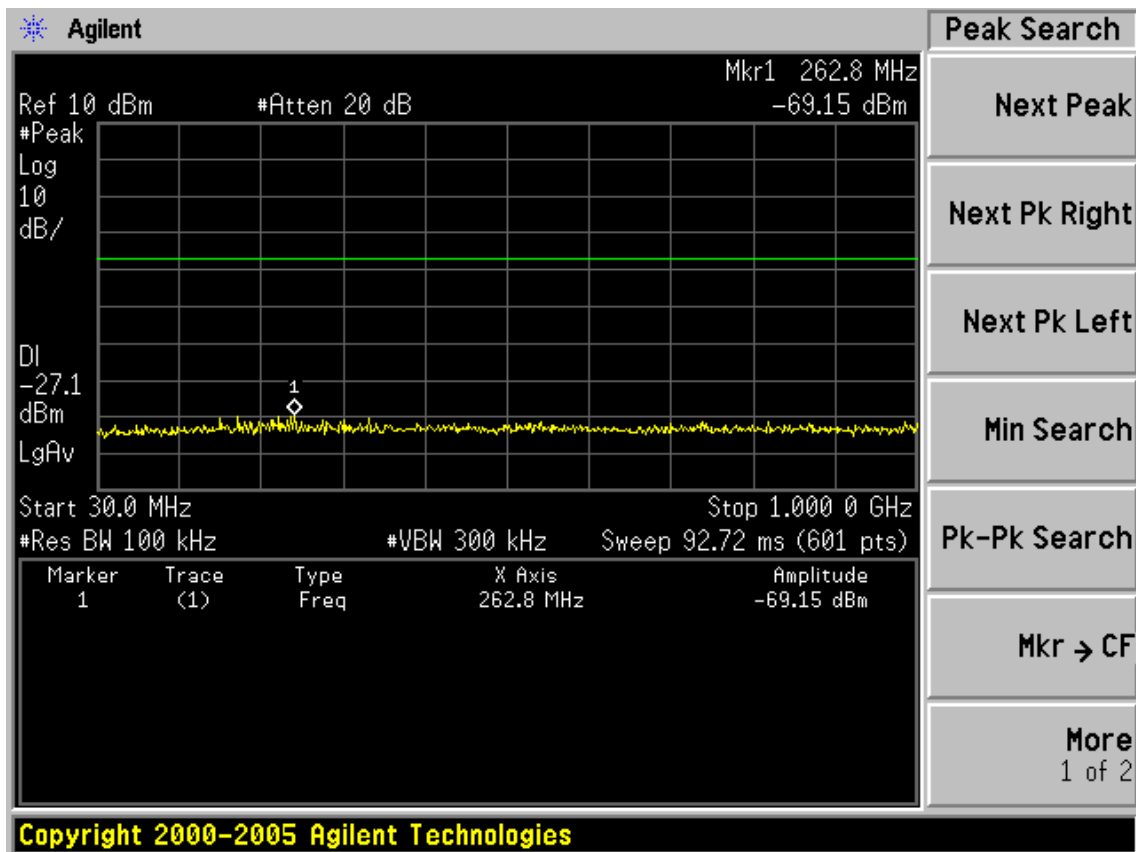
Test CH1: 2412MHz



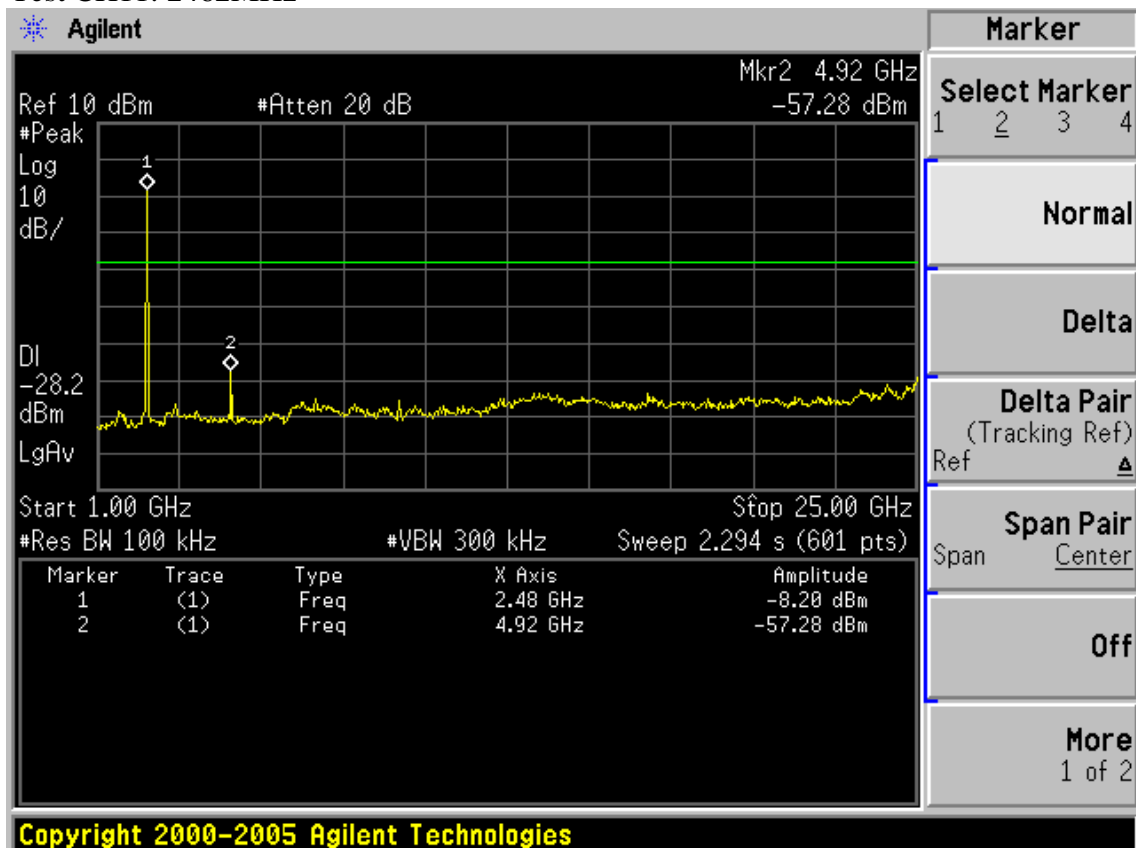


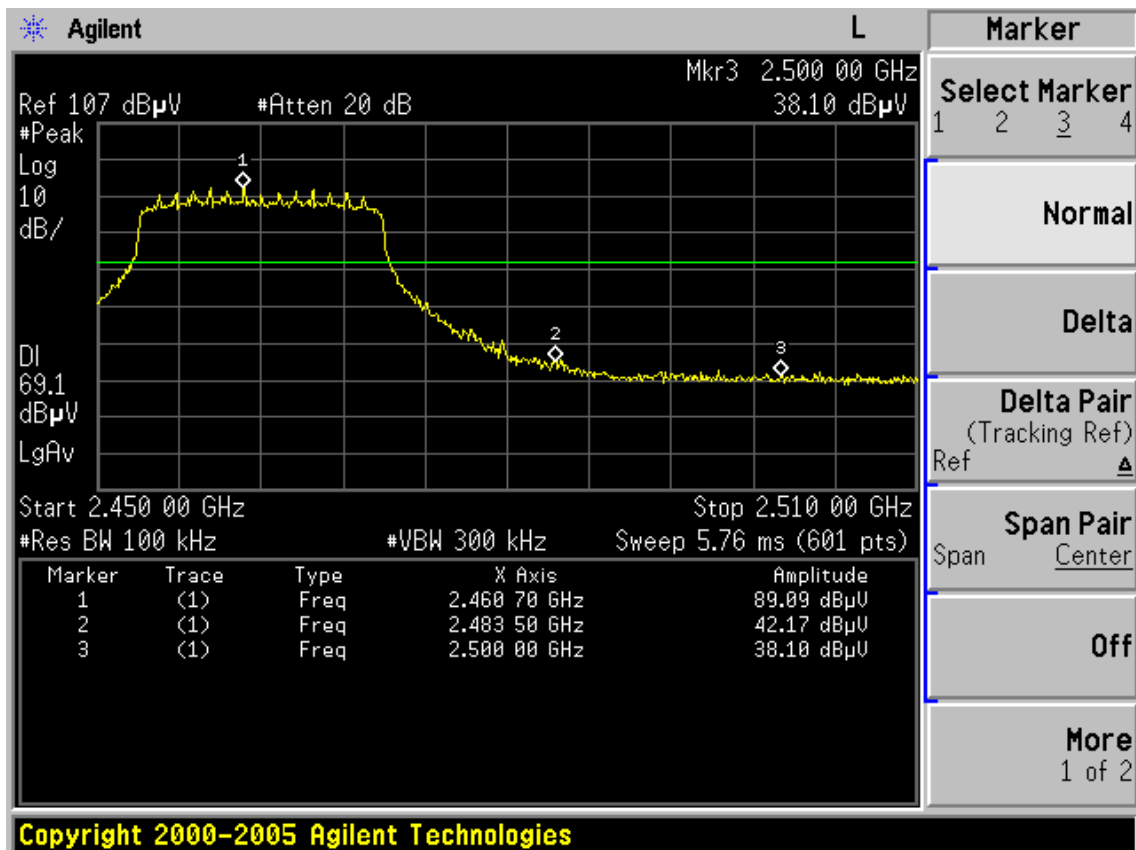
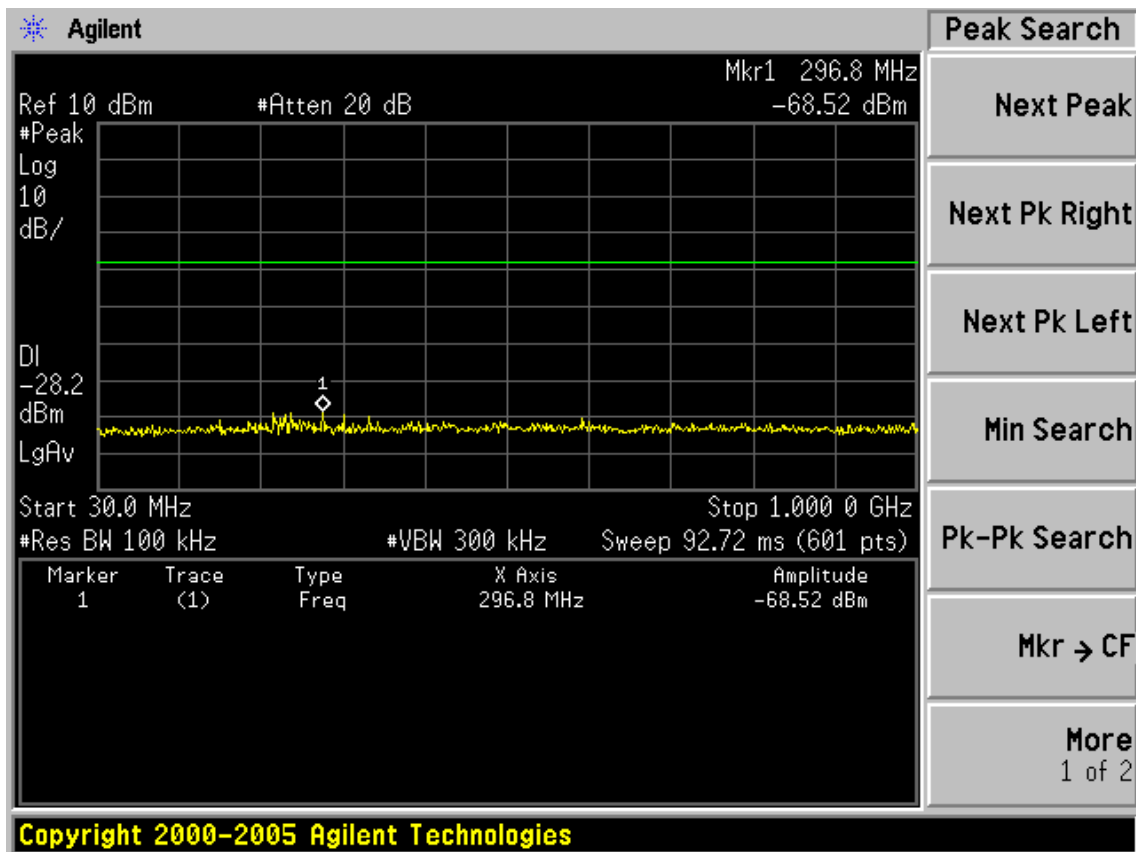
Test CH6: 2437MHz



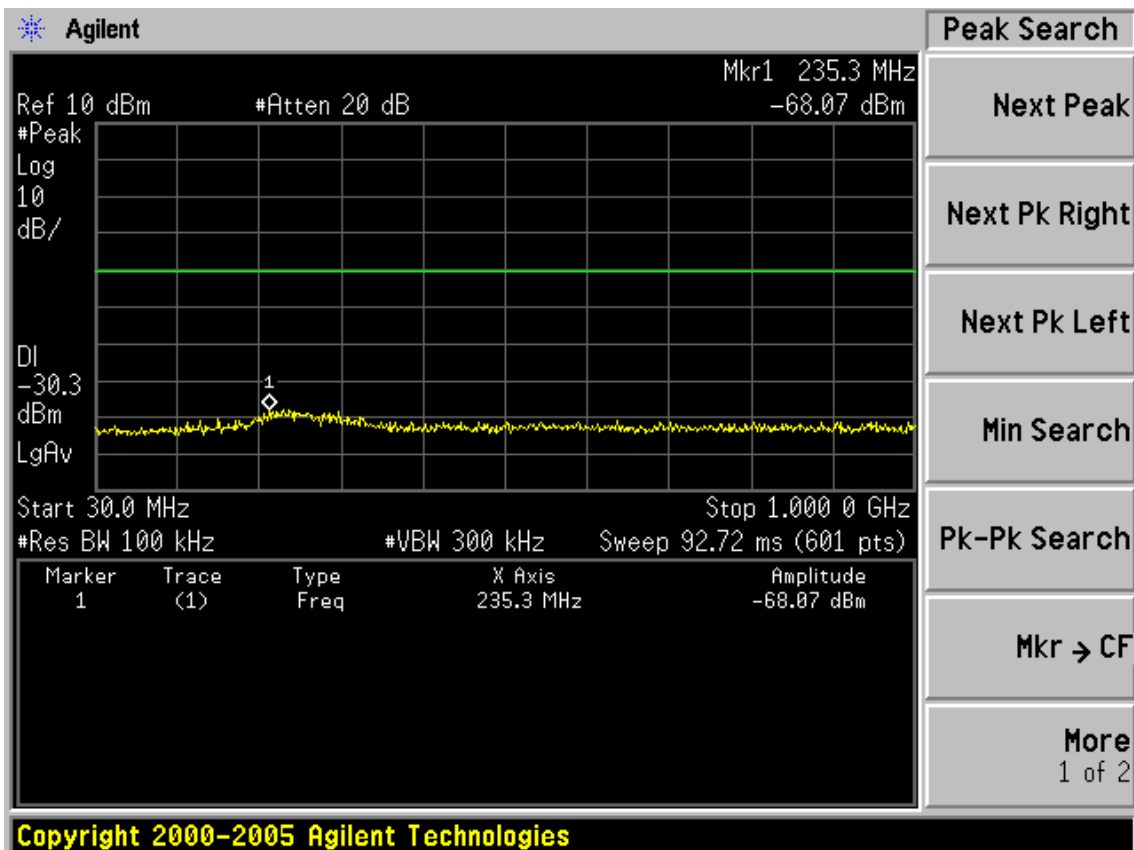
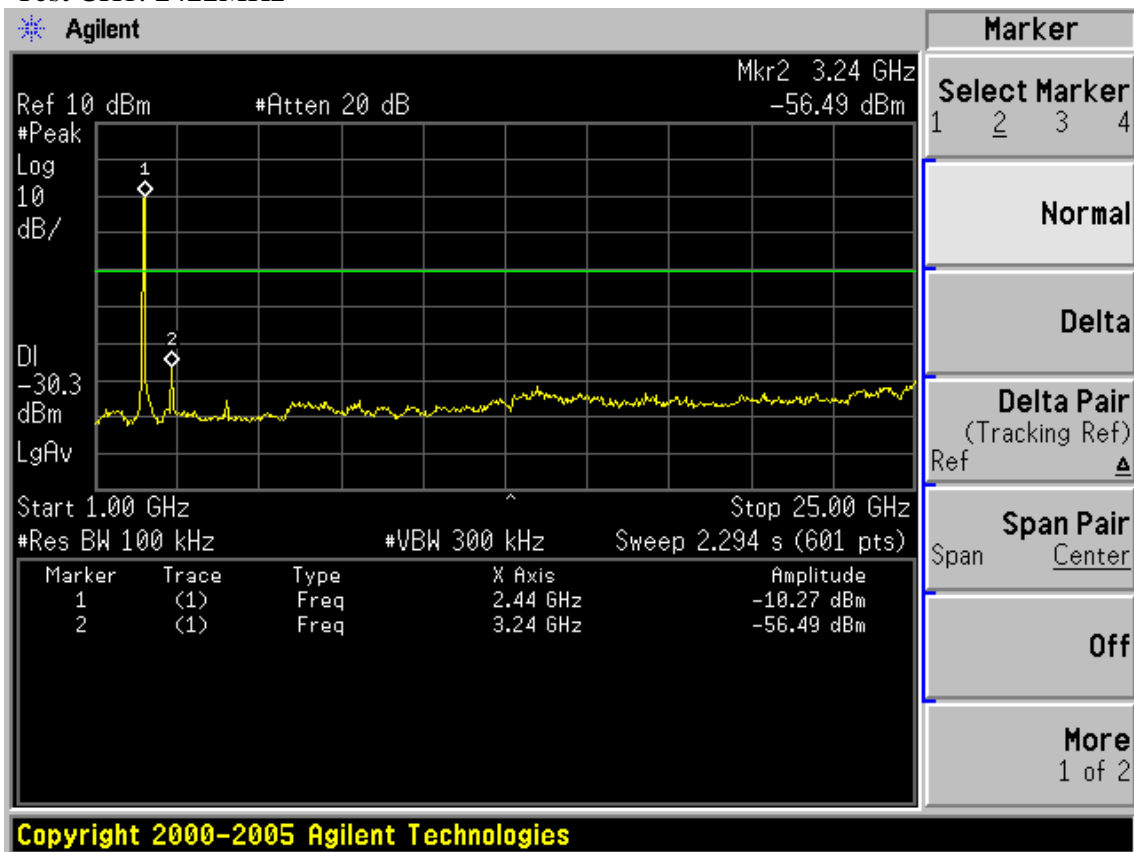


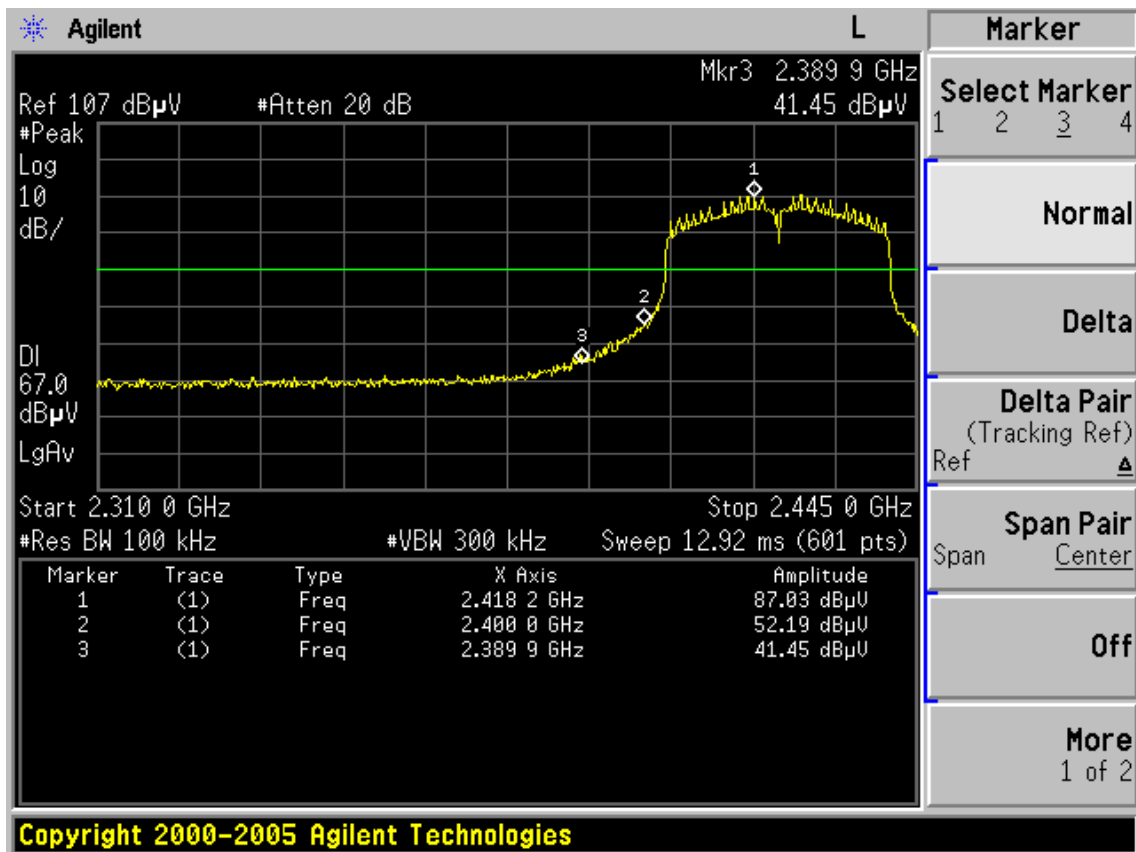
Test CH11: 2462MHz



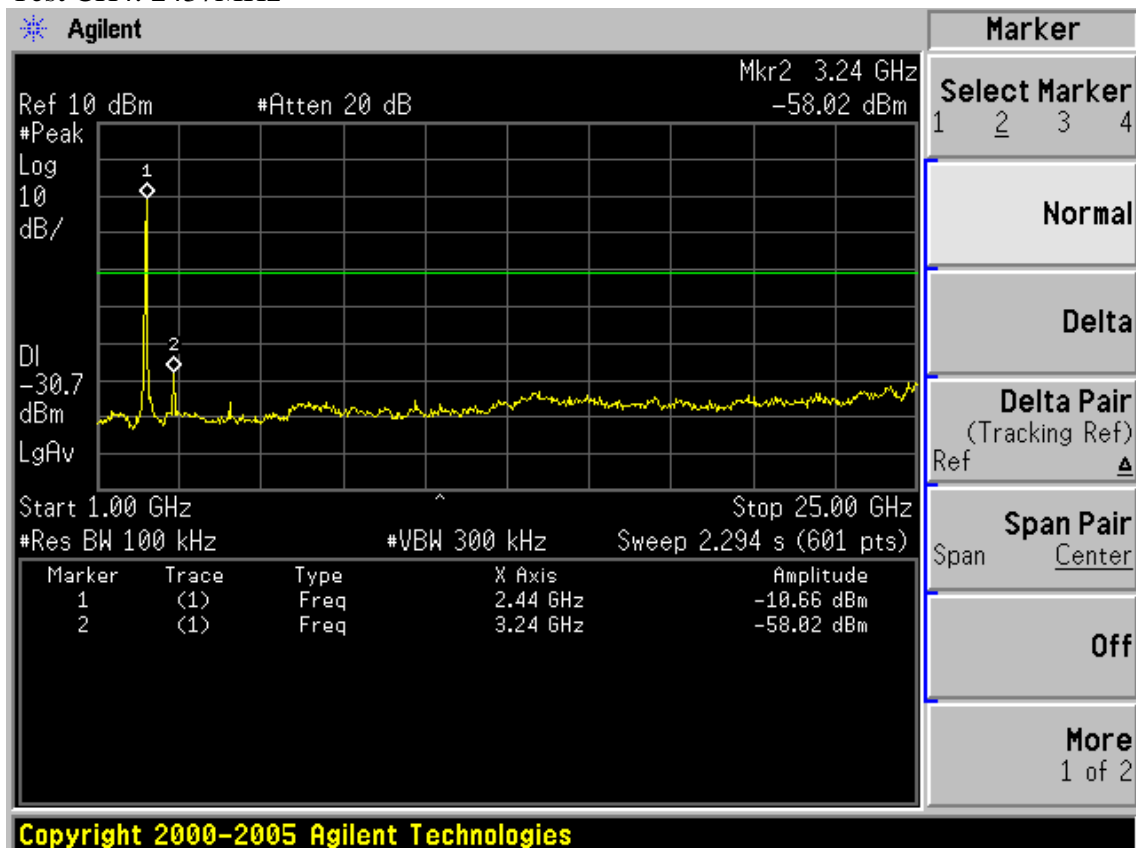


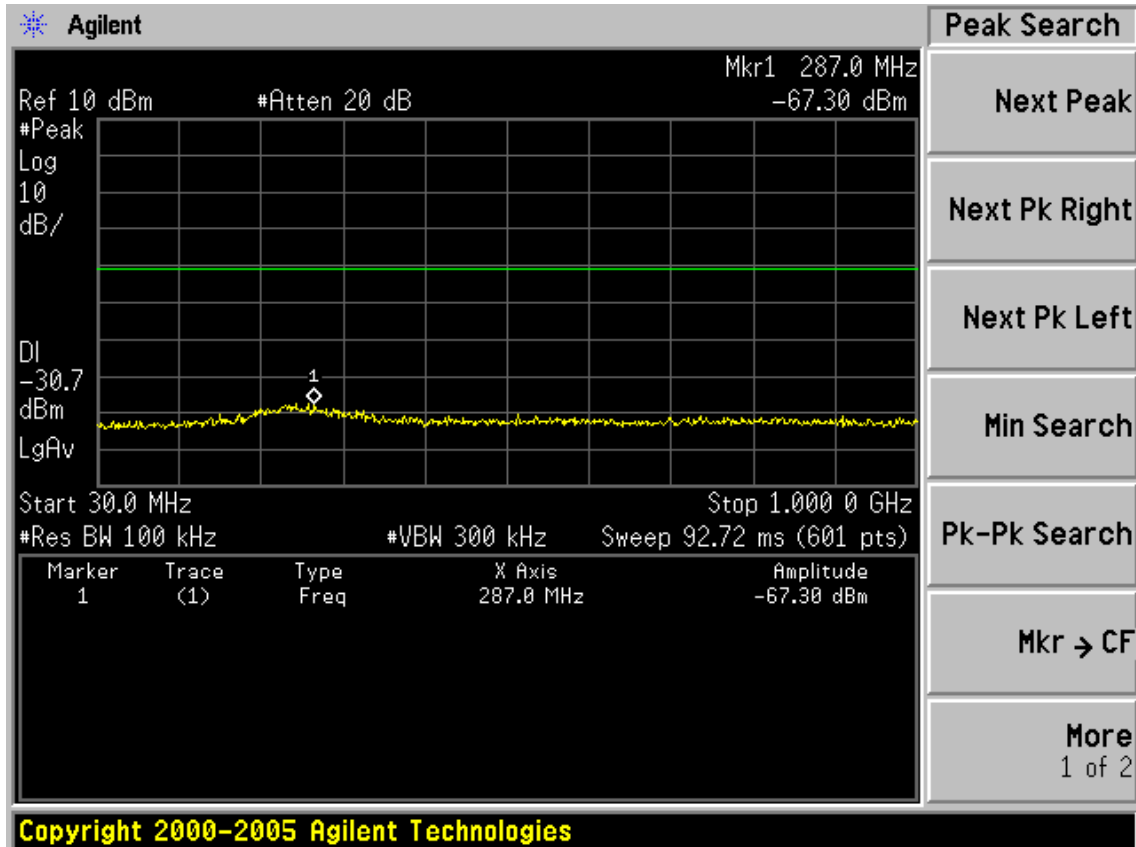
Test Mode: IEEE 802.11n HT40 TX
 Test CH1: 2422MHz



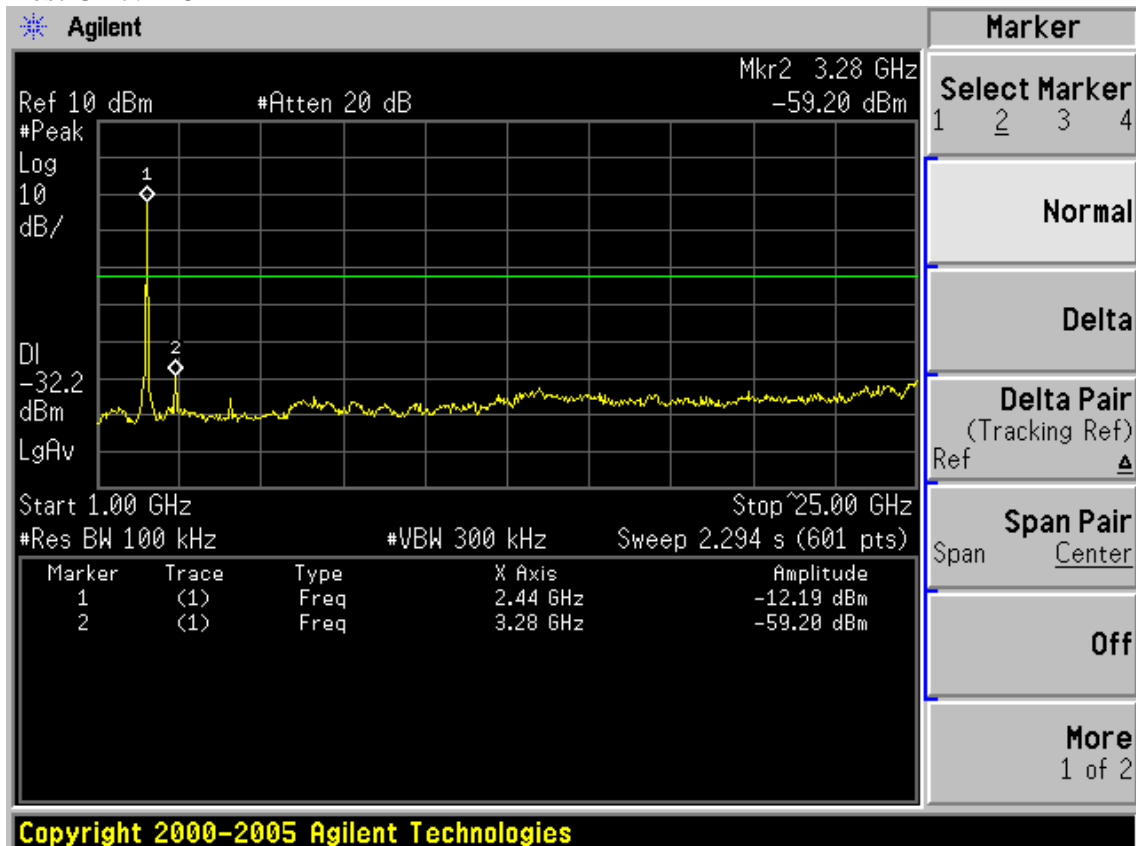


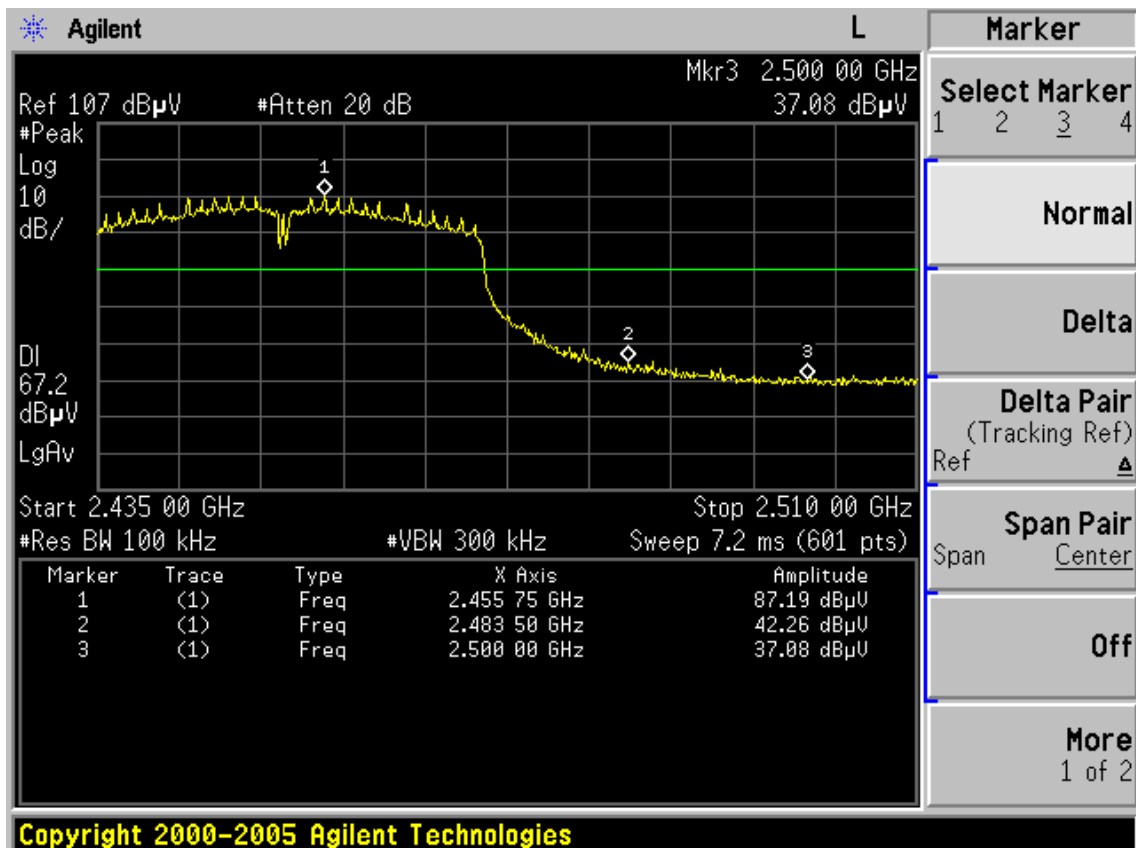
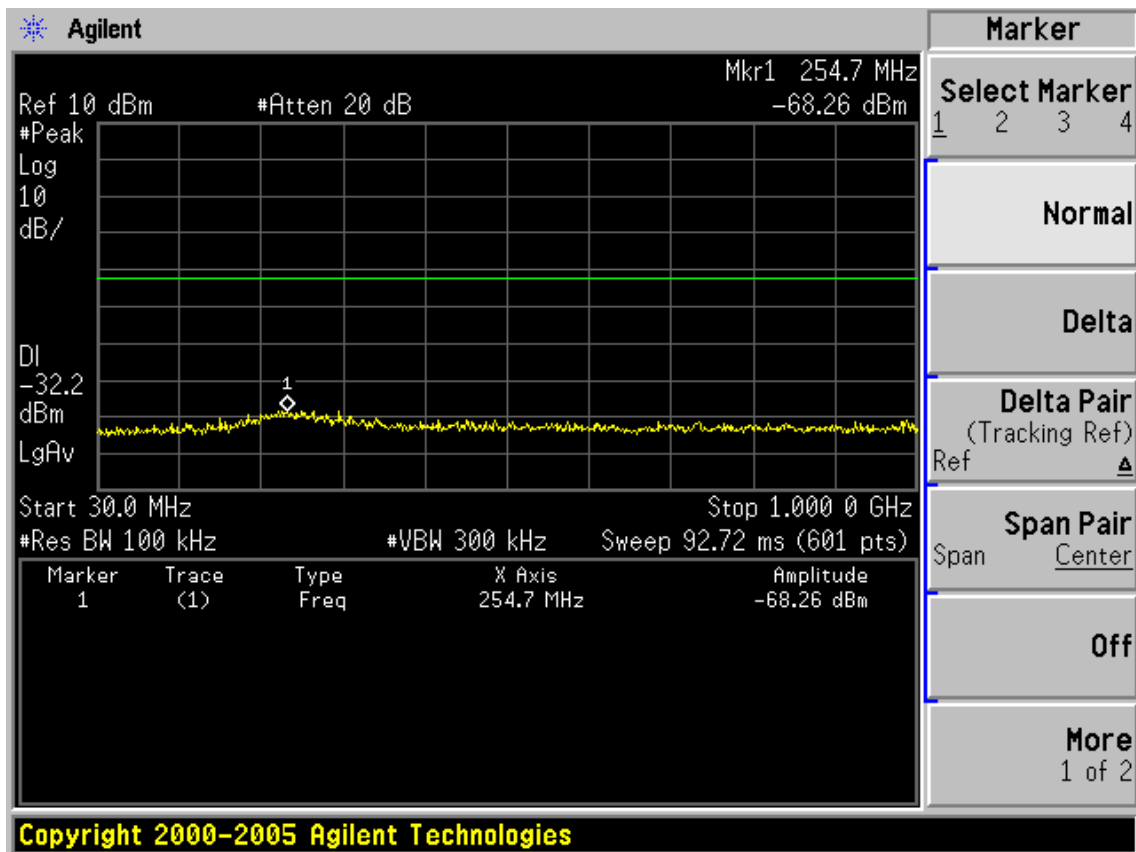
Test CH4: 2437MHz





Test CH7: 2452MHz

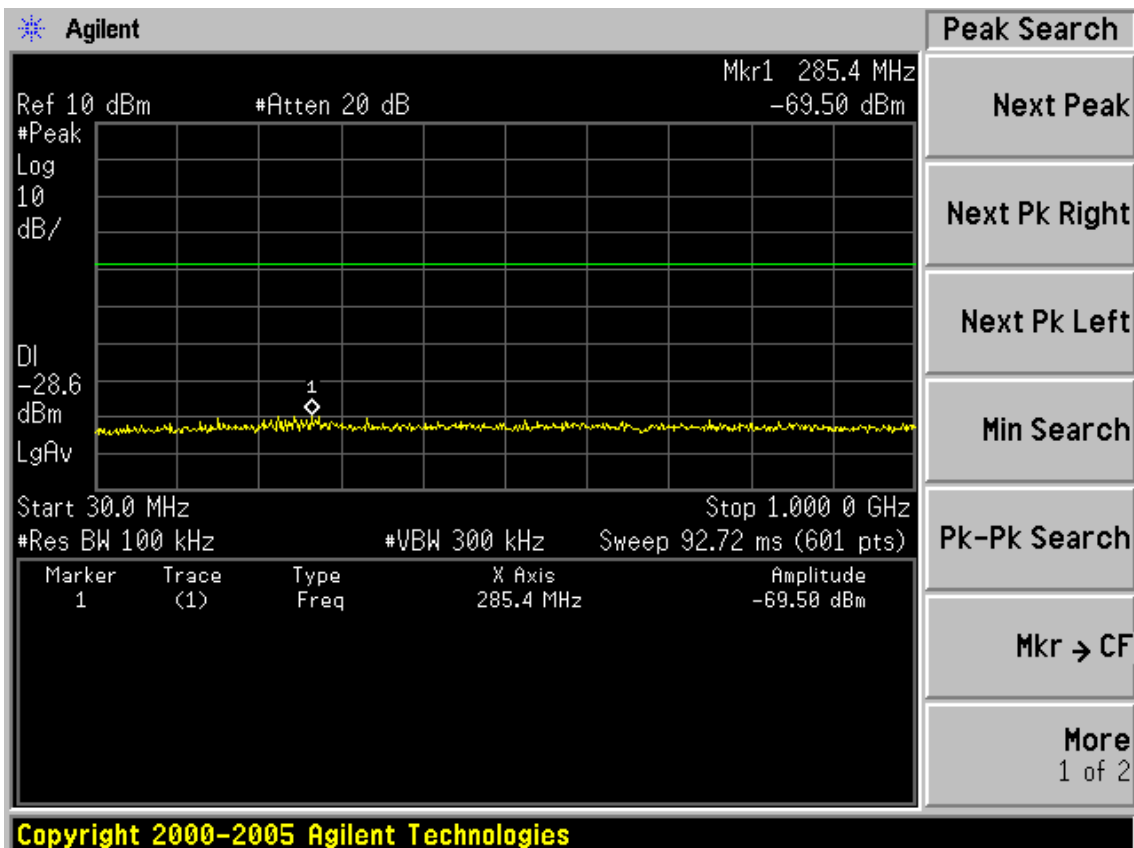
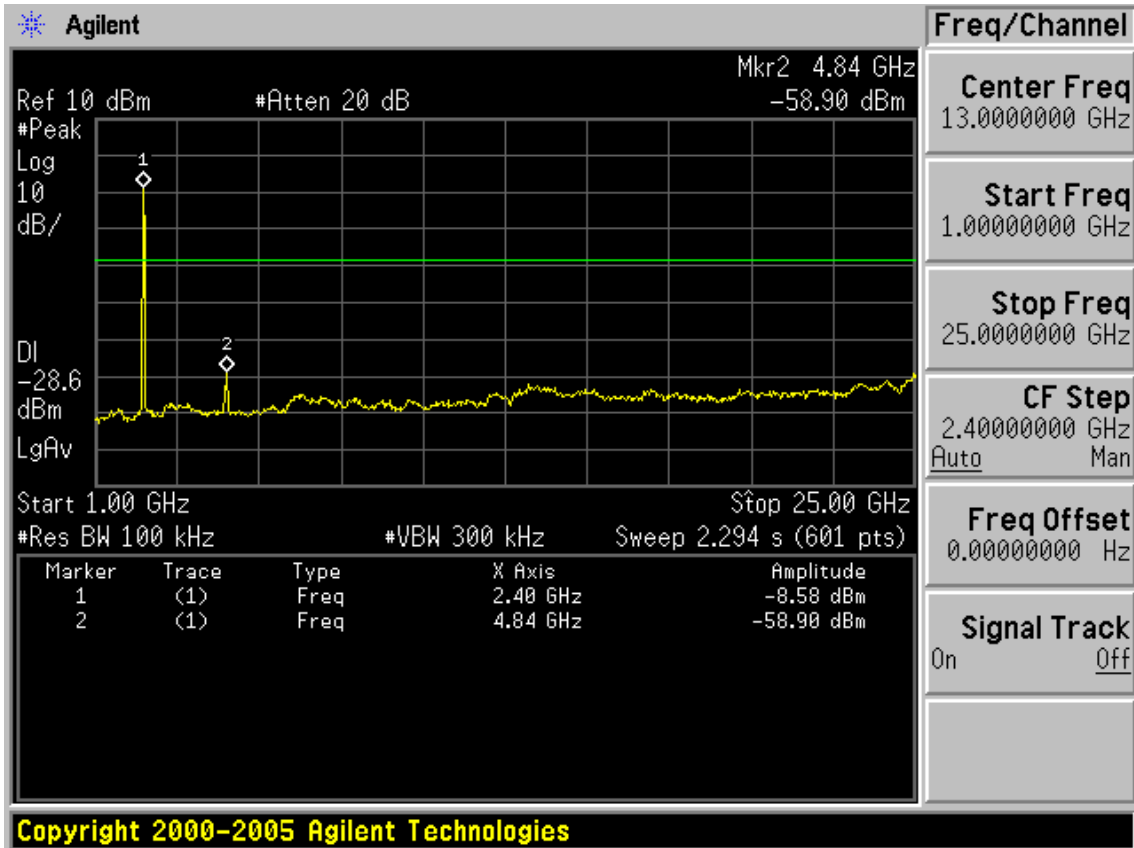


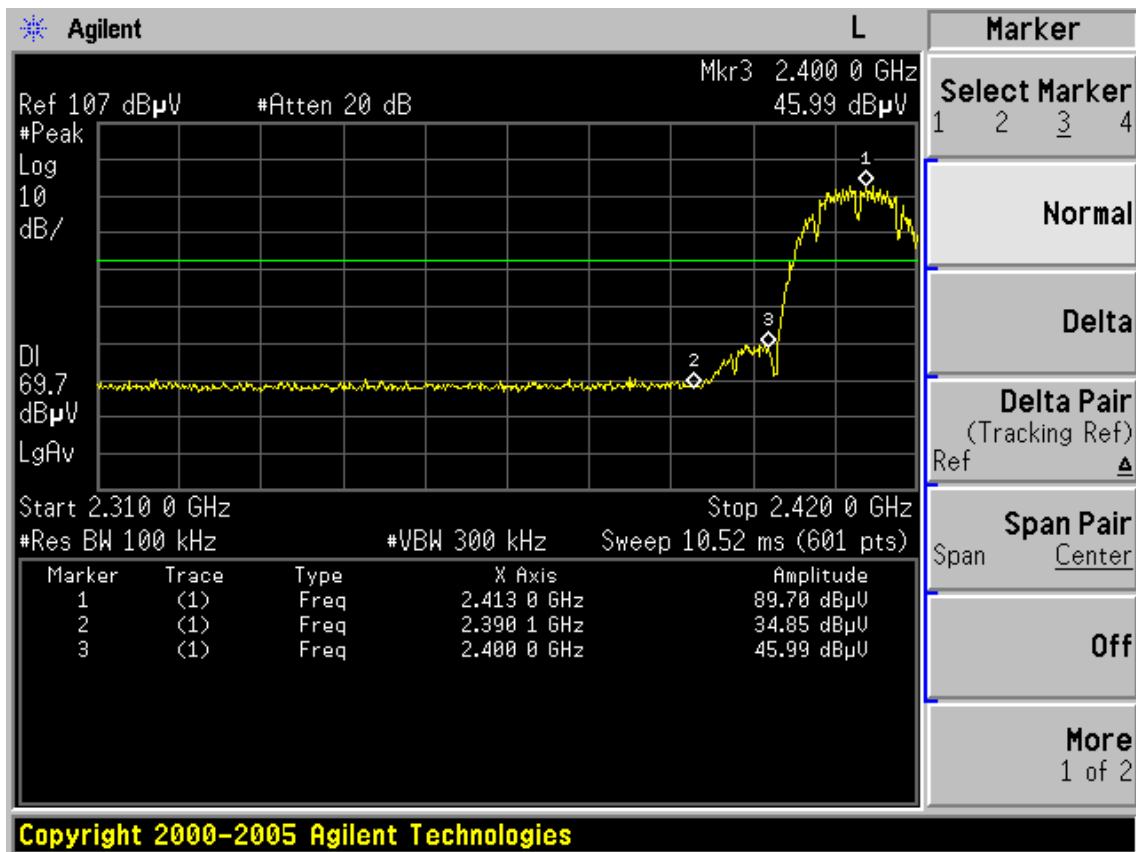


Chain 2:

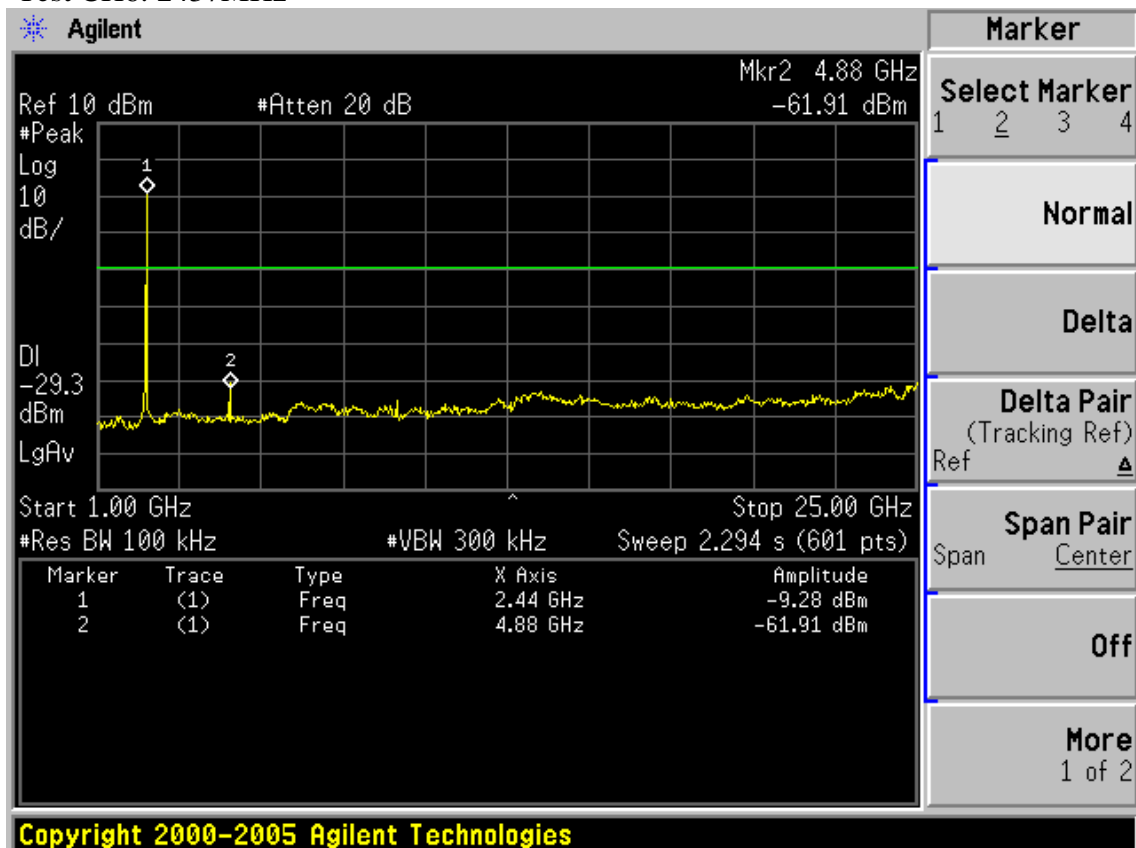
Test Mode: IEEE 802.11b TX

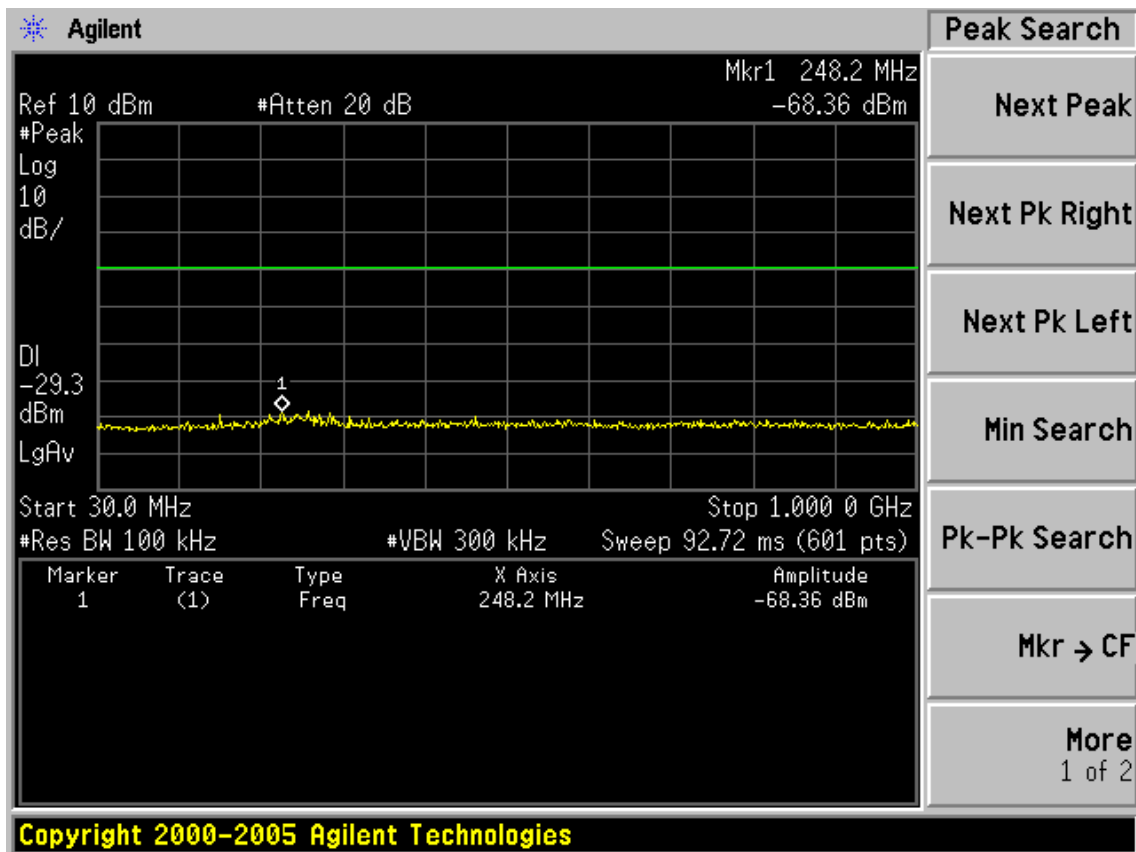
Test CH1: 2412MHz



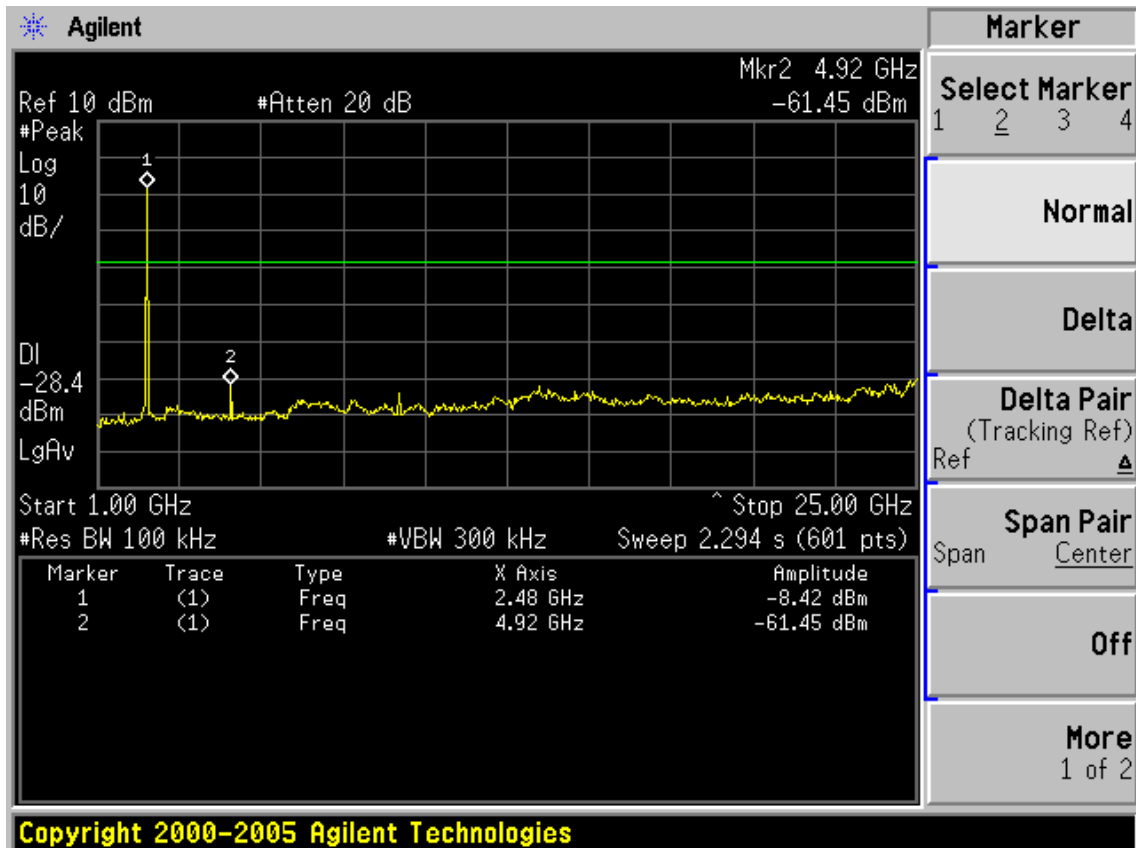


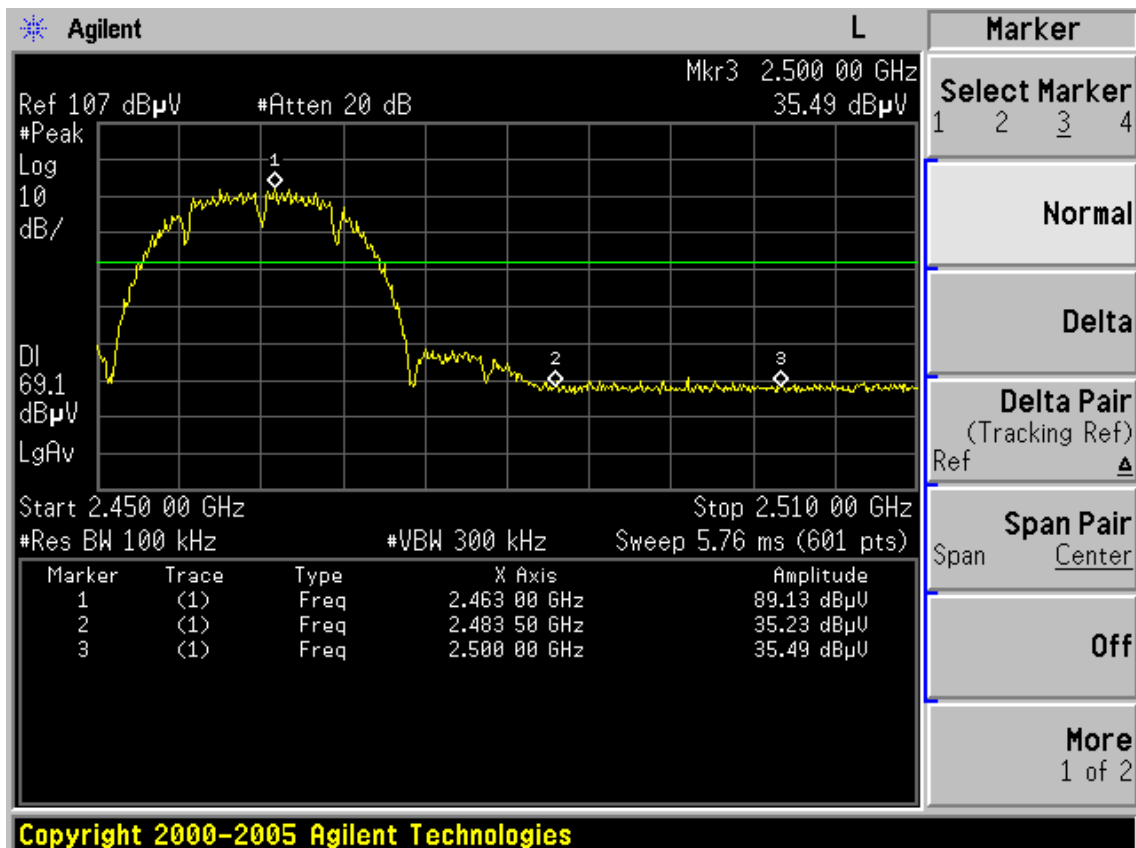
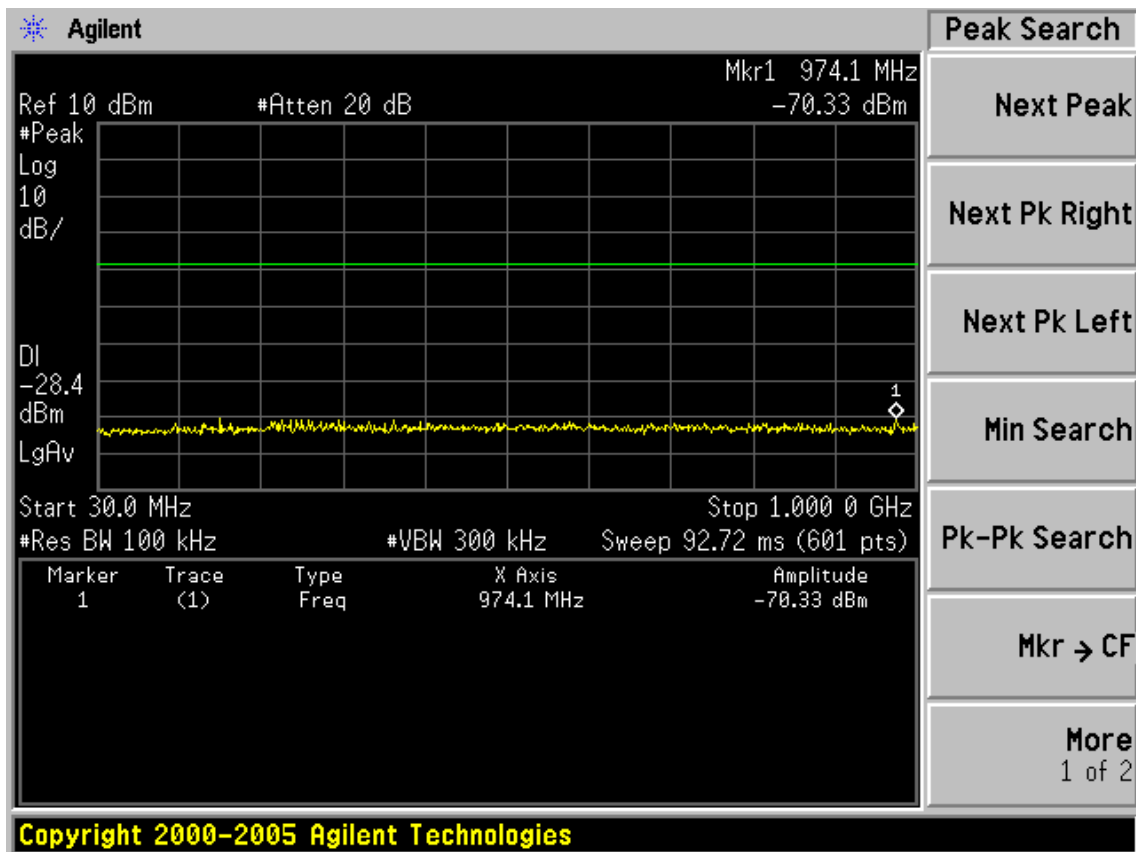
Test CH6: 2437MHz



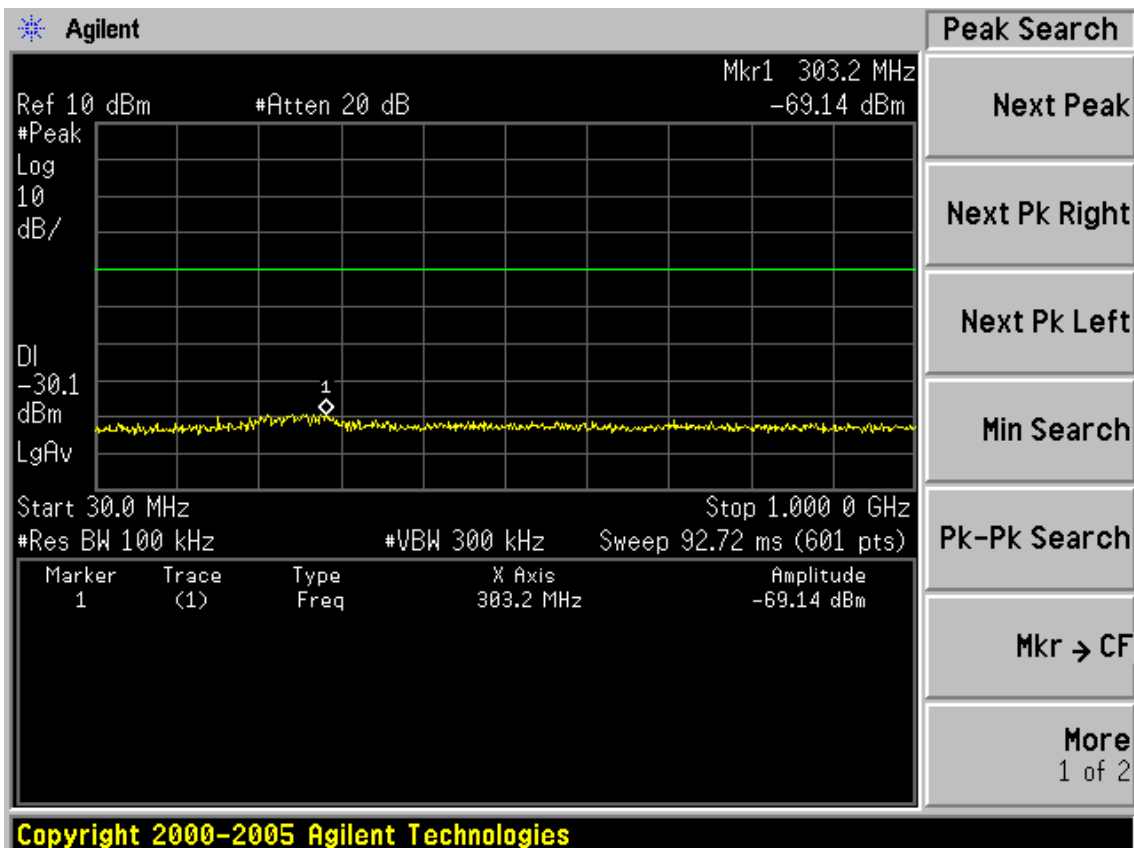
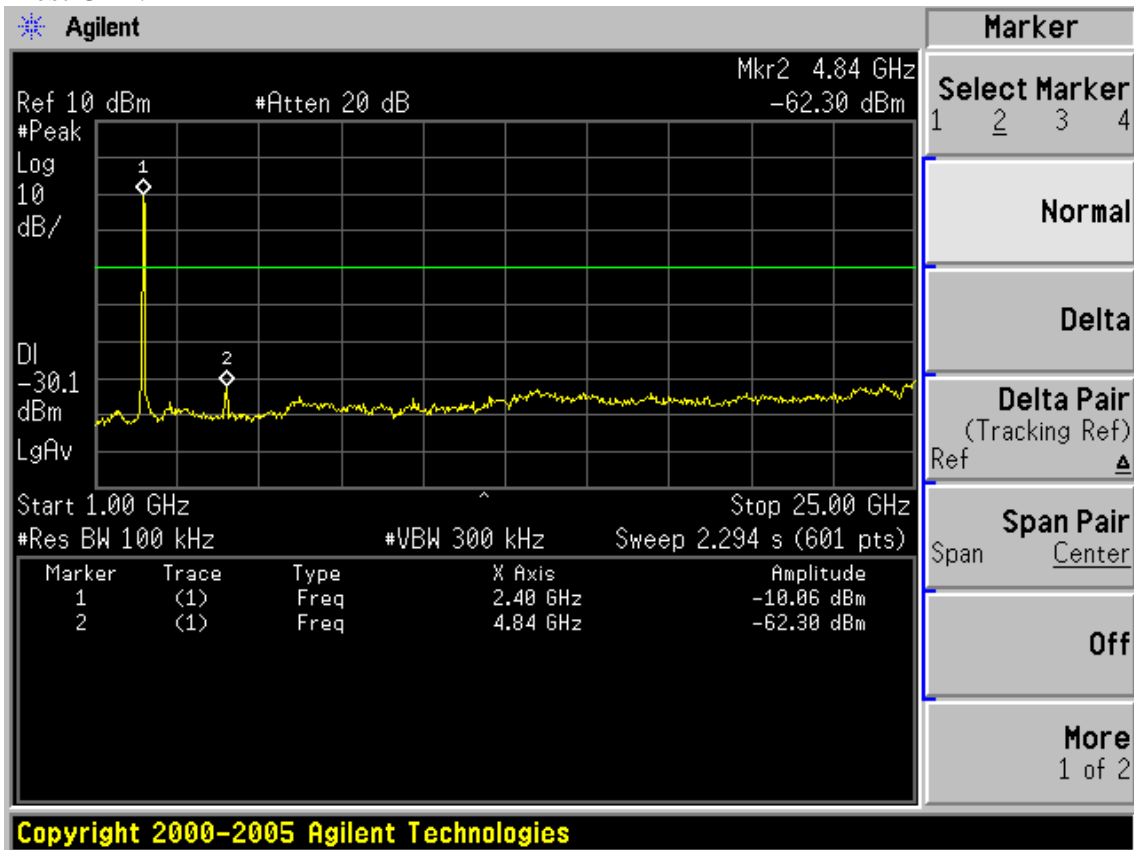


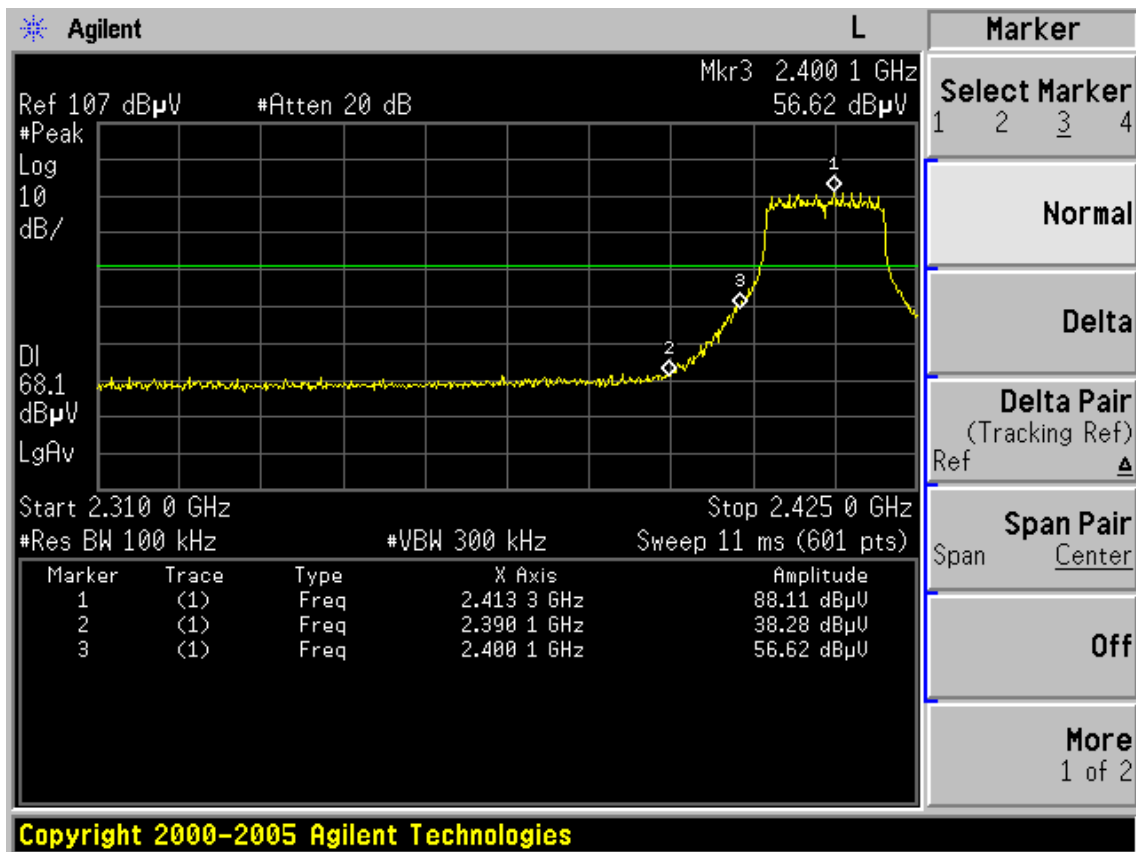
Test CH11: 2462MHz



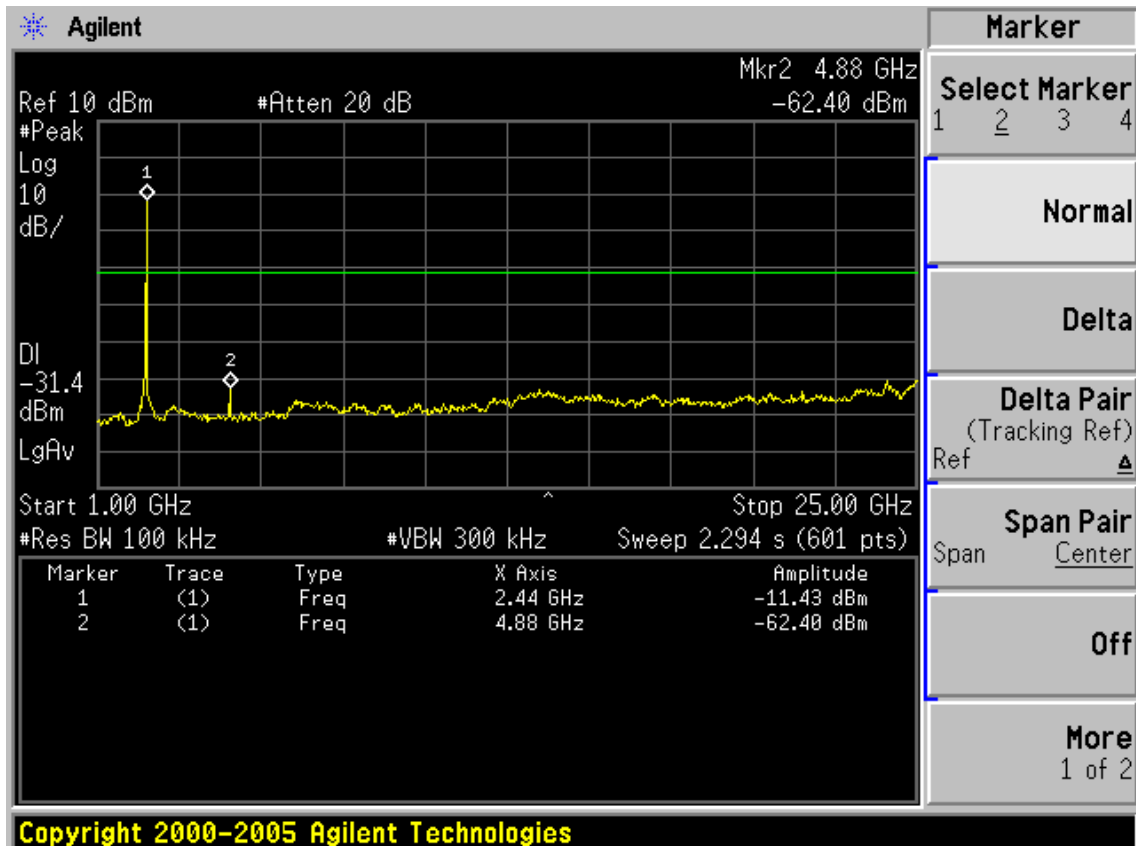


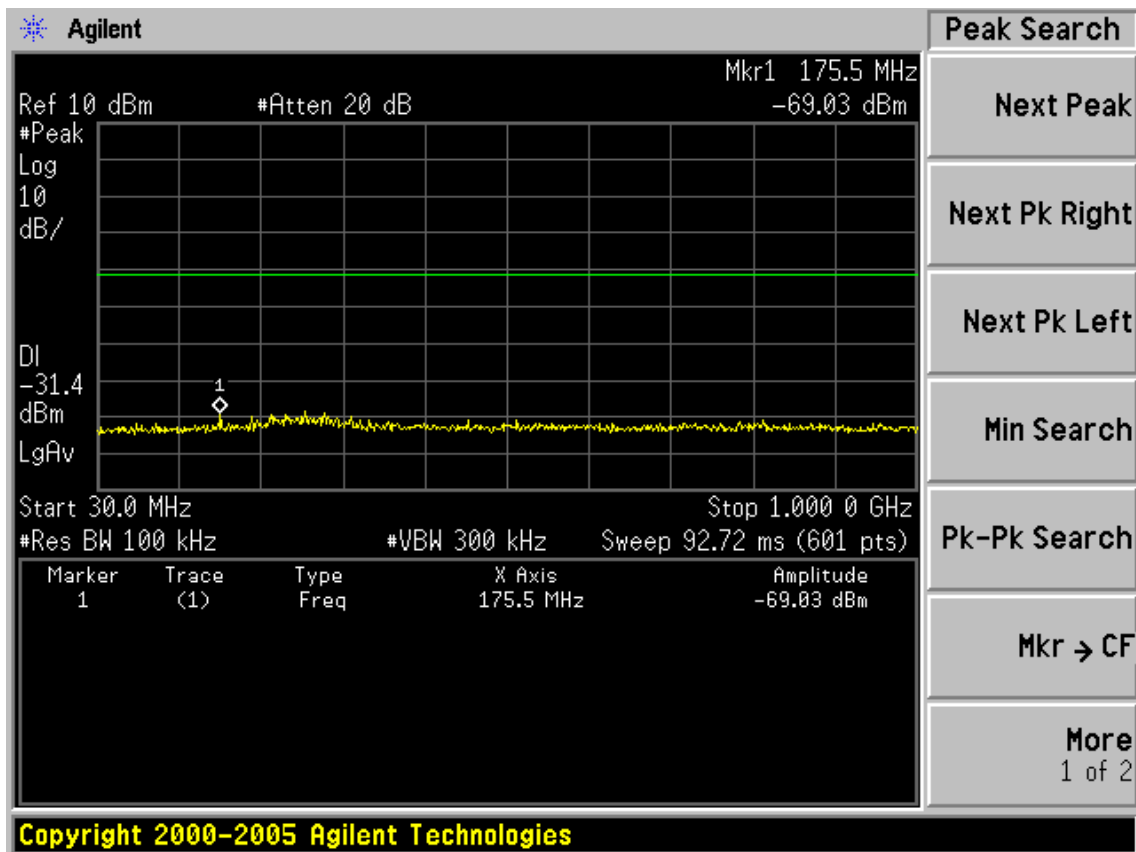
Test Mode: IEEE 802.11g TX
 Test CH1: 2412MHz



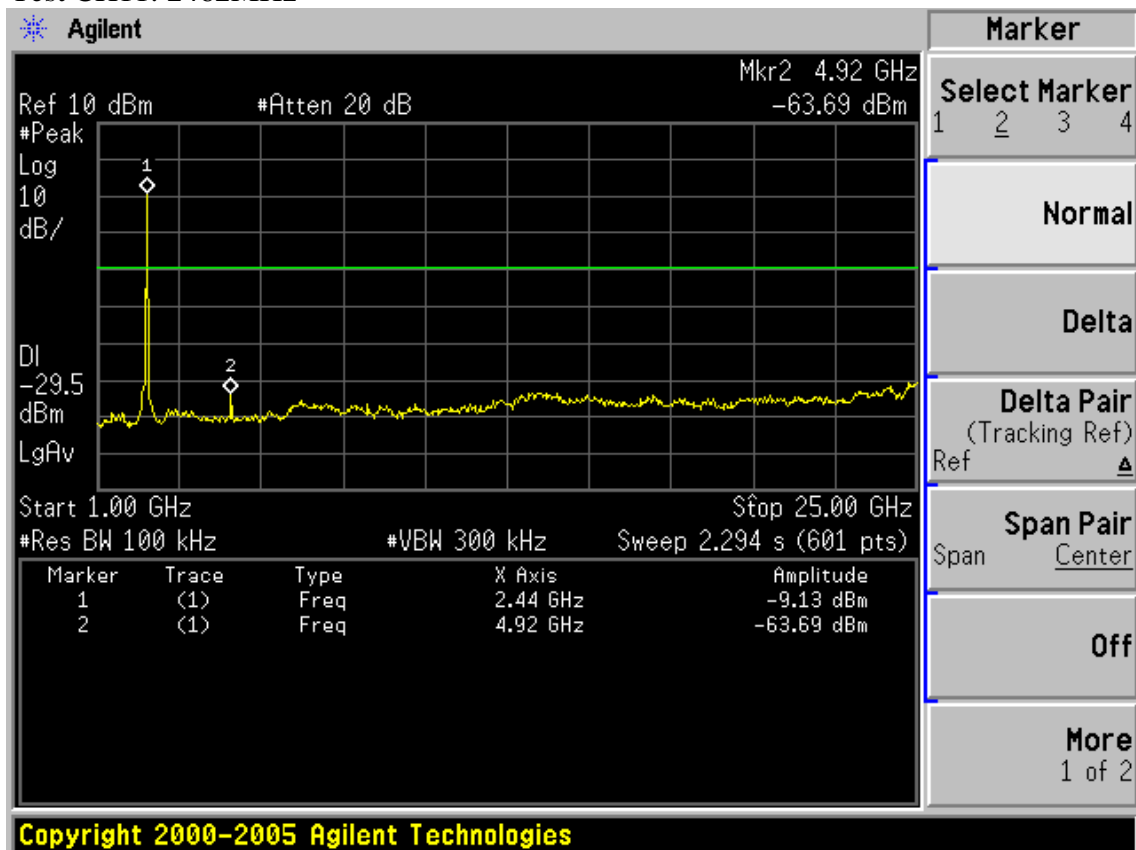


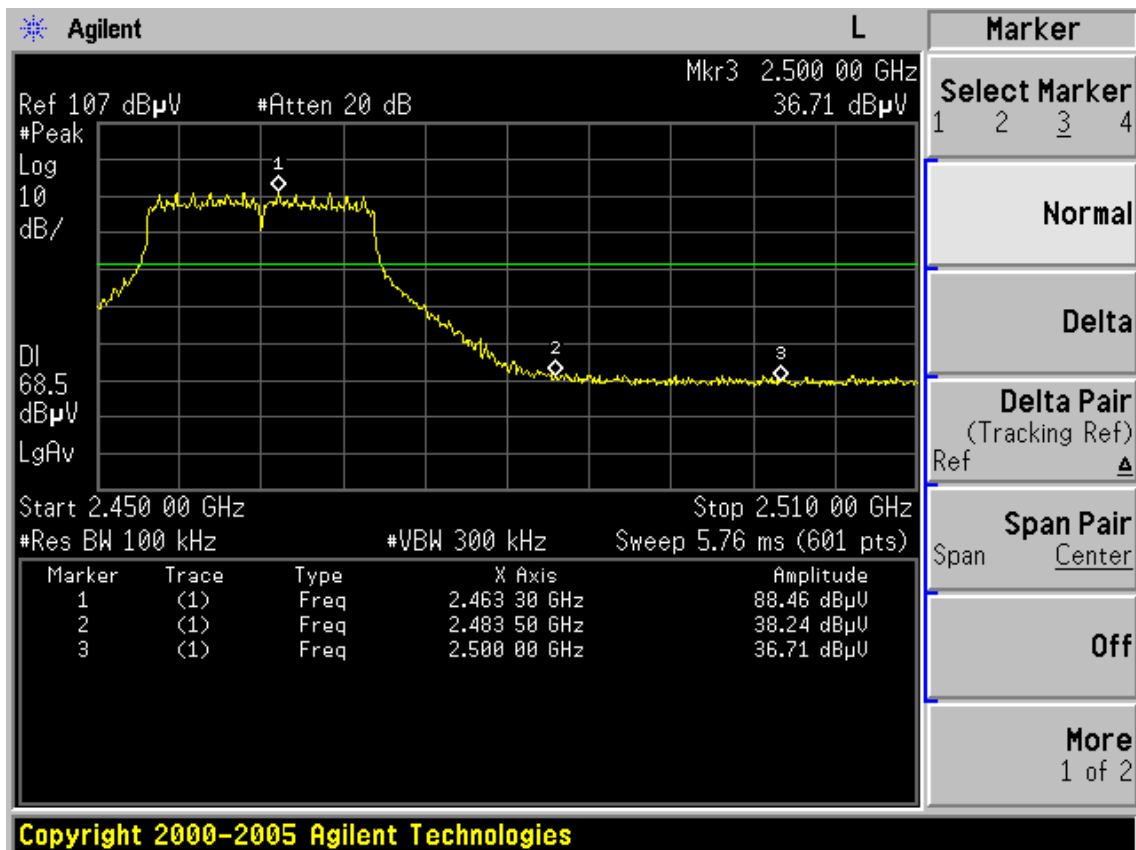
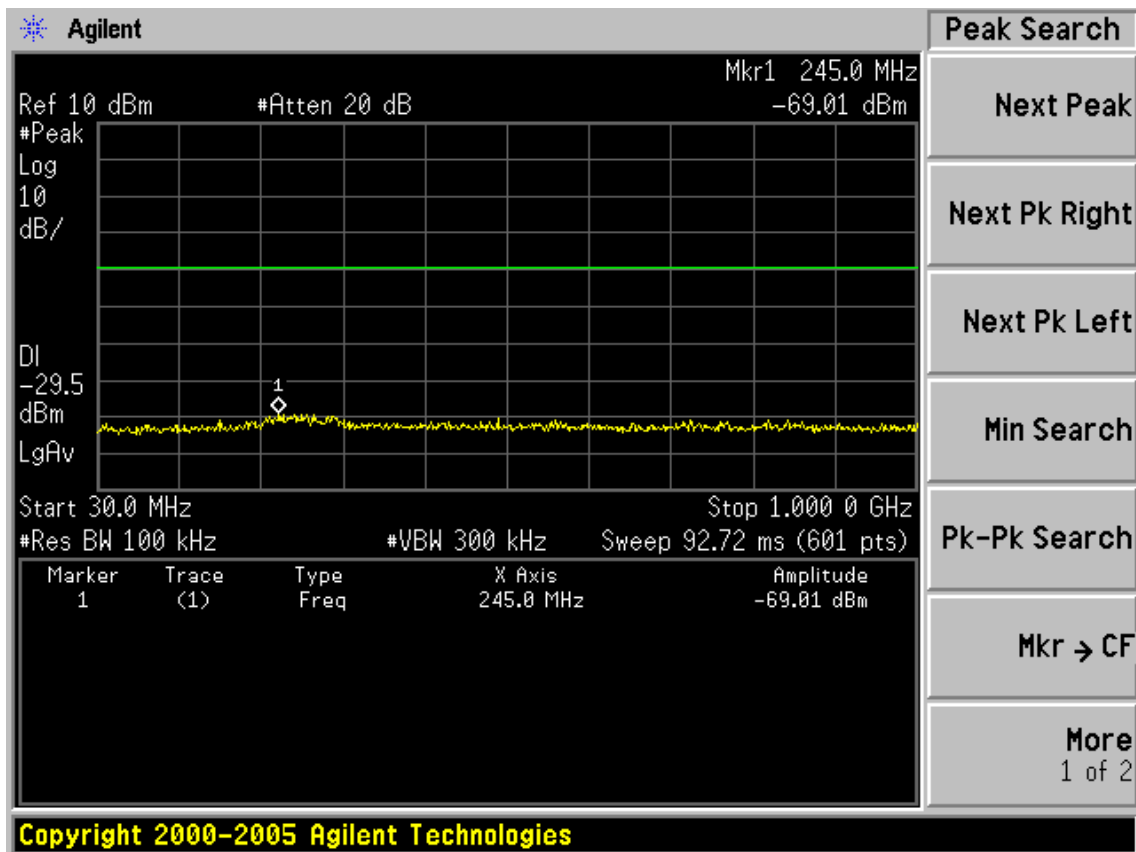
Test CH6: 2437MHz



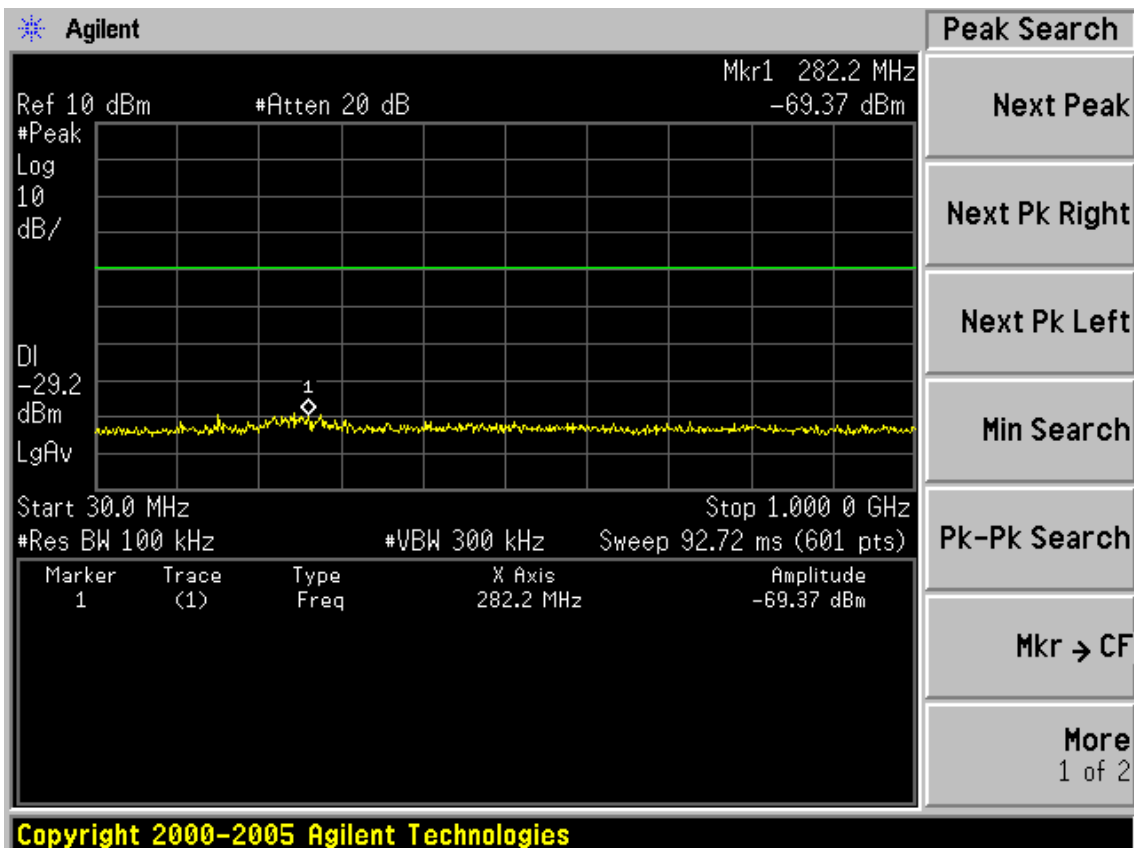
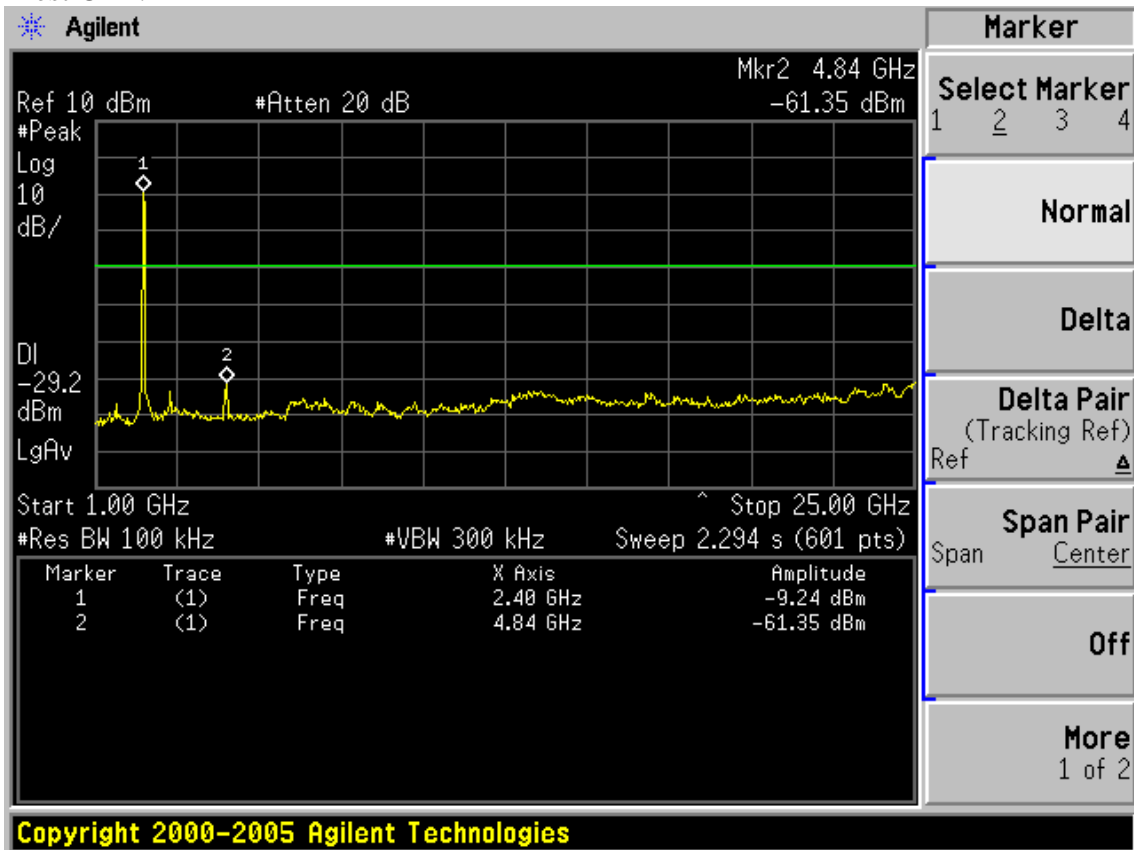


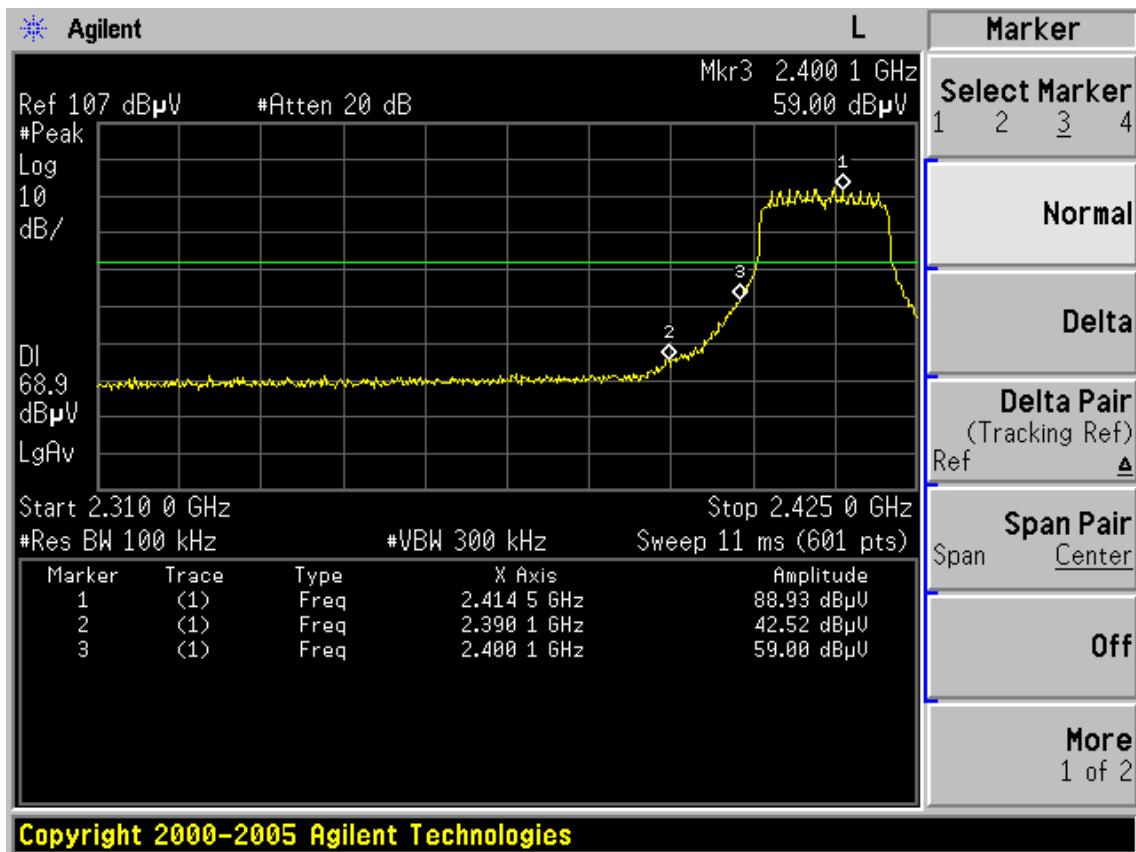
Test CH11: 2462MHz



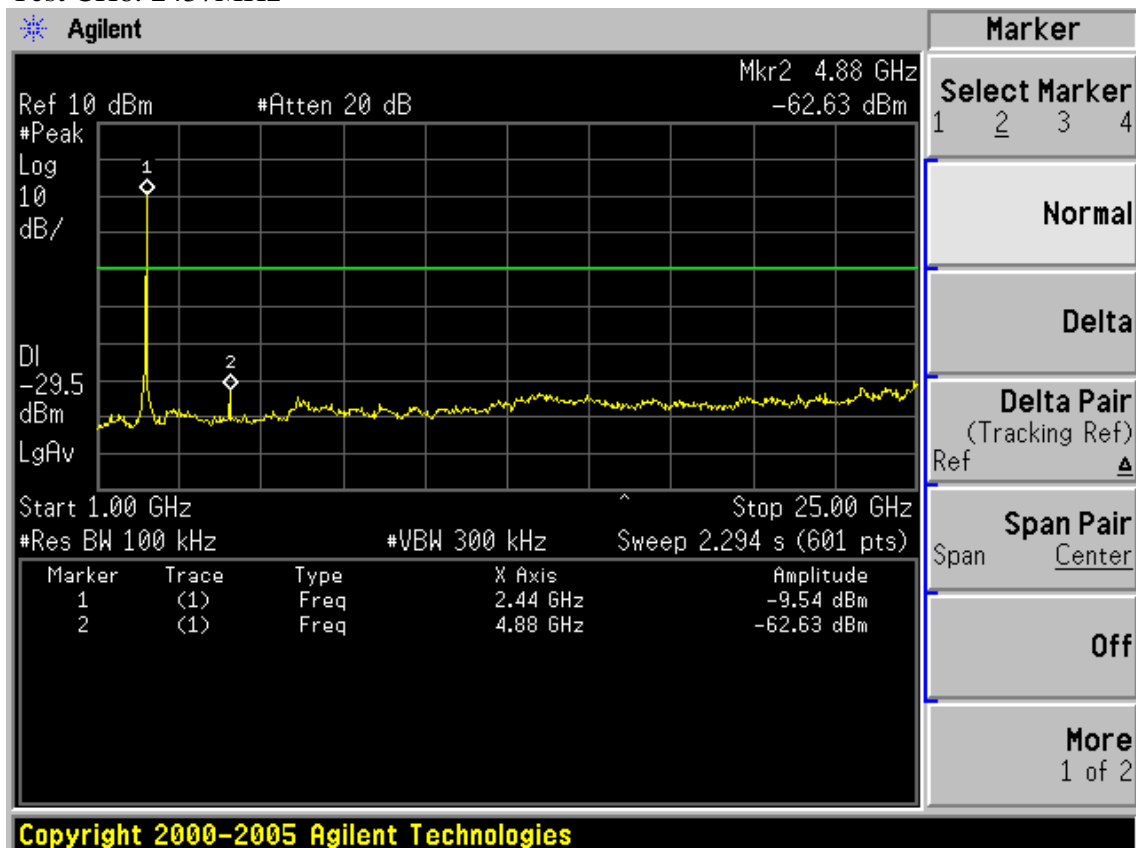


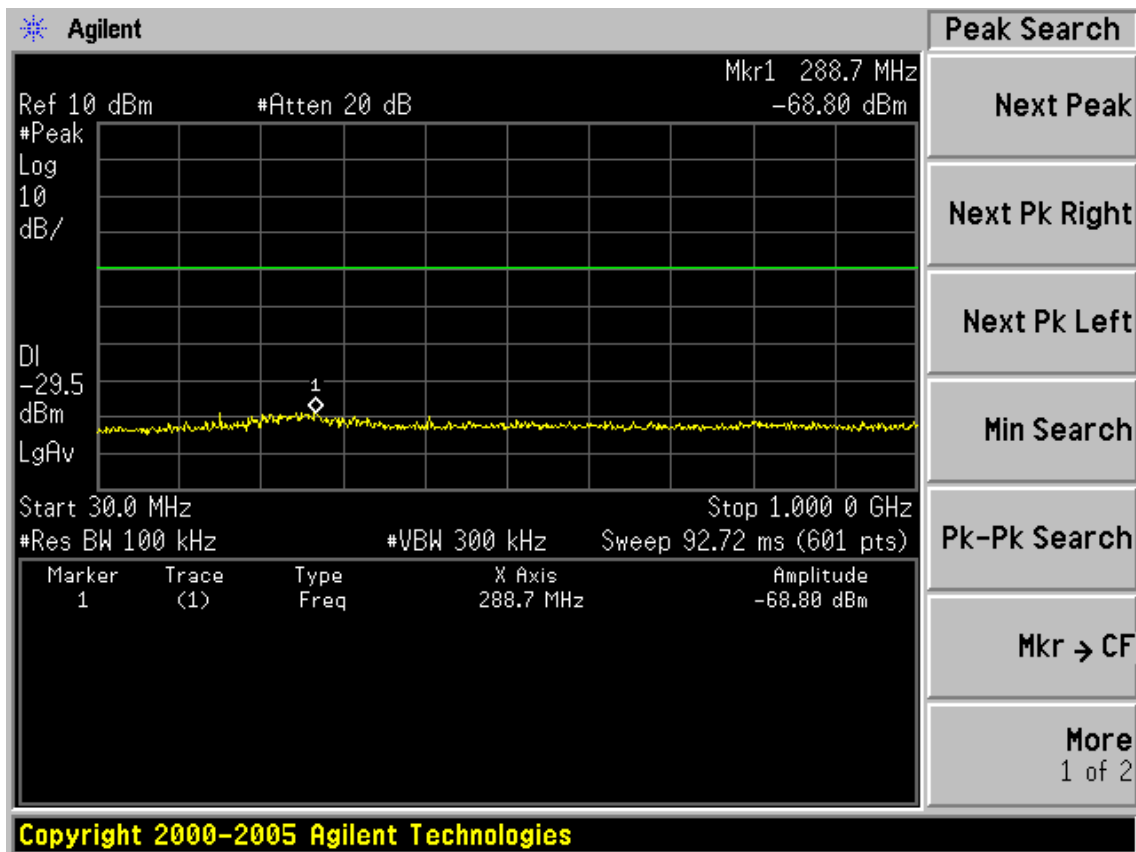
Test Mode: IEEE 802.11n HT20 TX
 Test CH1: 2412MHz



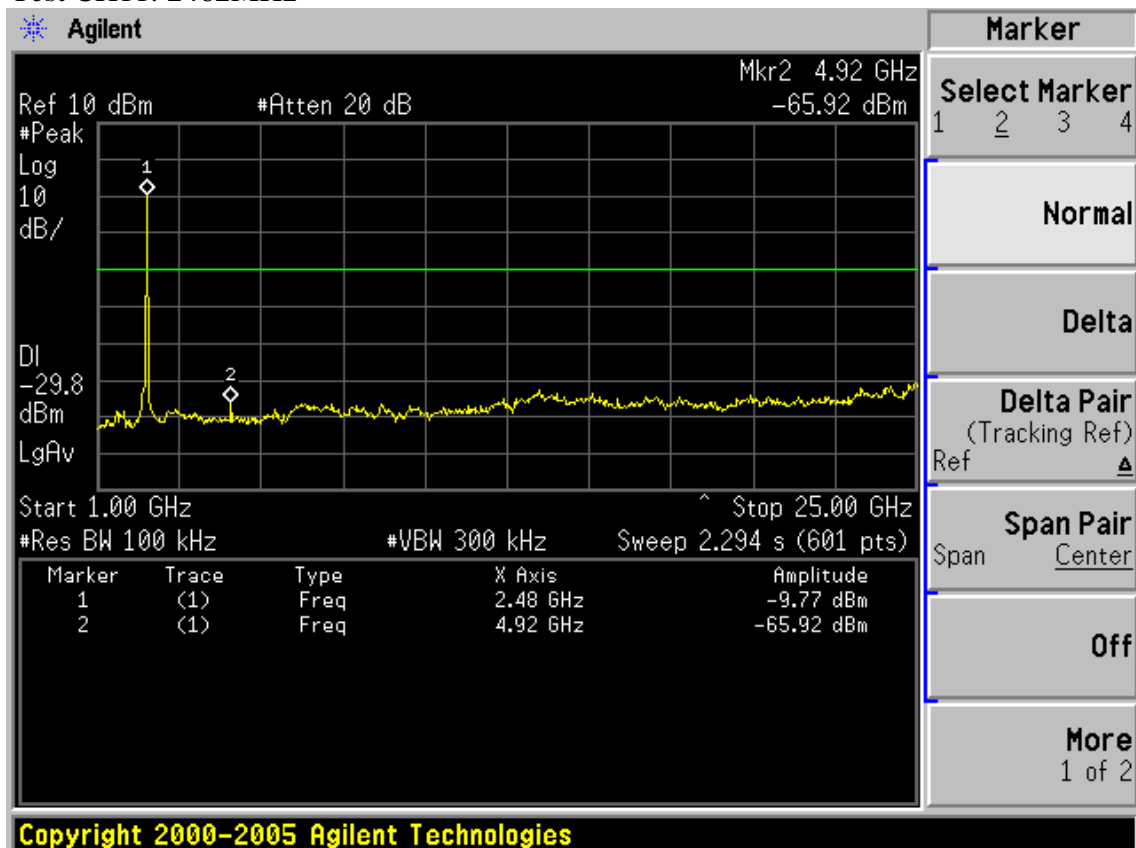


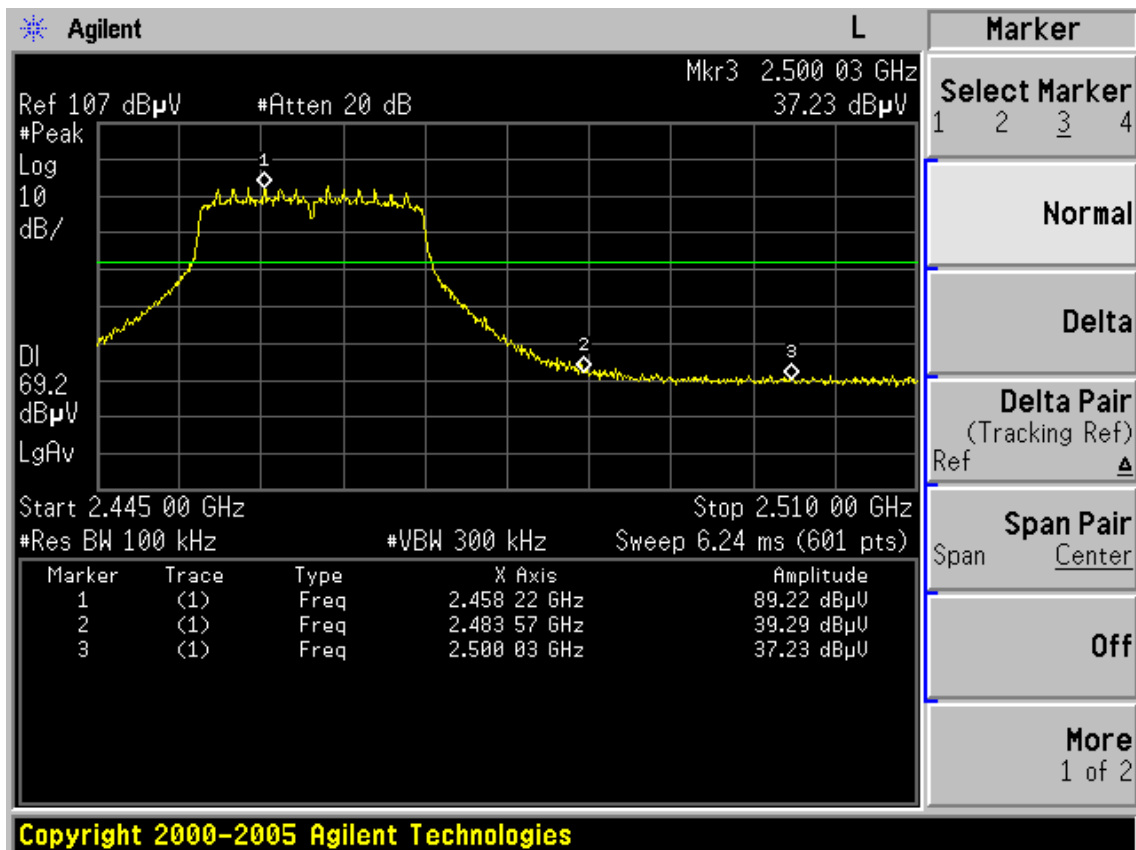
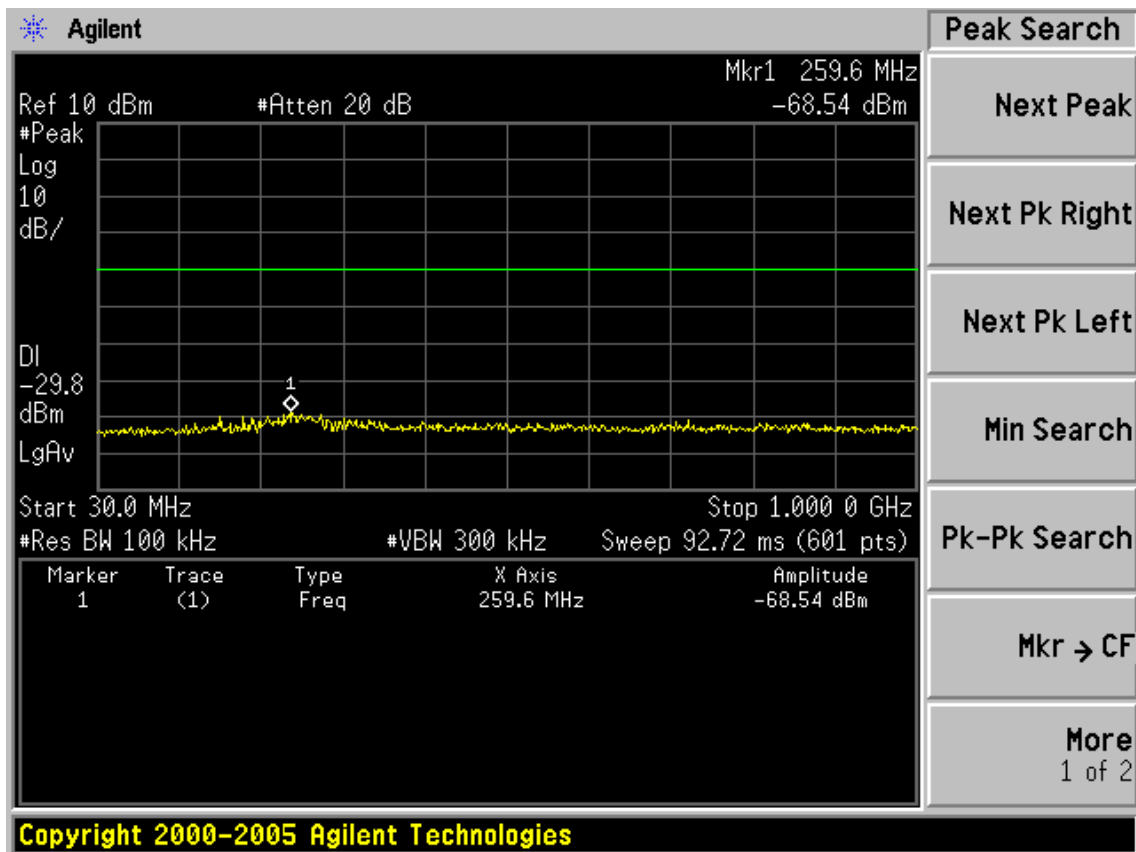
Test CH6: 2437MHz



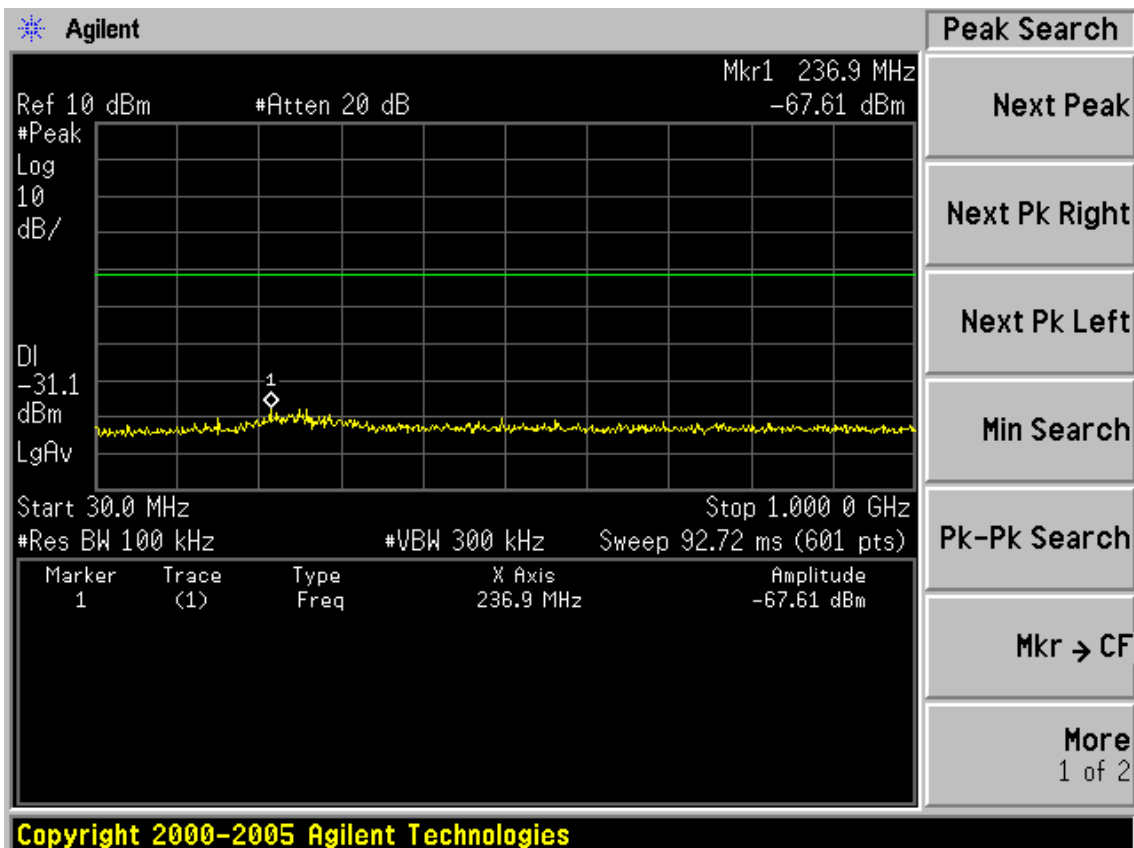
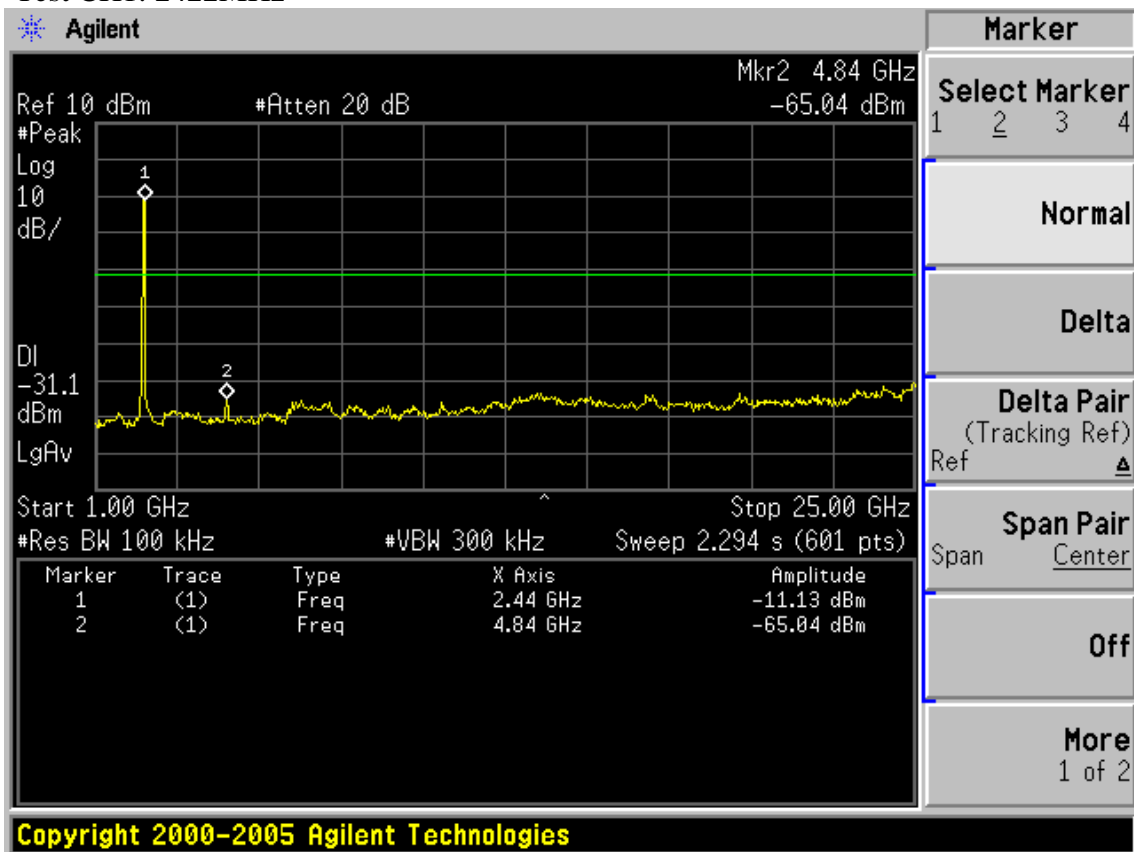


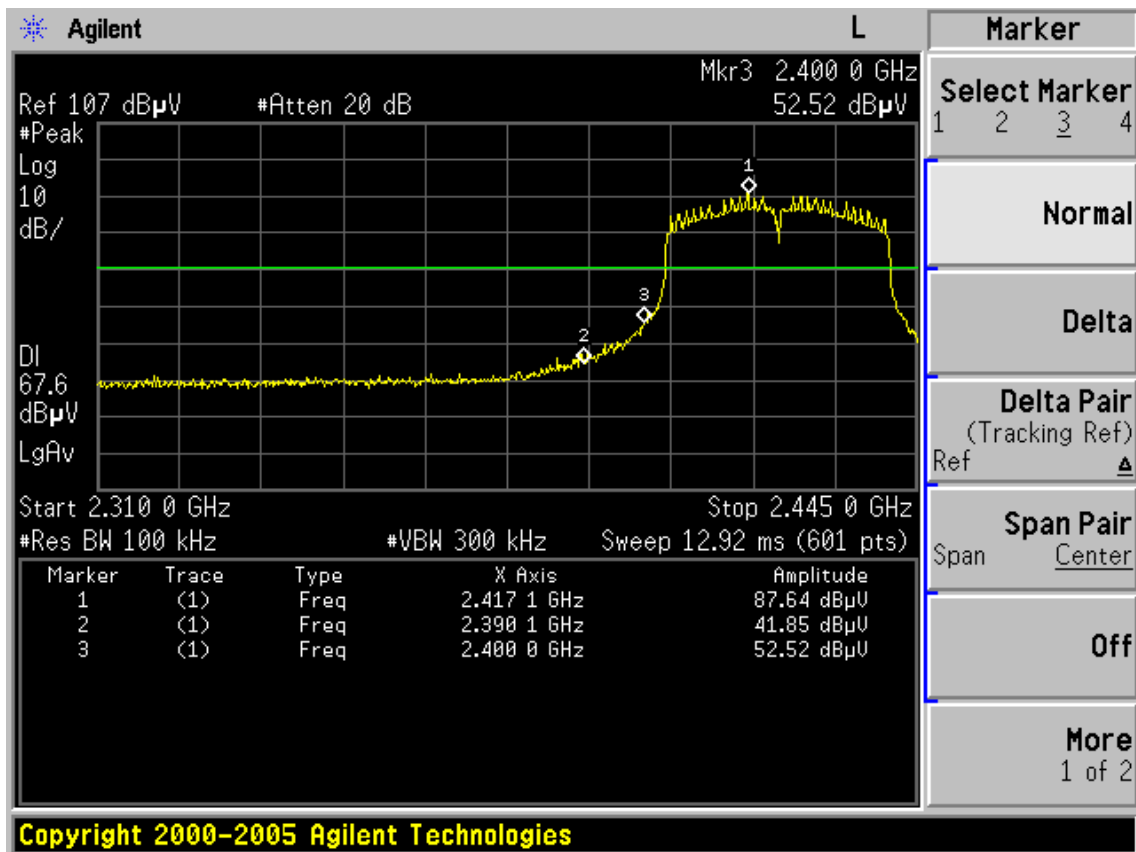
Test CH11: 2462MHz



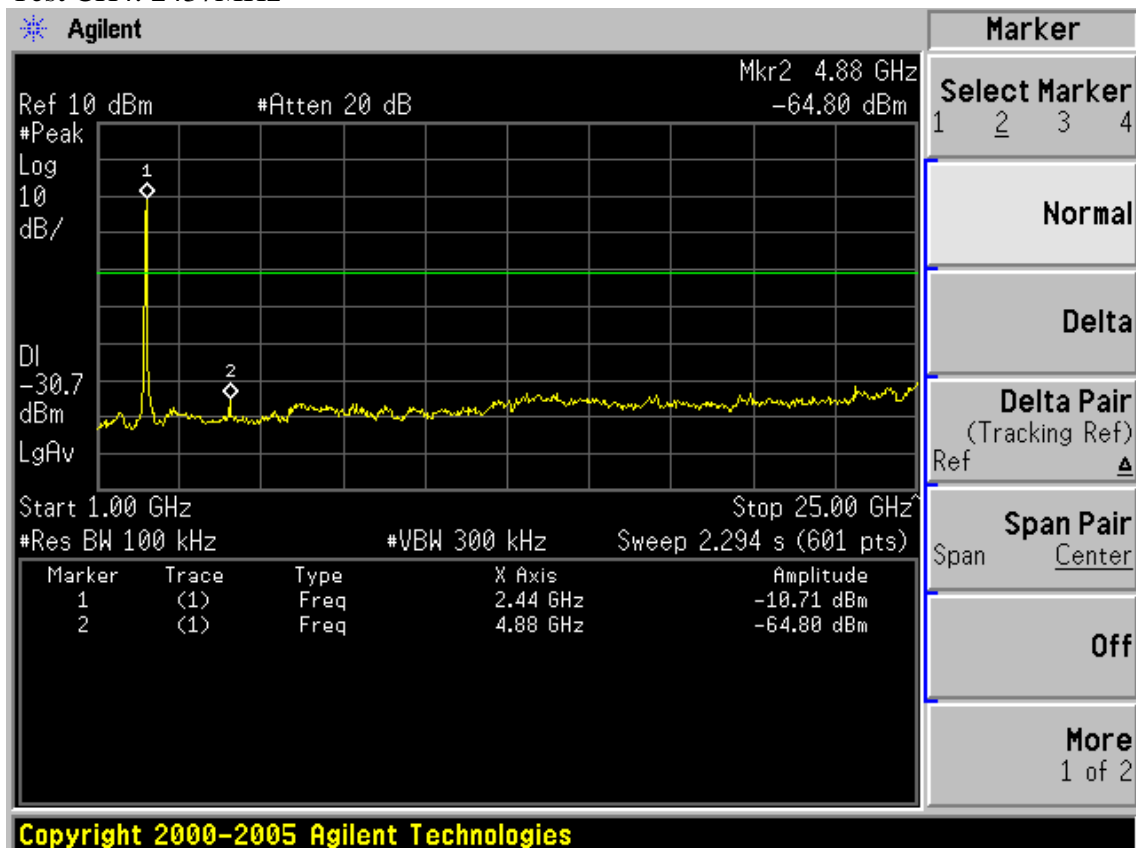


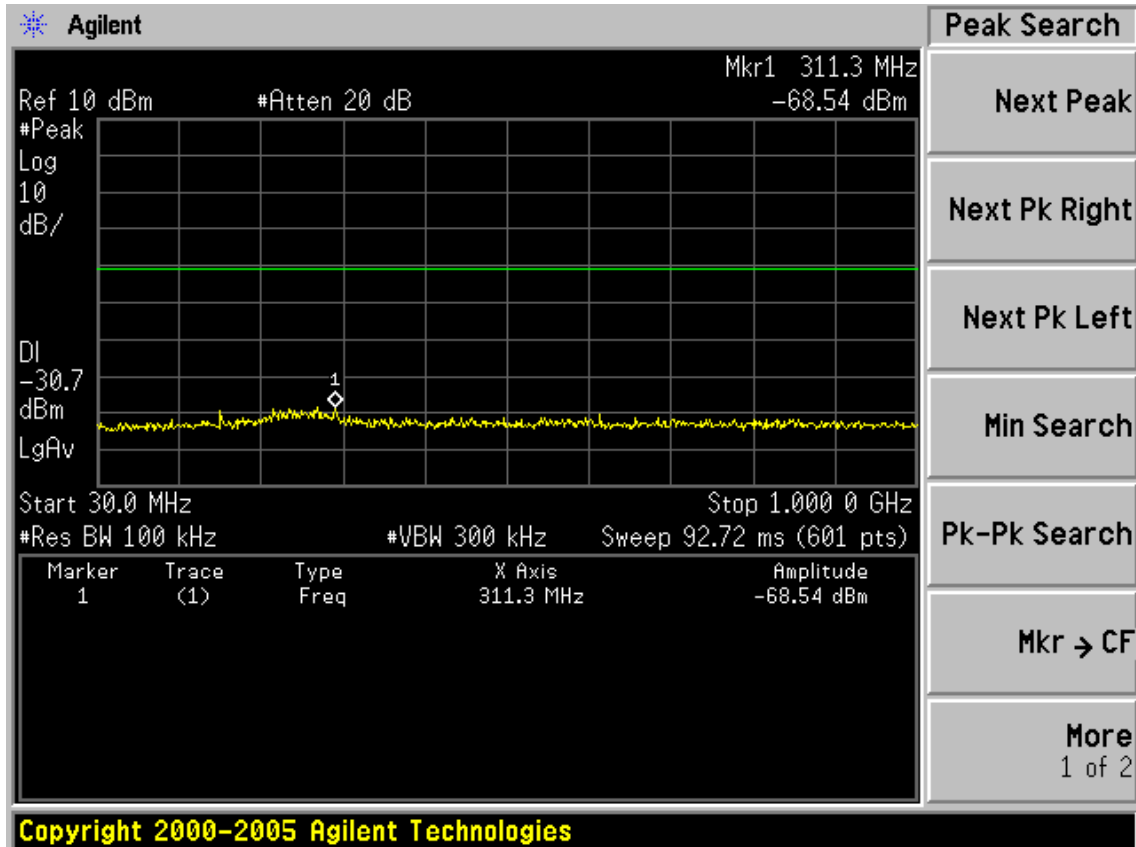
Test Mode: IEEE 802.11n HT40 TX
 Test CH1: 2422MHz



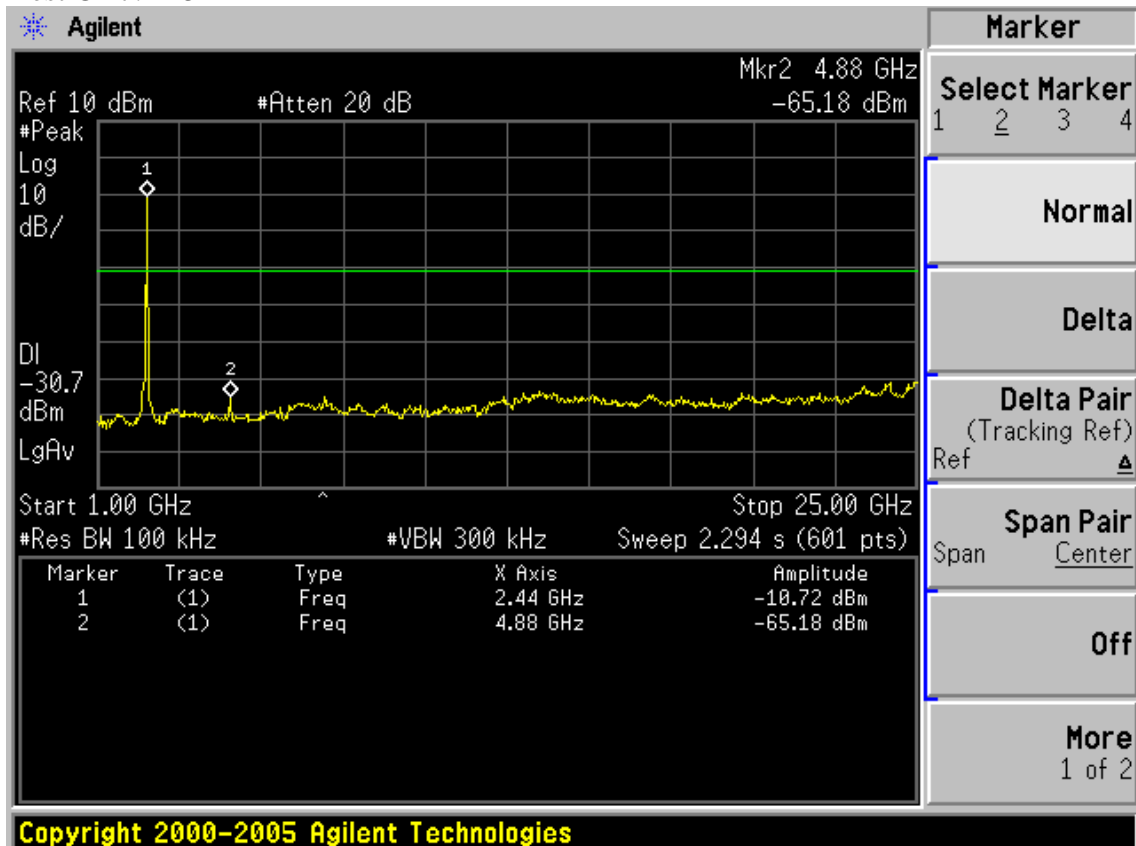


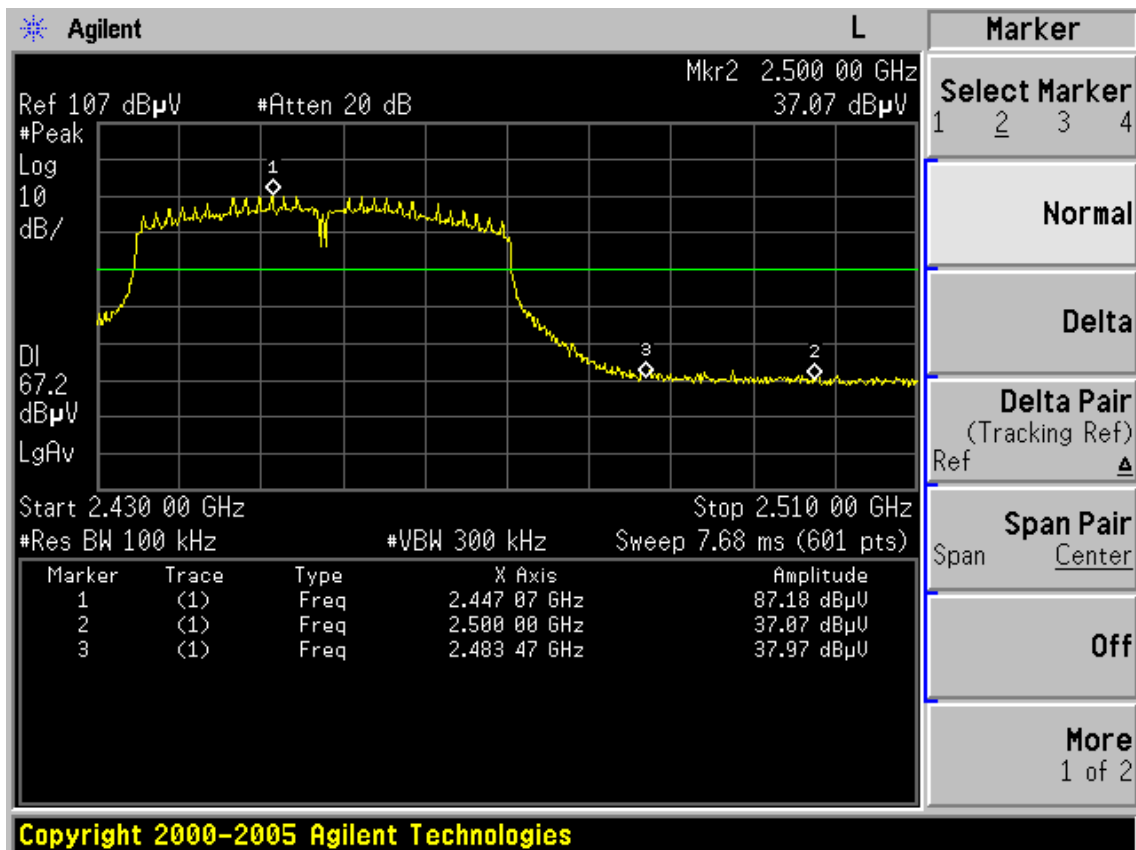
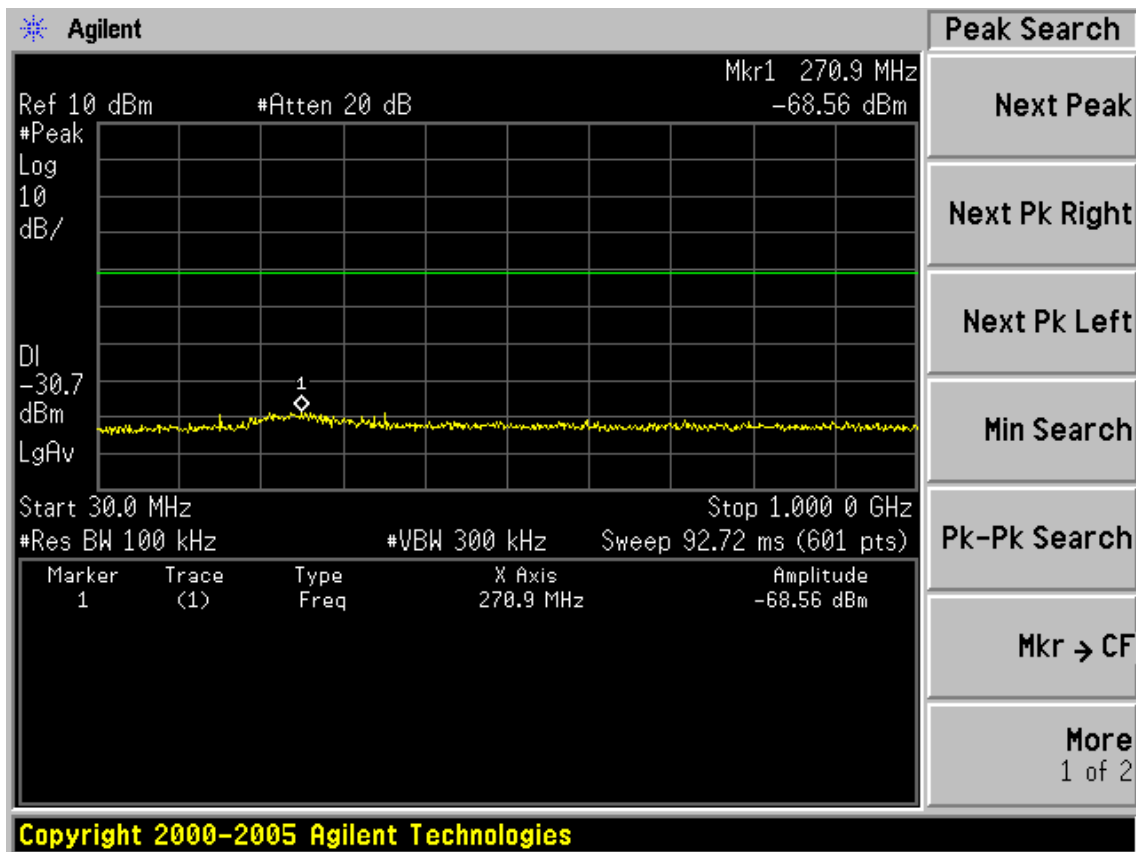
Test CH4: 2437MHz





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	May.27, 08	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

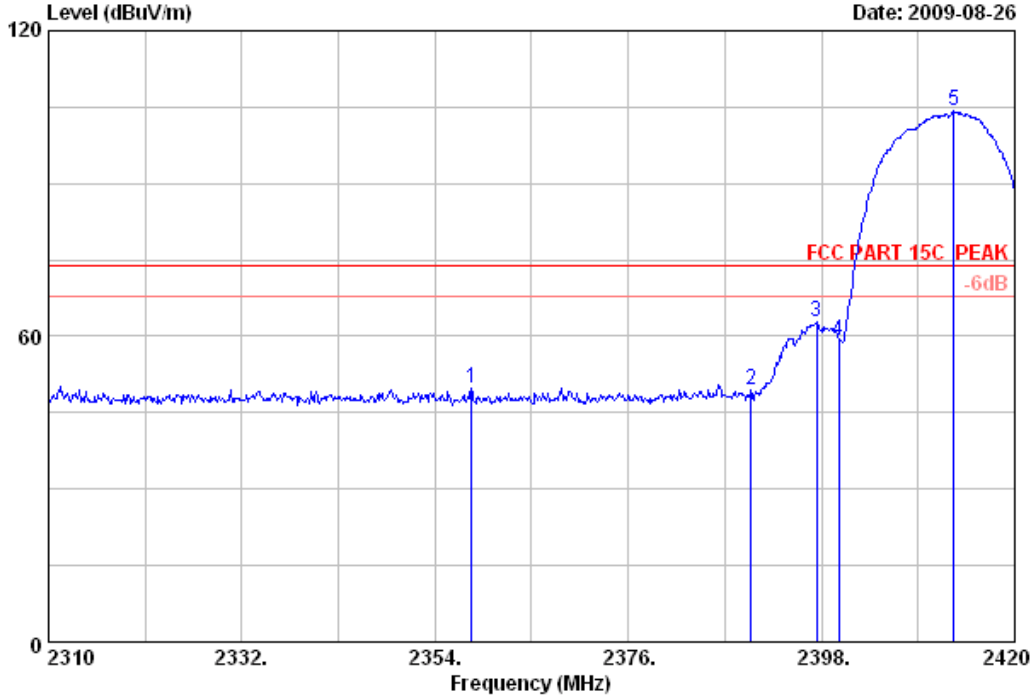
Pass (The testing data was attached in the next pages.)

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 73 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 73
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	2358.180	28.41	8.57	35.91	48.72	49.79	74.00	24.21	Peak
2	2390.000	28.46	8.41	36.09	48.67	49.45	74.00	24.55	Peak
3	2397.450	28.46	8.41	36.09	61.93	62.71	74.00	11.29	Peak
4	2400.000	28.46	8.60	36.09	58.20	59.17	74.00	14.83	Peak
5	2413.070	28.48	8.60	35.95	103.02	104.15	74.00	-30.15	Peak

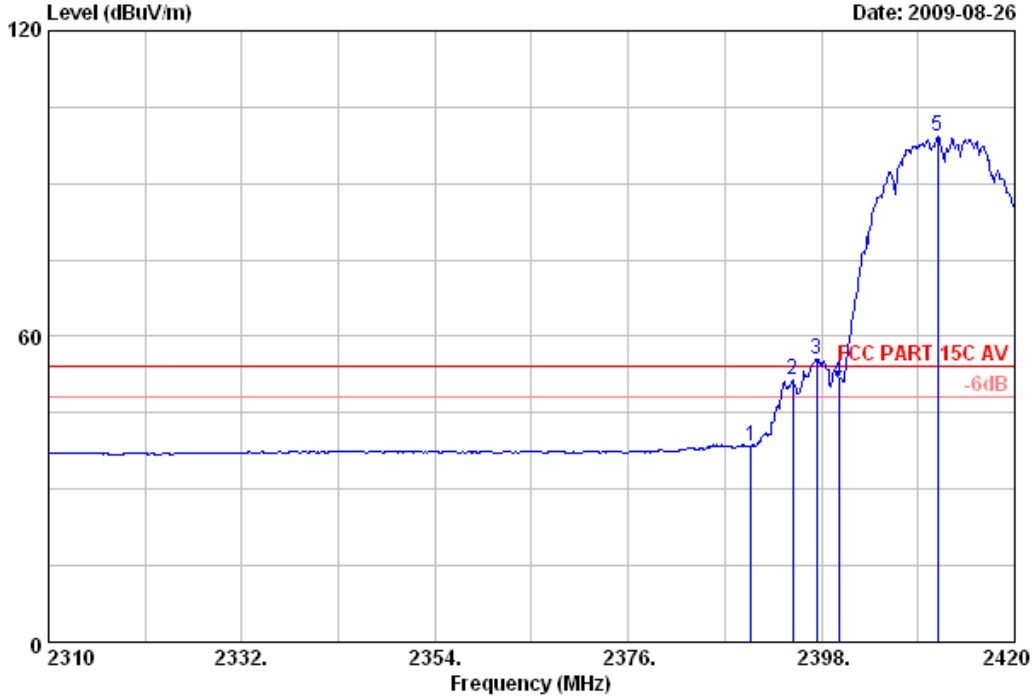
Remarks:

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



No.6 Ke Feng Road,Block 52,
Shenzhen Science & Industry Park
Noutou, Shenzhen, Guangdong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 74 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 74
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	2390.000	28.46	8.41	36.09	37.77	38.55	54.00	15.45	Average
2	2394.700	28.46	8.41	36.09	50.80	51.58	54.00	2.42	Average
3	2397.450	28.46	8.41	36.09	54.79	55.57	54.00	-1.57	Average
4	2400.000	28.46	8.60	36.09	50.11	51.08	54.00	2.92	Average
5	2411.200	28.48	8.60	35.95	98.20	99.33	54.00	-45.33	Average

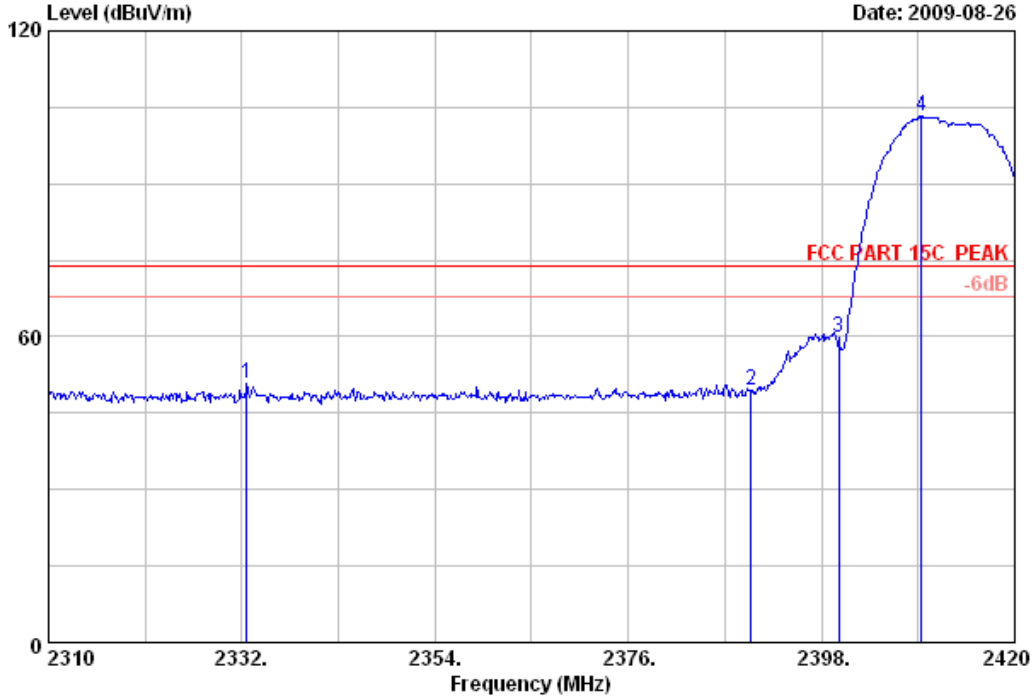
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 75 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 75
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	2332.550	28.36	8.64	36.06	49.93	50.87	74.00	23.13	Peak
2	2390.000	28.46	8.41	36.09	48.59	49.37	74.00	24.63	Peak
3	2400.000	28.46	8.60	36.09	59.02	59.99	74.00	14.01	Peak
4	2409.330	28.48	8.60	35.95	102.07	103.20	74.00	-29.20	Peak

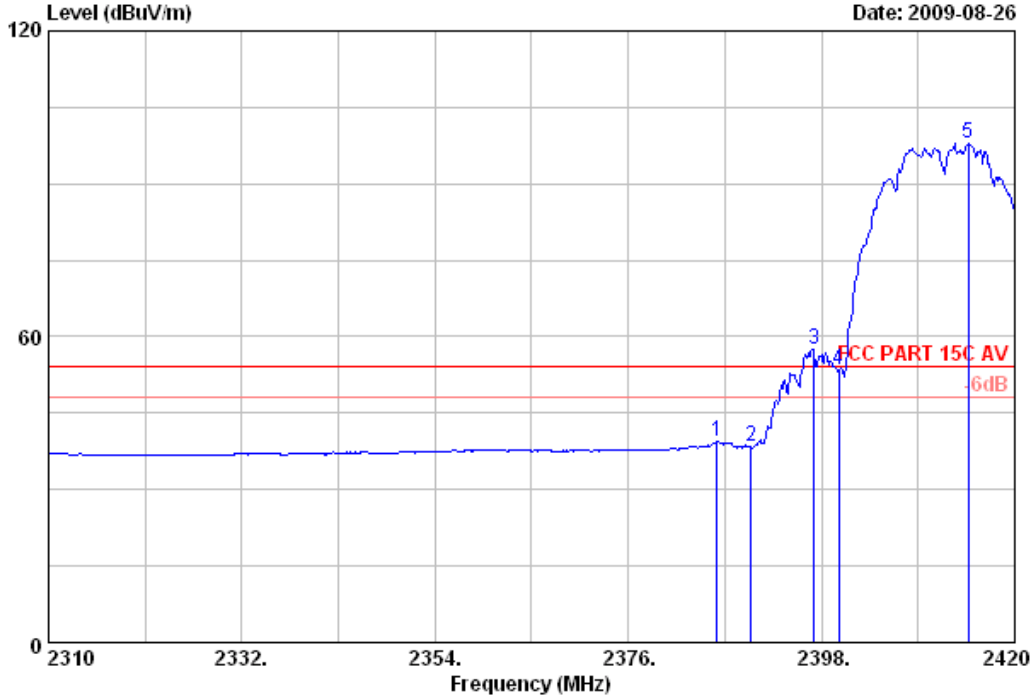
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 76 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 76
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH1 2412MHz

	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	2386.120	28.46	8.41	36.09	38.79	39.57	54.00	14.43	Average
2	2390.000	28.46	8.41	36.09	37.52	38.30	54.00	15.70	Average
3	2397.120	28.46	8.41	36.09	56.74	57.52	54.00	-3.52	Average
4	2400.000	28.46	8.60	36.09	52.64	53.61	54.00	0.39	Average
5	2414.720	28.48	8.60	35.95	96.69	97.82	54.00	-43.82	Average

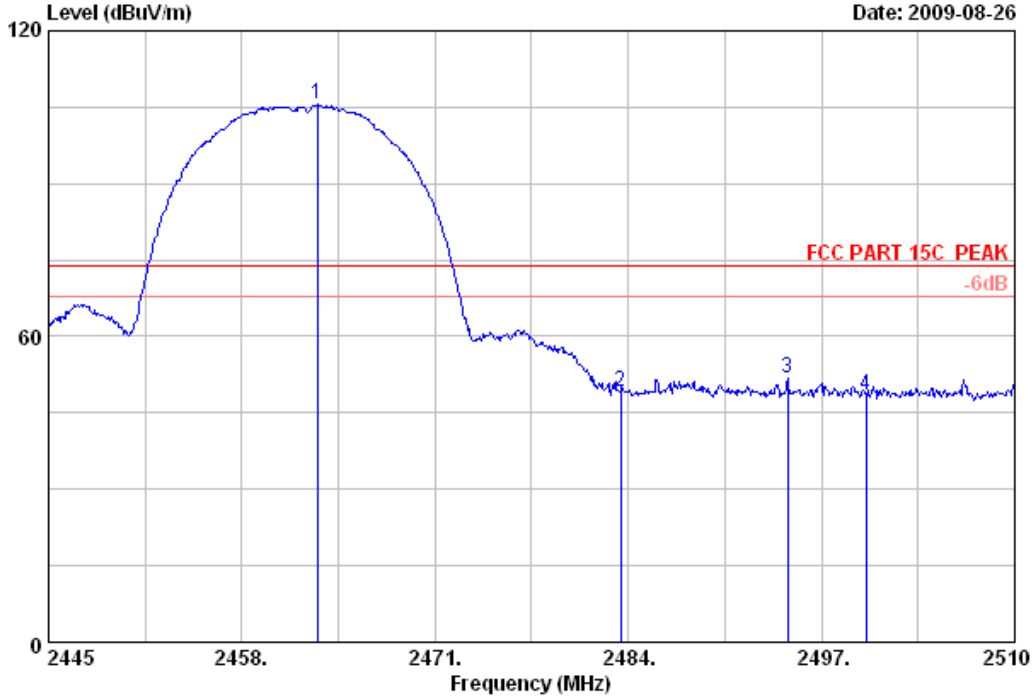
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 77 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 77
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	2463.070	28.55	8.76	36.02	104.21	105.50	74.00	-31.50	Peak
2	2483.500	28.58	8.94	35.97	47.72	49.27	74.00	24.73	Peak
3	2494.725	28.60	8.94	36.00	50.24	51.78	74.00	22.22	Peak
4	2500.000	28.60	8.89	36.00	46.99	48.48	74.00	25.52	Peak

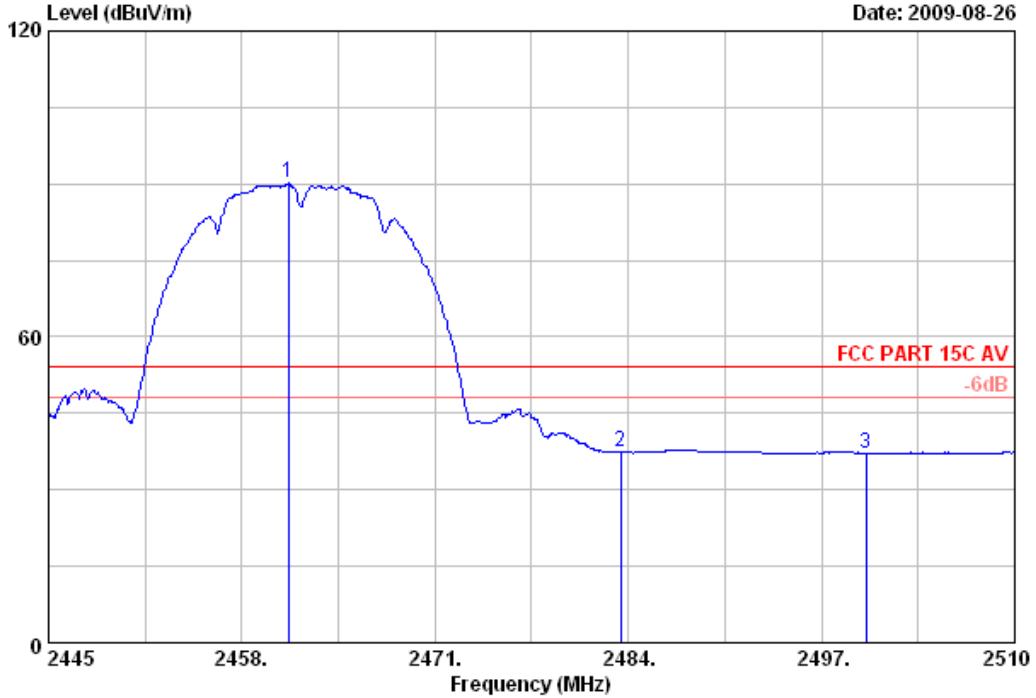
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 78 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 78
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	2461.120	28.55	8.76	36.02	88.81	90.10	54.00	-36.10	Average
2	2483.500	28.58	8.94	35.97	35.82	37.37	54.00	16.63	Average
3	2500.000	28.60	8.89	36.00	35.76	37.25	54.00	16.75	Average

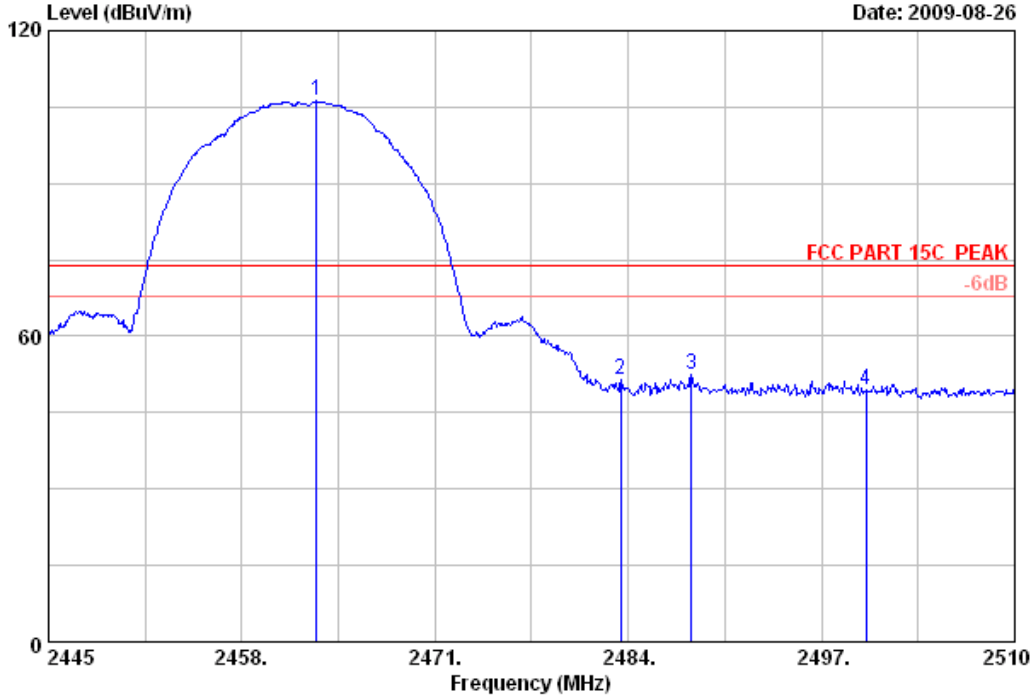
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 79 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 79
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	2463.005	28.55	8.76	36.02	104.93	106.22	74.00	-32.22	Peak
2	2483.500	28.58	8.94	35.97	49.98	51.53	74.00	22.47	Peak
3	2488.225	28.60	8.94	36.00	50.86	52.40	74.00	21.60	Peak
4	2500.000	28.60	8.89	36.00	47.90	49.39	74.00	24.61	Peak

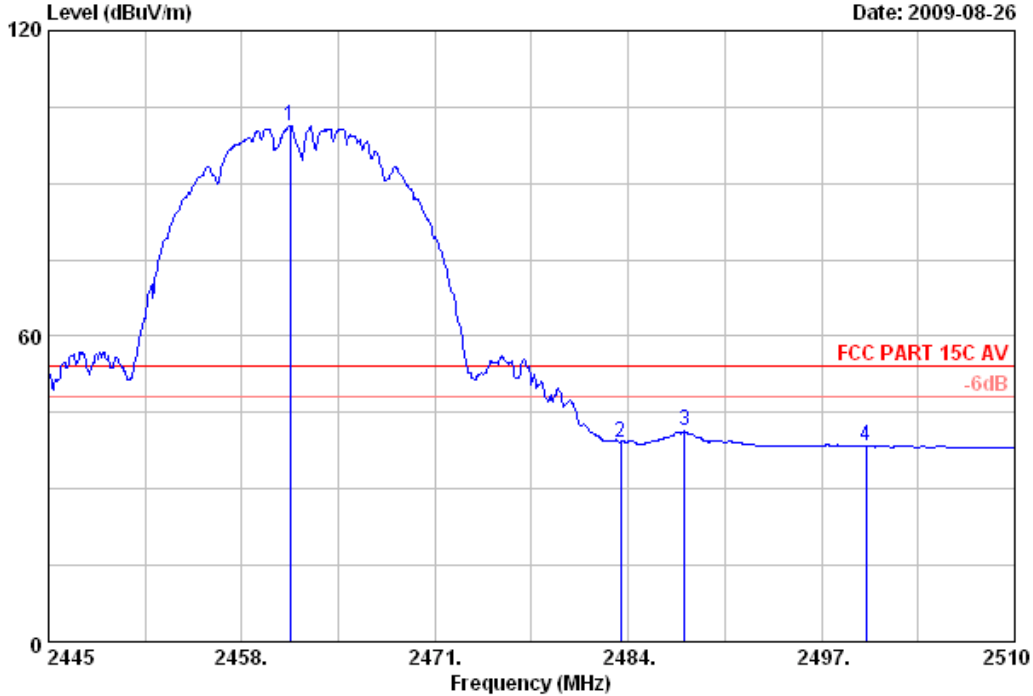
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 80 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 80
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11b CH11 2462MHz

	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	2461.250	28.55	8.76	36.02	100.04	101.33	54.00	-47.33	Average
2	2483.500	28.58	8.94	35.97	37.69	39.24	54.00	14.76	Average
3	2487.770	28.60	8.94	36.00	39.80	41.34	54.00	12.66	Average
4	2500.000	28.60	8.89	36.00	36.97	38.46	54.00	15.54	Average

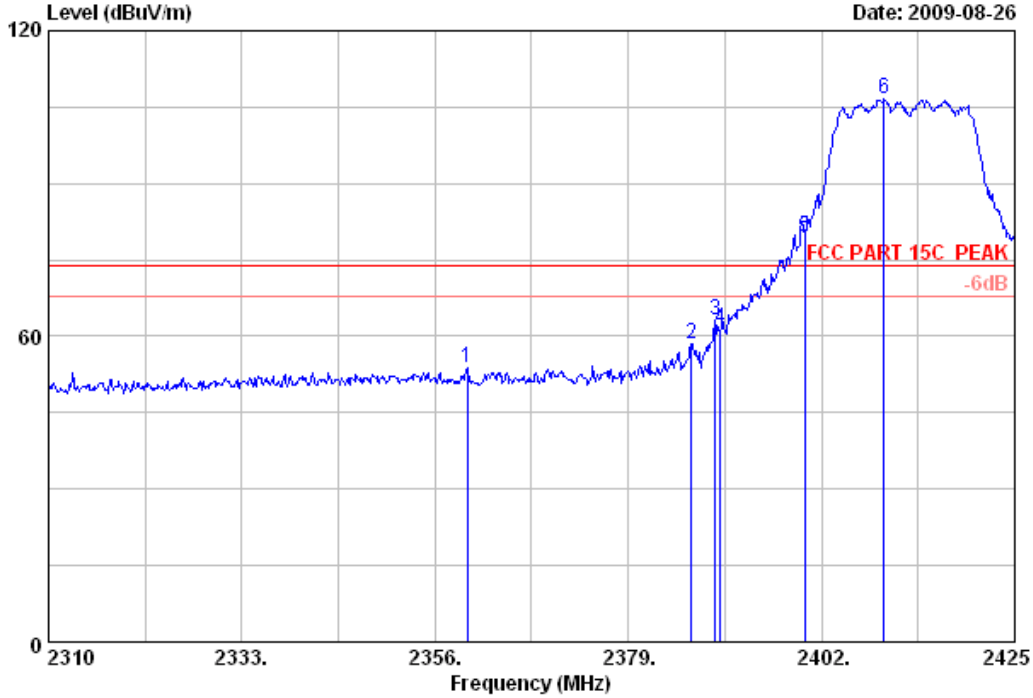
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 81 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 81
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

	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	2359.795	28.41	8.44	35.91	52.92	53.86	74.00	20.14	Peak
2	2386.475	28.46	8.41	36.09	57.76	58.54	74.00	15.46	Peak
3	2389.350	28.46	8.41	36.09	62.51	63.29	74.00	10.71	Peak
4	2390.000	28.46	8.41	36.09	60.83	61.61	74.00	12.39	Peak
5	2400.000	28.46	8.60	36.09	78.66	79.63	74.00	-5.63	Peak
6	2409.475	28.48	8.60	35.95	105.42	106.55	74.00	-32.55	Peak

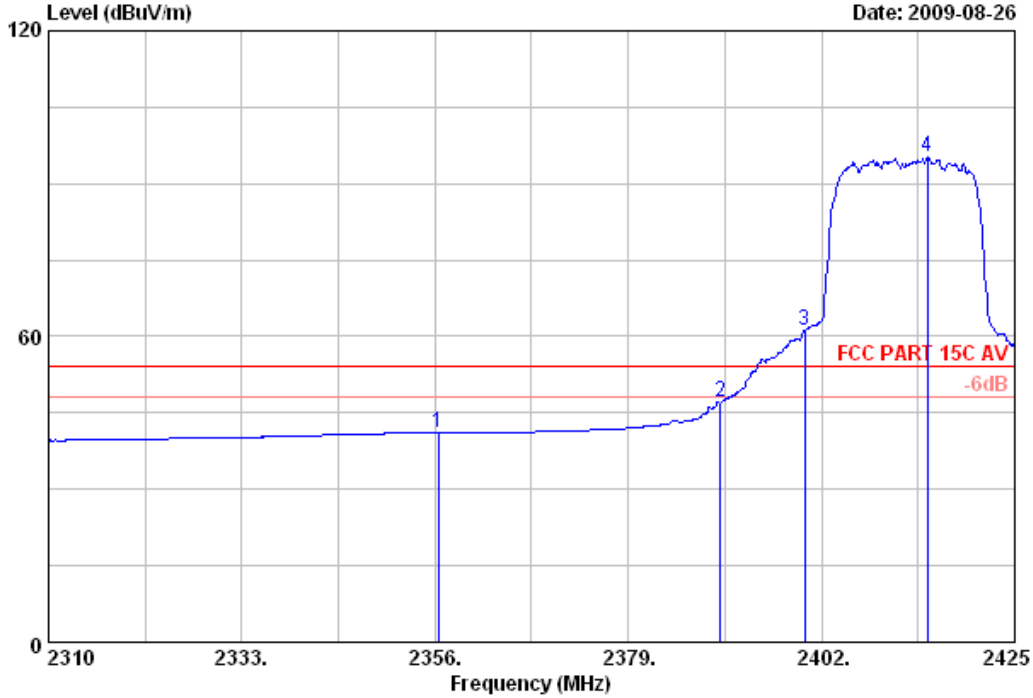
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 82 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 82
 Dis. / Ant. : 3m 3115(O905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

	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	2356.345	28.41	8.57	35.91	40.05	41.12	54.00	12.88	Average
2	2390.000	28.46	8.41	36.09	46.20	46.98	54.00	7.02	Average
3	2400.000	28.46	8.60	36.09	60.22	61.19	54.00	-7.19	Average
4	2414.650	28.48	8.60	35.95	94.07	95.20	54.00	-41.20	Average

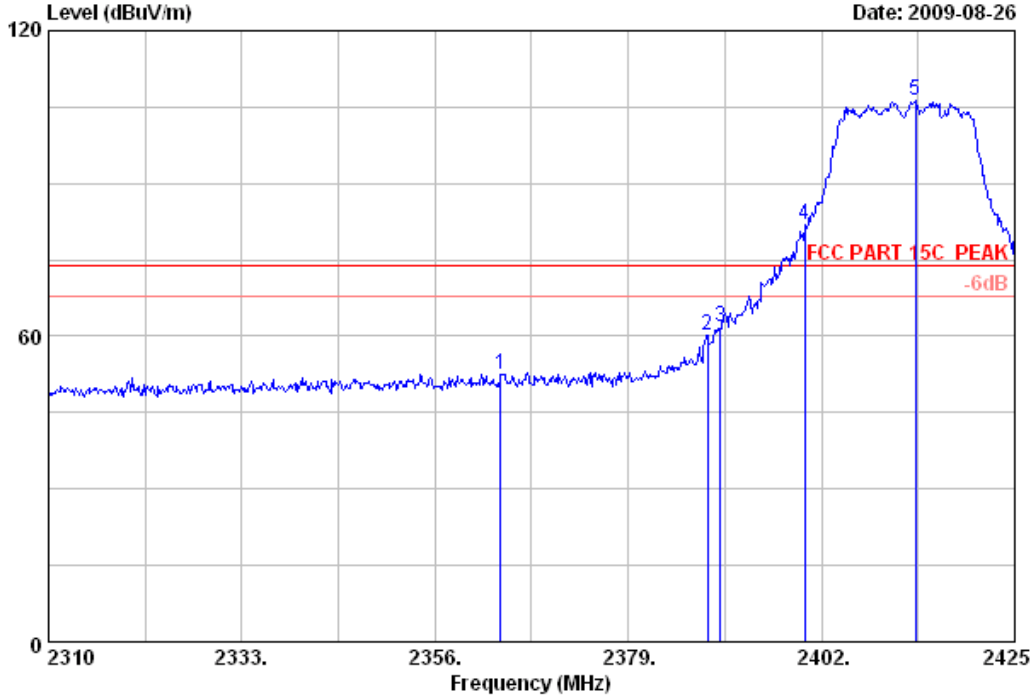
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 83 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 83
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

	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	2363.820	28.41	8.44	35.91	51.63	52.57	74.00	21.43	Peak
2	2388.430	28.46	8.41	36.09	59.49	60.27	74.00	13.73	Peak
3	2390.000	28.46	8.41	36.09	61.09	61.87	74.00	12.13	Peak
4	2400.000	28.46	8.60	36.09	81.03	82.00	74.00	-8.00	Peak
5	2413.155	28.48	8.60	35.95	105.20	106.33	74.00	-32.33	Peak

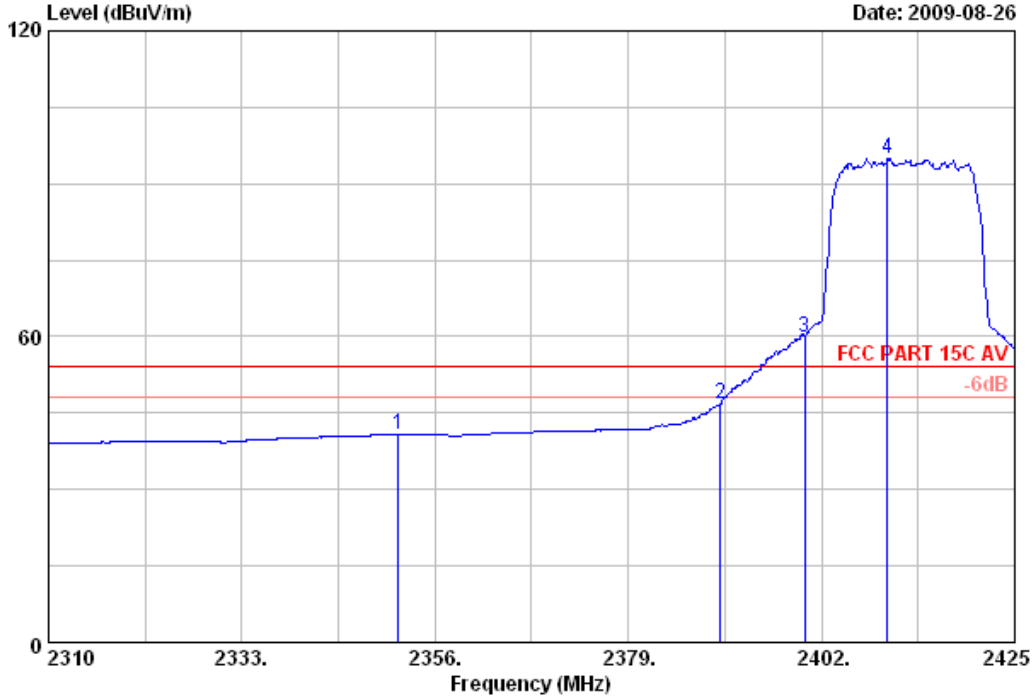
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 84 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 84
 Dis. / Ant. : 3m 3115(O905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH1 2412MHz

	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	2351.630	28.41	8.57	35.91	39.76	40.83	54.00	13.17	Average
2	2390.000	28.46	8.41	36.09	46.17	46.95	54.00	7.05	Average
3	2400.000	28.46	8.60	36.09	59.02	59.99	54.00	-5.99	Average
4	2409.820	28.48	8.60	35.95	93.89	95.02	54.00	-41.02	Average

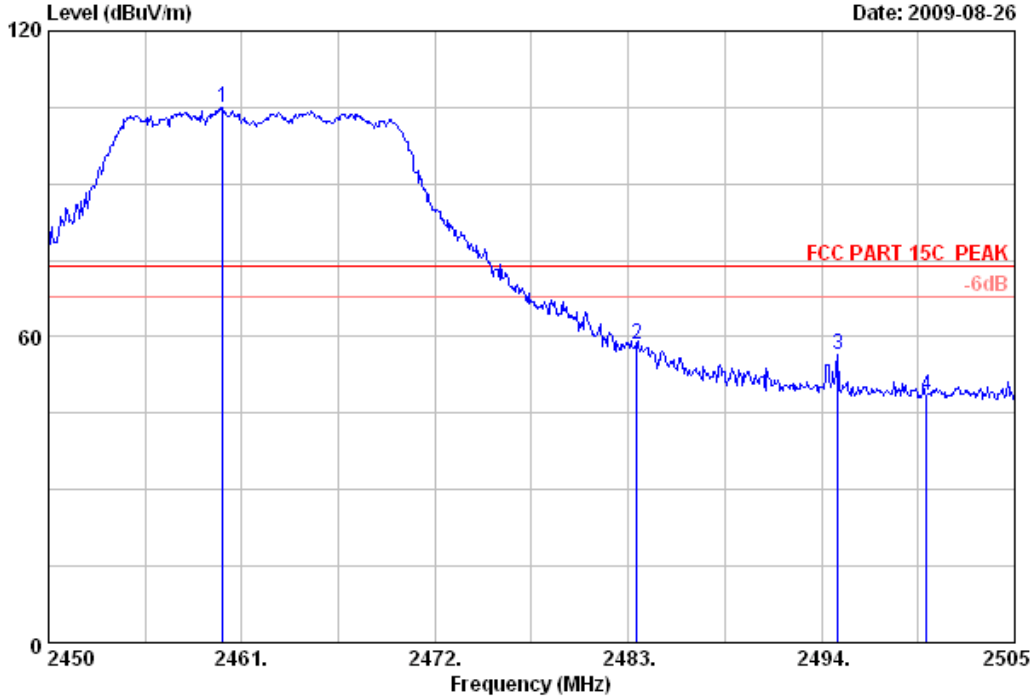
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 85 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 85
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	2459.900	28.55	8.76	36.02	103.67	104.96	74.00	-30.96	Peak
2	2483.500	28.58	8.94	35.97	56.78	58.33	74.00	15.67	Peak
3	2494.935	28.60	8.94	36.00	54.84	56.38	74.00	17.62	Peak
4	2500.000	28.60	8.89	36.00	47.06	48.55	74.00	25.45	Peak

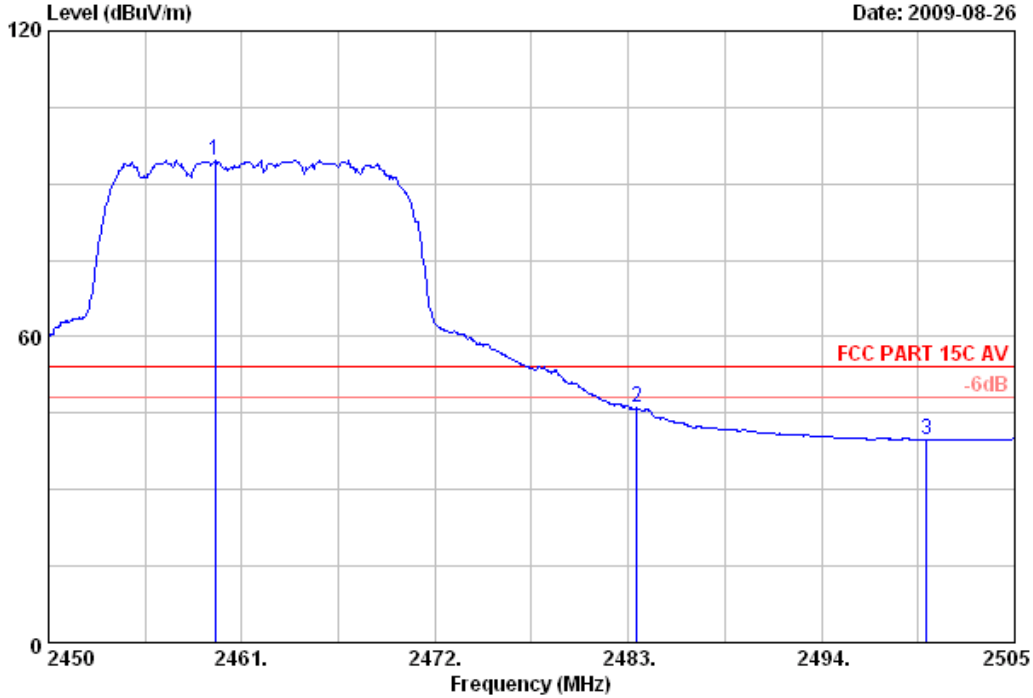
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 86 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 86
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	2459.460	28.55	8.76	36.02	93.28	94.57	54.00	-40.57	Average
2	2483.500	28.58	8.94	35.97	44.42	45.97	54.00	8.03	Average
3	2500.000	28.60	8.89	36.00	38.30	39.79	54.00	14.21	Average

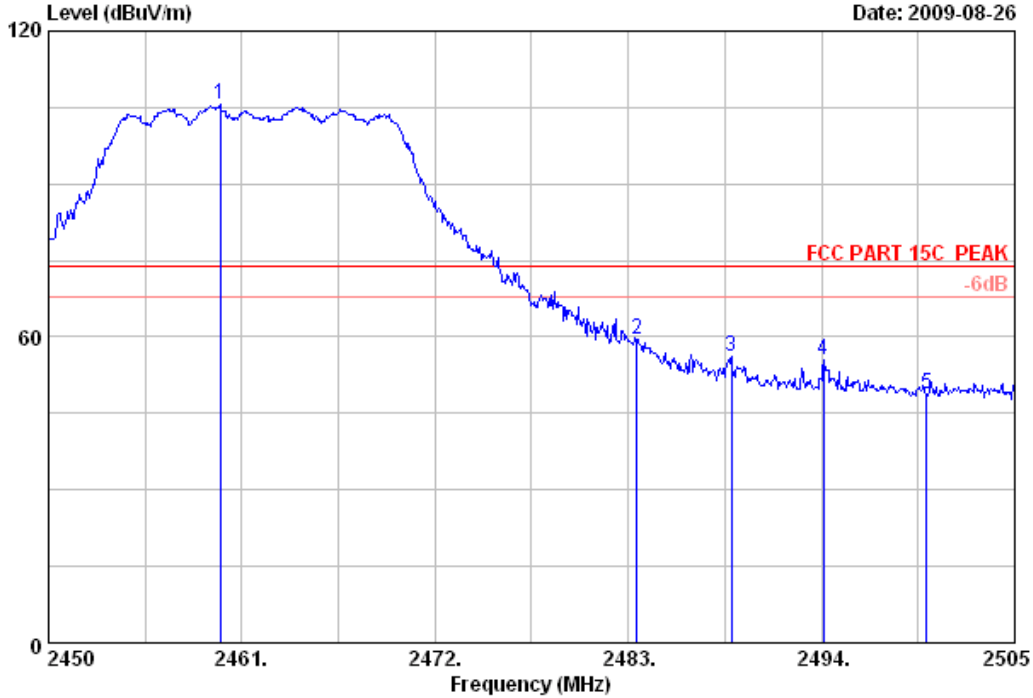
Remarks:

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



No.6 Ke Feng Road,Block 52,
Shenzhen Science & Industry Park
Noutou,Shenzhen,GuangDong,China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 87 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 87
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	2459.790	28.55	8.76	36.02	104.38	105.67	74.00	-31.67	Peak
2	2483.500	28.58	8.94	35.97	57.81	59.36	74.00	14.64	Peak
3	2488.885	28.60	8.94	36.00	54.62	56.16	74.00	17.84	Peak
4	2494.110	28.60	8.94	36.00	53.91	55.45	74.00	18.55	Peak
5	2500.000	28.60	8.89	36.00	47.21	48.70	74.00	25.30	Peak

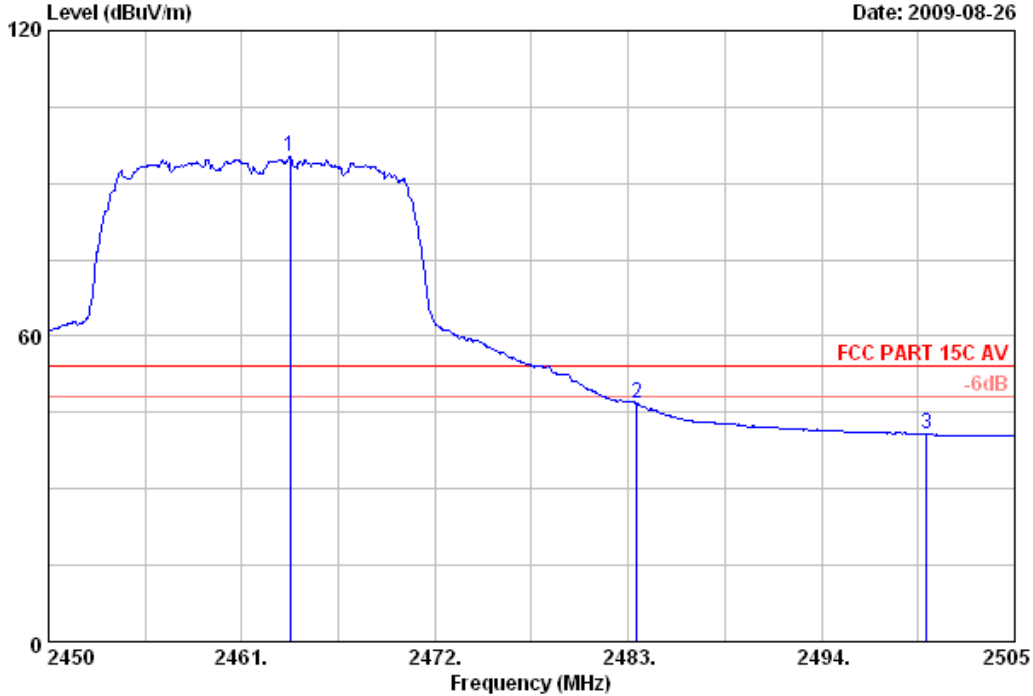
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 88 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 88
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11g CH11 2462MHz

	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	2463.750	28.55	8.76	36.02	94.02	95.31	54.00	-41.31	Average
2	2483.500	28.58	8.94	35.97	45.21	46.76	54.00	7.24	Average
3	2500.000	28.60	8.89	36.00	39.18	40.67	54.00	13.33	Average

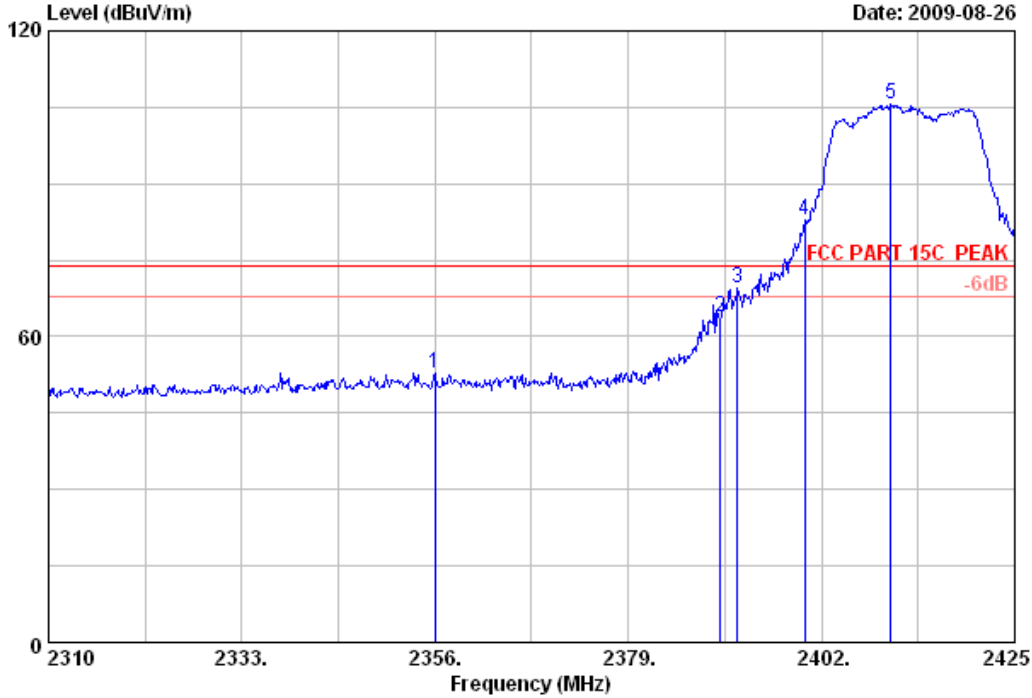
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 89 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 89
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

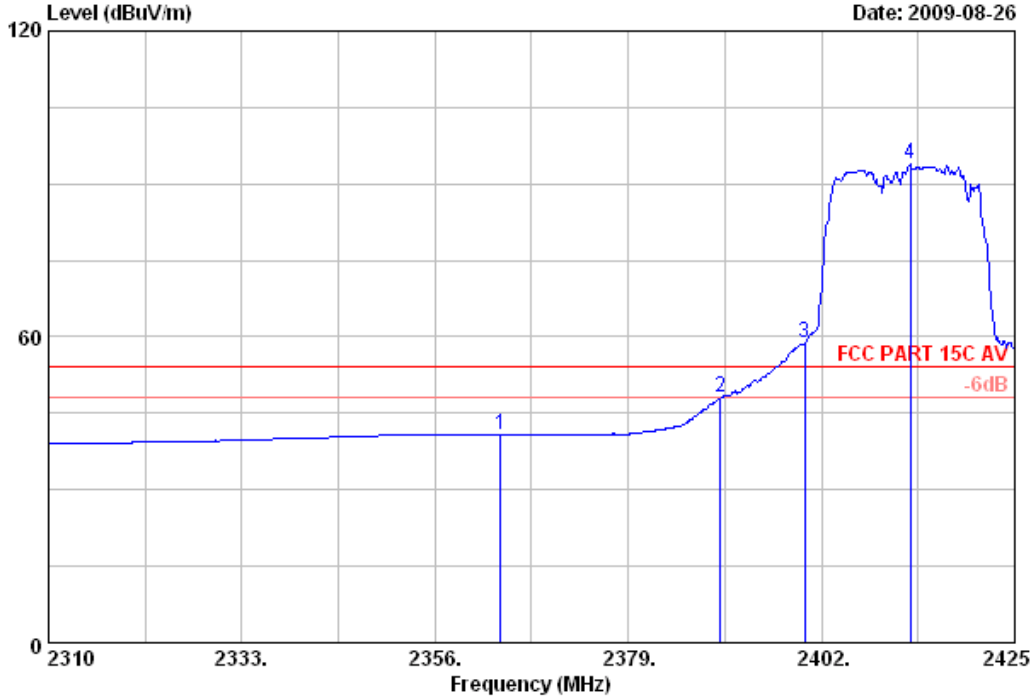
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2356.000	28.41	8.57	35.91	51.67	52.74	74.00	21.26	Peak
2	2390.000	28.46	8.41	36.09	63.00	63.78	74.00	10.22	Peak
3	2391.995	28.46	8.41	36.09	68.61	69.39	74.00	4.61	Peak
4	2400.000	28.46	8.60	36.09	82.01	82.98	74.00	-8.98	Peak
5	2410.280	28.48	8.60	35.95	104.35	105.48	74.00	-31.48	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.



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 90 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 90
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

	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	2363.820	28.41	8.44	35.91	39.98	40.92	54.00	13.08	Average
2	2390.000	28.46	8.41	36.09	47.26	48.04	54.00	5.96	Average
3	2400.000	28.46	8.60	36.09	57.99	58.96	54.00	-4.96	Average
4	2412.580	28.48	8.60	35.95	92.78	93.91	54.00	-39.91	Average

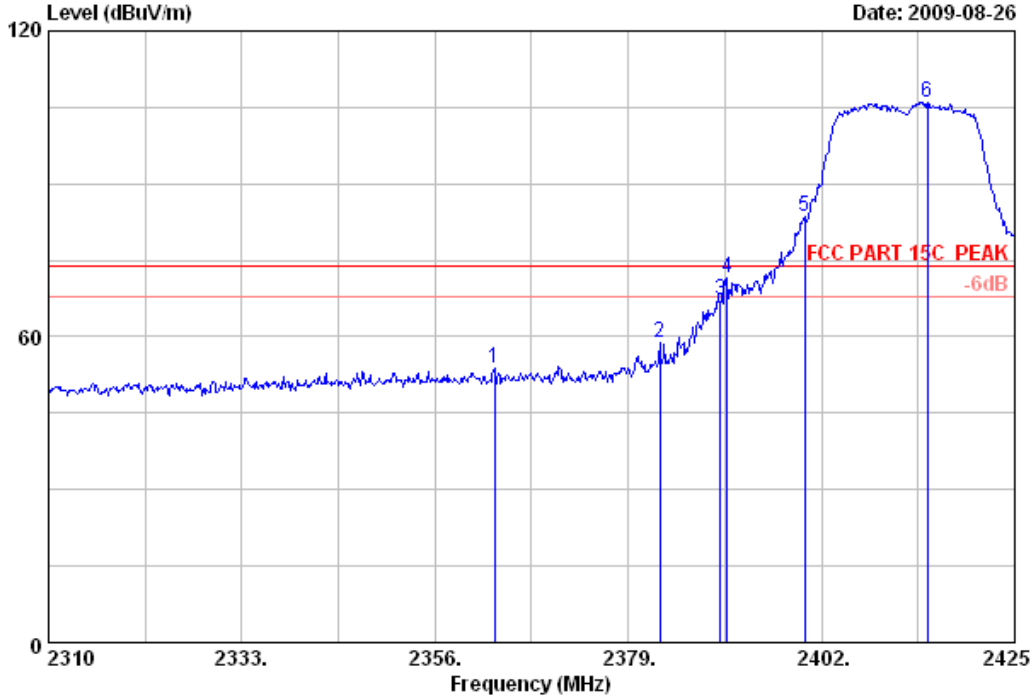
Remarks:

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



No.6 Ke Feng Road,Block 52,
Shenzhen Science & Industry Park
Noutou, Shenzhen, Guangdong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 91 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 91
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

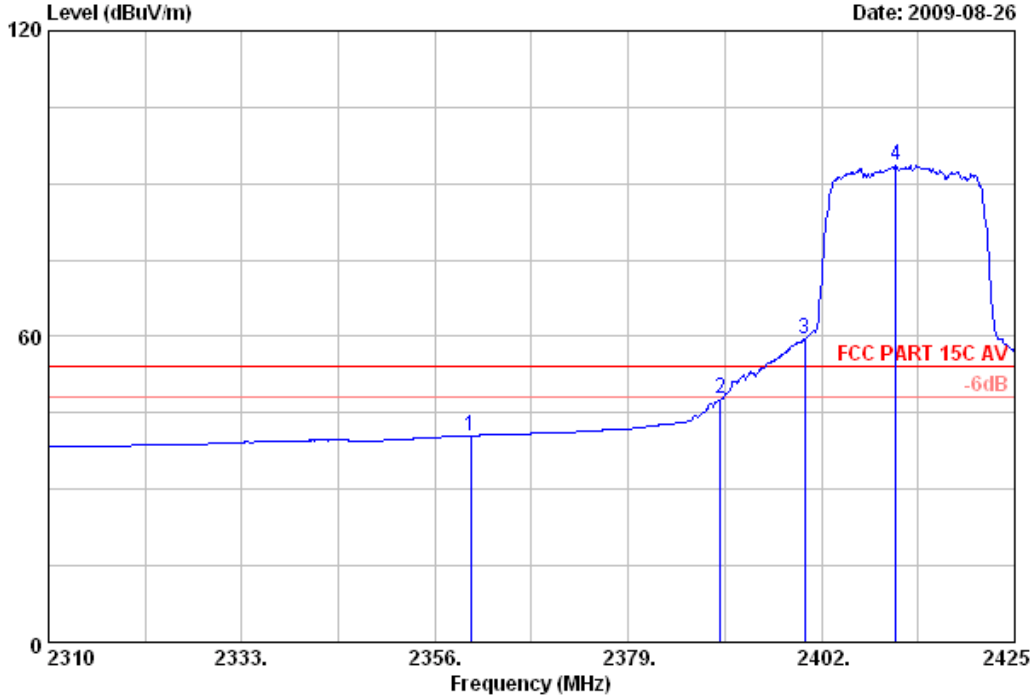
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2363.130	28.41	8.44	35.91	52.75	53.69	74.00	20.31	Peak
2	2382.795	28.43	8.41	36.00	57.90	58.74	74.00	15.26	Peak
3	2390.000	28.46	8.41	36.09	66.48	67.26	74.00	6.74	Peak
4	2390.730	28.46	8.41	36.09	70.70	71.48	74.00	2.52	Peak
5	2400.000	28.46	8.60	36.09	82.59	83.56	74.00	-9.56	Peak
6	2414.650	28.48	8.60	35.95	104.86	105.99	74.00	-31.99	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.



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 92 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 92
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH1 2412MHz

	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	2360.255	28.41	8.44	35.91	39.59	40.53	54.00	13.47	Average
2	2390.000	28.46	8.41	36.09	46.85	47.63	54.00	6.37	Average
3	2400.000	28.46	8.60	36.09	58.65	59.62	54.00	-5.62	Average
4	2410.855	28.48	8.60	35.95	92.54	93.67	54.00	-39.67	Average

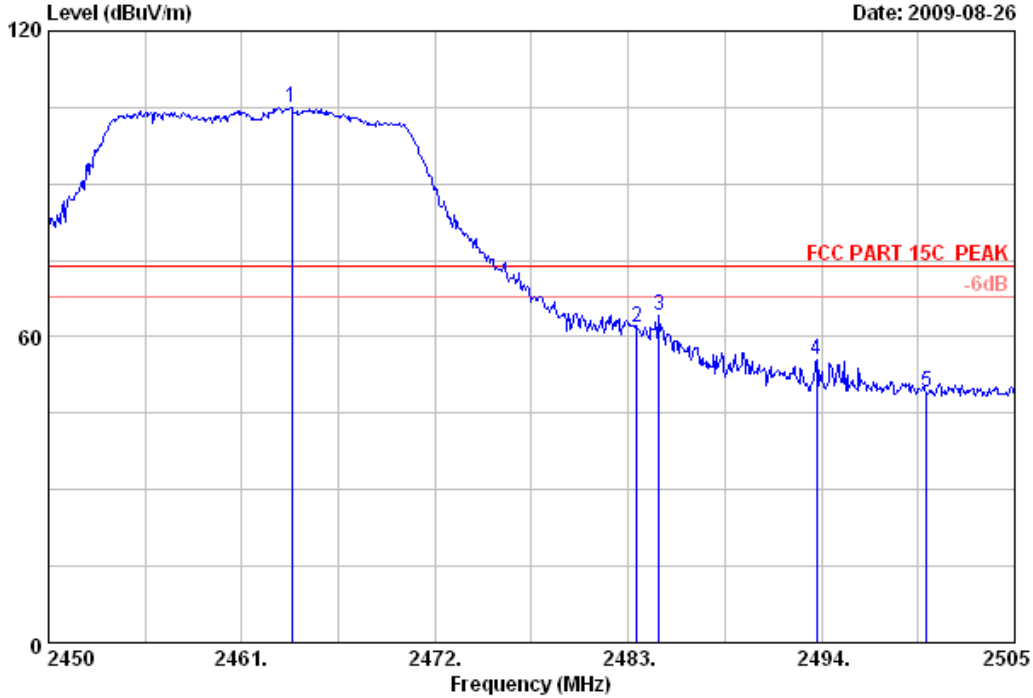
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 93 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 93
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	2463.860	28.55	8.76	36.02	103.76	105.05	74.00	-31.05	Peak
2	2483.500	28.58	8.94	35.97	60.42	61.97	74.00	12.03	Peak
3	2484.760	28.58	8.94	35.97	62.76	64.31	74.00	9.69	Peak
4	2493.725	28.60	8.94	36.00	53.92	55.46	74.00	18.54	Peak
5	2500.000	28.60	8.89	36.00	47.49	48.98	74.00	25.02	Peak

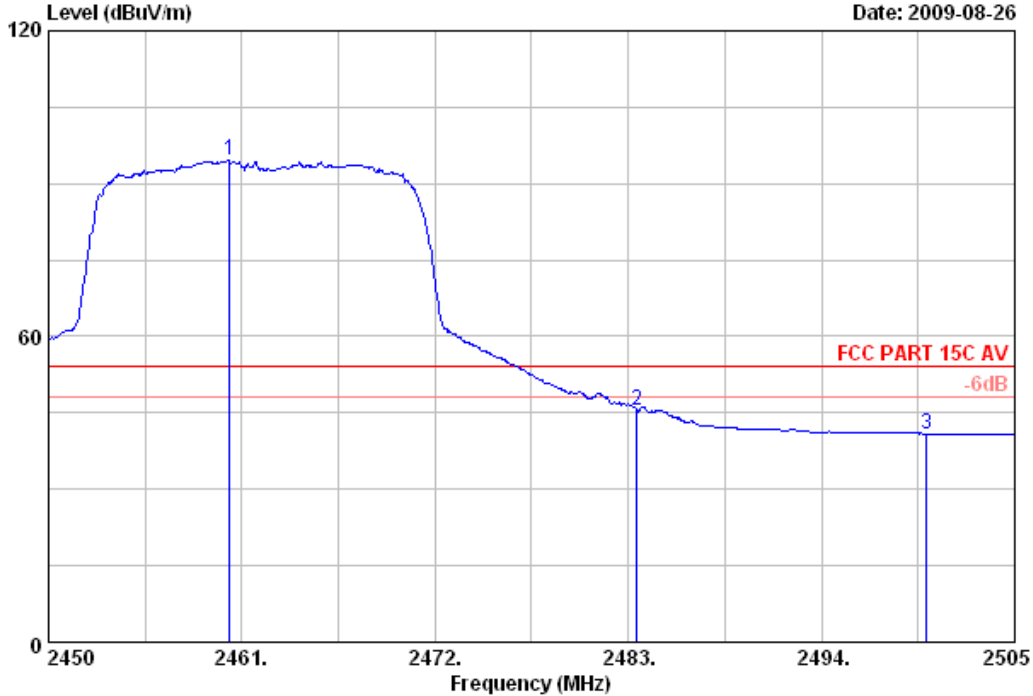
Remarks:

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



No.6 Ke Feng Road,Block 52,
 ShenZhen Science & Industry Park
 Noutou, ShenZhen, GuangDong, China
 Tel:+86-755-26639495-7
 Fax:+86-755-26632877
 Postcode:518057

Data: 94 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 94
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	2460.285	28.55	8.76	36.02	93.25	94.54	54.00	-40.54	Average
2	2483.500	28.58	8.94	35.97	43.97	45.52	54.00	8.48	Average
3	2500.000	28.60	8.89	36.00	39.39	40.88	54.00	13.12	Average

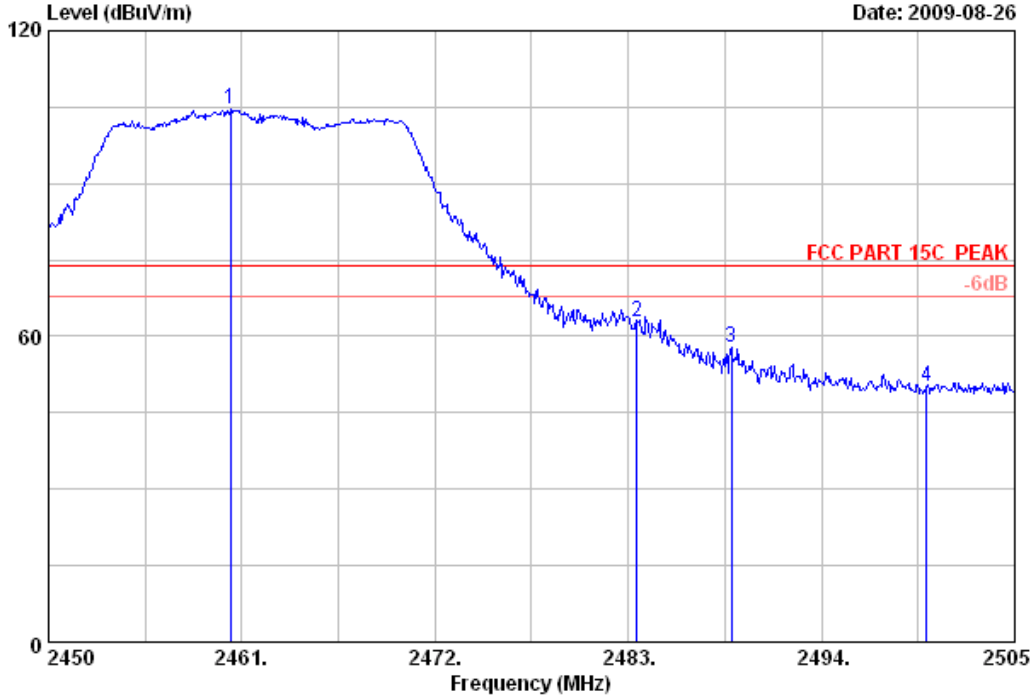
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 95 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 95
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	2460.340	28.55	8.76	36.02	103.18	104.47	74.00	-30.47	Peak
2	2483.500	28.58	8.94	35.97	61.41	62.96	74.00	11.04	Peak
3	2488.885	28.60	8.94	36.00	56.19	57.73	74.00	16.27	Peak
4	2500.000	28.60	8.89	36.00	48.49	49.98	74.00	24.02	Peak

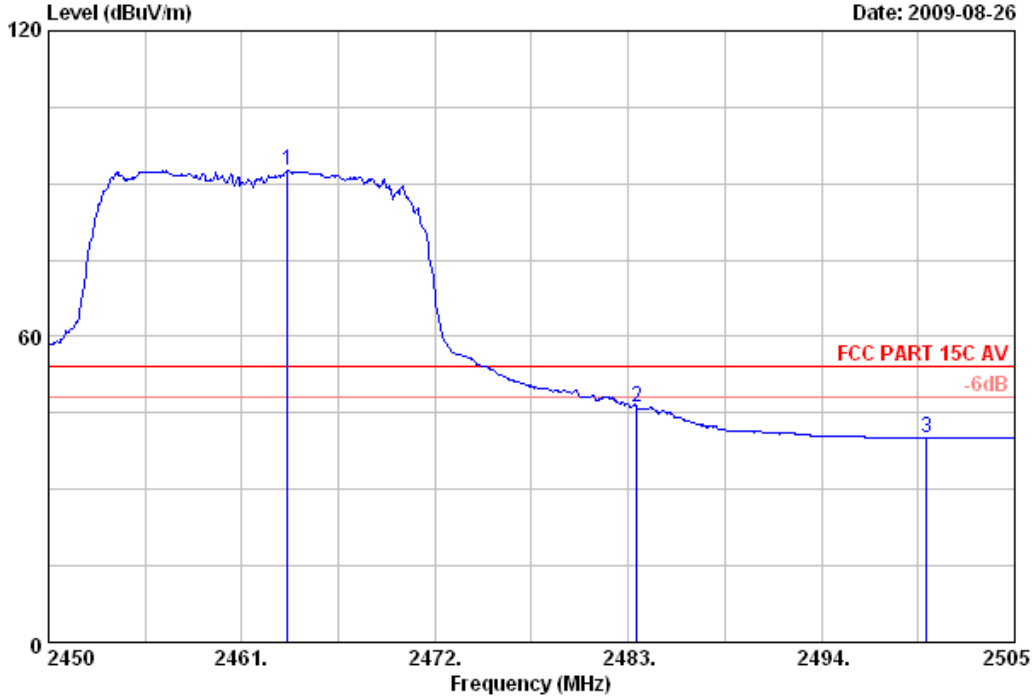
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 96 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 96
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT20 CH11 2462MHz

	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	2463.585	28.55	8.76	36.02	91.40	92.69	54.00	-38.69	Average
2	2483.500	28.58	8.94	35.97	44.66	46.21	54.00	7.79	Average
3	2500.000	28.60	8.89	36.00	38.60	40.09	54.00	13.91	Average

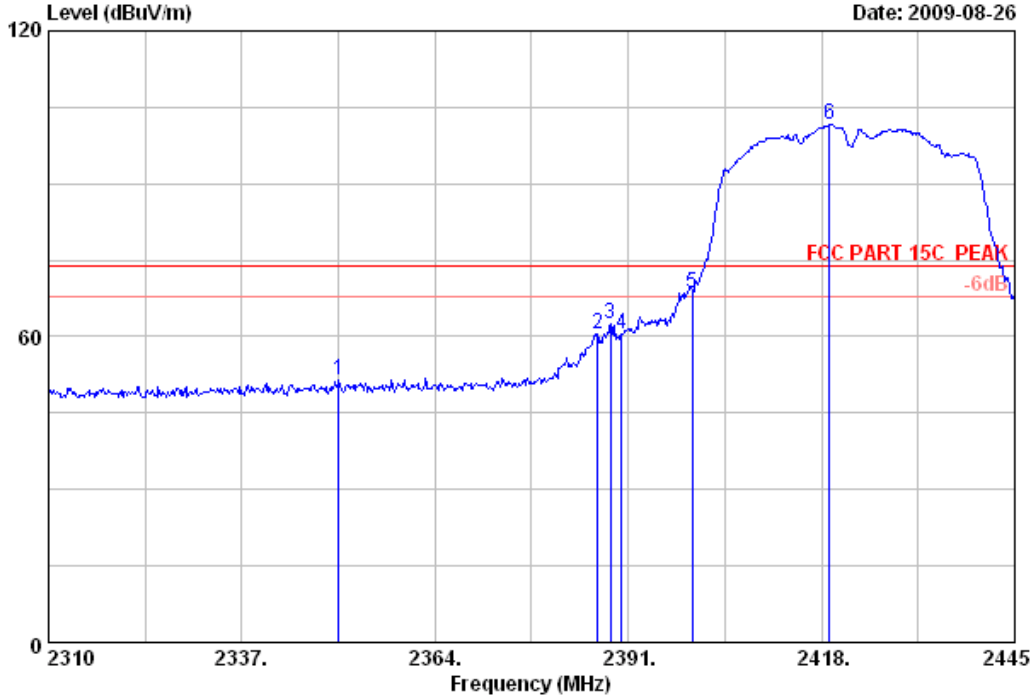
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 97 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 97
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	2350.500	28.38	8.57	35.99	50.54	51.50	74.00	22.50	Peak
2	2386.680	28.46	8.41	36.09	59.76	60.54	74.00	13.46	Peak
3	2388.570	28.46	8.41	36.09	61.72	62.50	74.00	11.50	Peak
4	2390.000	28.46	8.41	36.09	59.78	60.56	74.00	13.44	Peak
5	2400.000	28.46	8.60	36.09	67.39	68.36	74.00	5.64	Peak
6	2419.080	28.48	8.60	35.95	100.52	101.65	74.00	-27.65	Peak

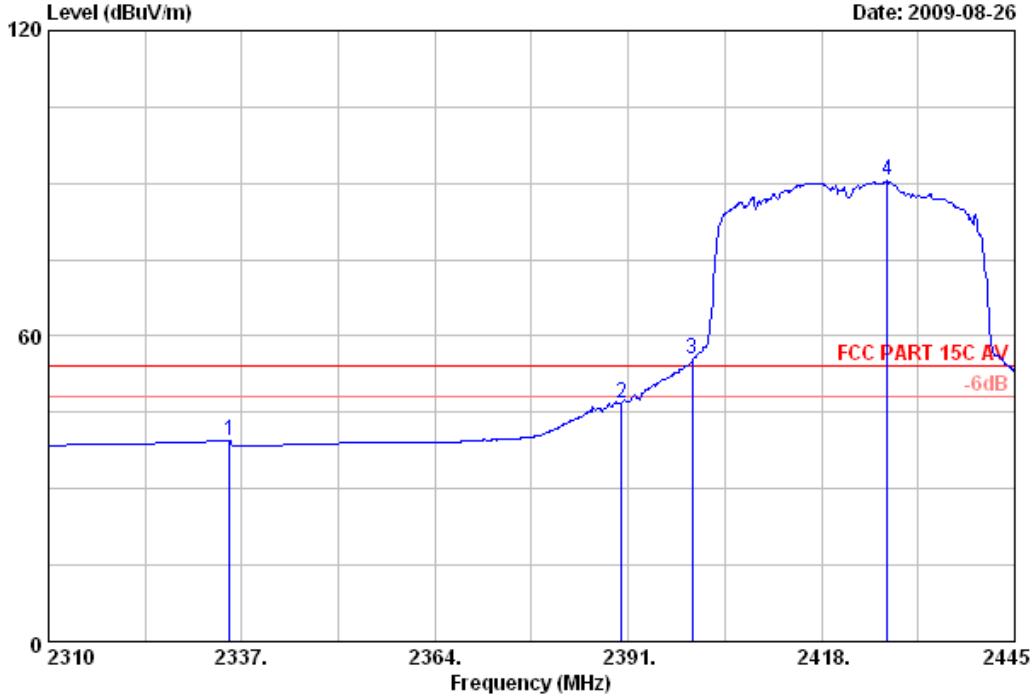
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 98 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 98
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	2335.245	28.38	8.64	35.99	38.36	39.39	54.00	14.61	Average
2	2390.000	28.46	8.41	36.09	46.14	46.92	54.00	7.08	Average
3	2400.000	28.46	8.60	36.09	54.37	55.34	54.00	-1.34	Average
4	2427.180	28.50	8.60	36.01	89.50	90.59	54.00	-36.59	Average

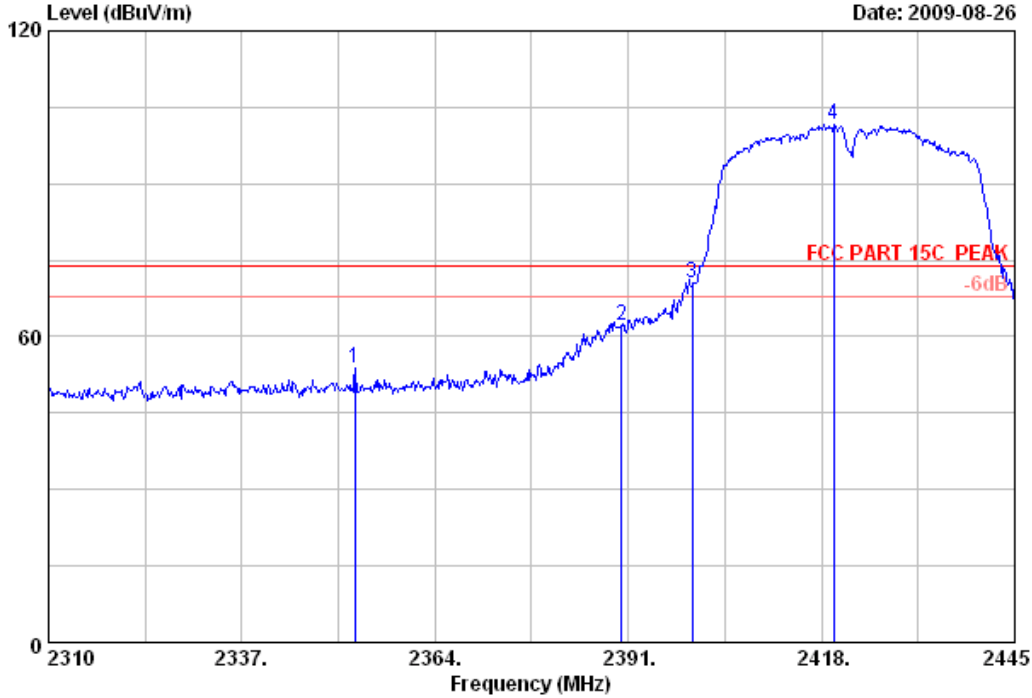
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 99 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 99
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	2352.795	28.41	8.57	35.91	52.66	53.73	74.00	20.27	Peak
2	2390.000	28.46	8.41	36.09	61.29	62.07	74.00	11.93	Peak
3	2400.000	28.46	8.60	36.09	69.52	70.49	74.00	3.51	Peak
4	2419.755	28.50	8.60	36.01	100.55	101.64	74.00	-27.64	Peak

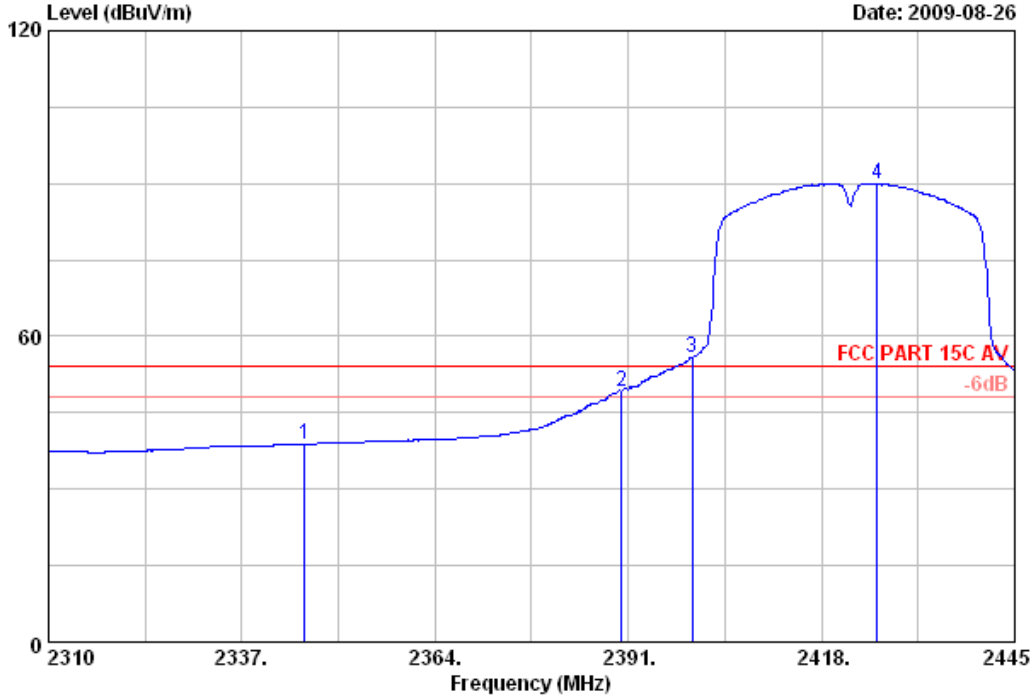
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 100 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 100
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH1 2422MHz

	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	2345.775	28.38	8.57	35.99	37.92	38.88	54.00	15.12	Average
2	2390.000	28.46	8.41	36.09	48.48	49.26	54.00	4.74	Average
3	2400.000	28.46	8.60	36.09	54.94	55.91	54.00	-1.91	Average
4	2425.830	28.50	8.60	36.01	88.97	90.06	54.00	-36.06	Average

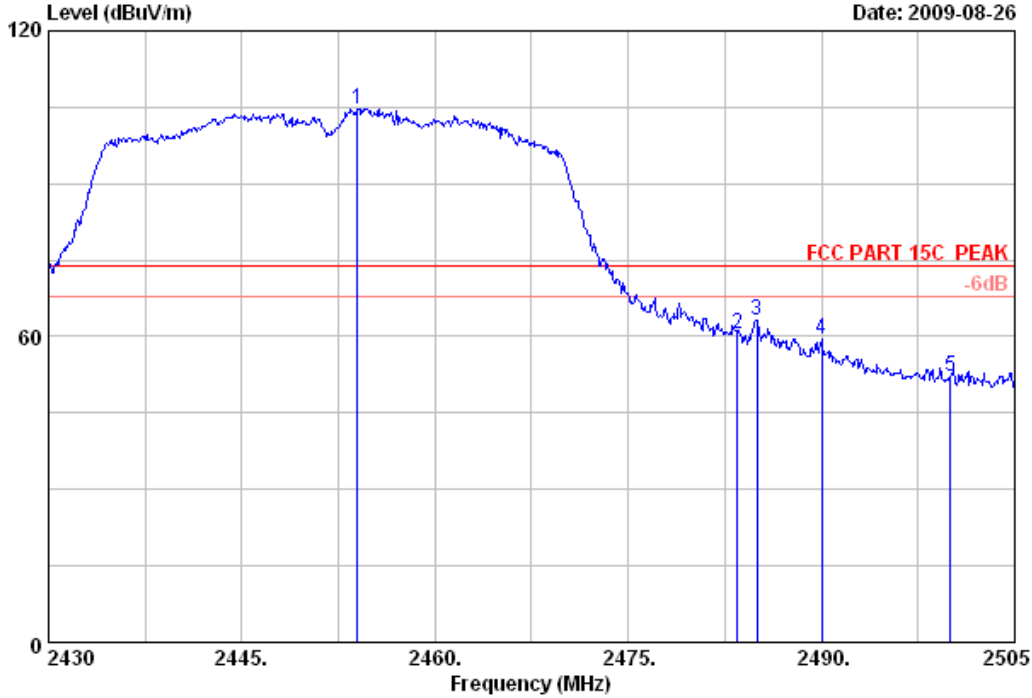
Remarks:

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



No.6 Ke Feng Road,Block 52,
Shenzhen Science & Industry Park
Noutou,Shenzhen,GuangDong,China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 101 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 101
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

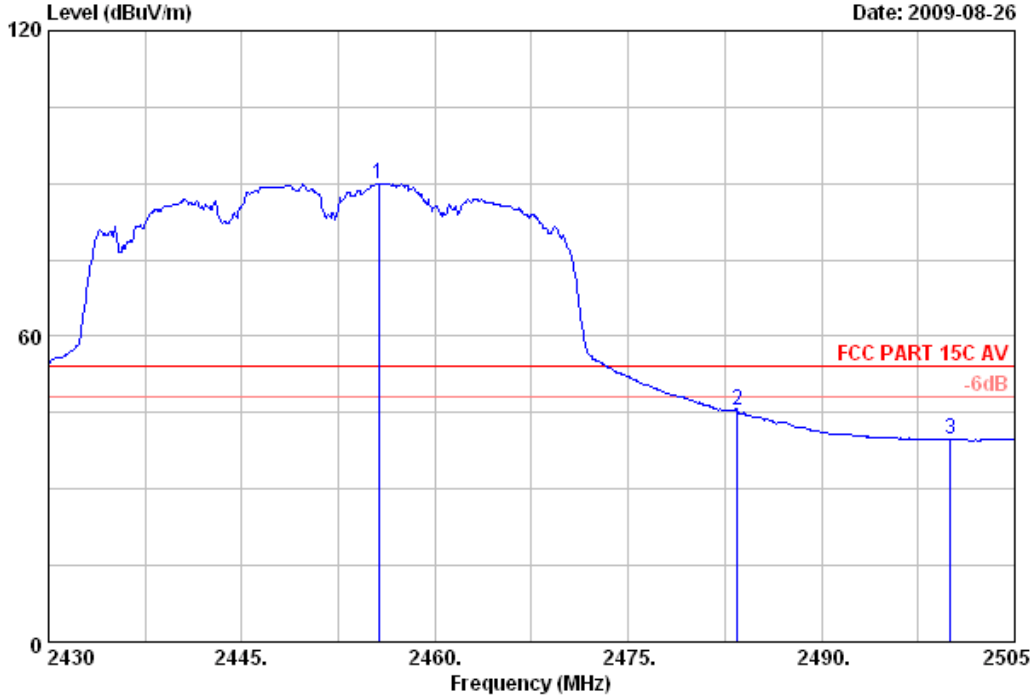
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dbuv)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2454.000	28.55	8.48	36.02	103.61	104.62	74.00	-30.62	Peak
2	2483.500	28.58	8.94	35.97	58.78	60.33	74.00	13.67	Peak
3	2484.975	28.58	8.94	35.97	61.76	63.31	74.00	10.69	Peak
4	2490.000	28.60	8.94	36.00	58.05	59.59	74.00	14.41	Peak
5	2500.000	28.60	8.89	36.00	50.79	52.28	74.00	21.72	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.



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 102 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 102
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

	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	2455.650	28.55	8.48	36.02	88.98	89.99	54.00	-35.99	Average
2	2483.500	28.58	8.94	35.97	43.88	45.43	54.00	8.57	Average
3	2500.000	28.60	8.89	36.00	38.17	39.66	54.00	14.34	Average

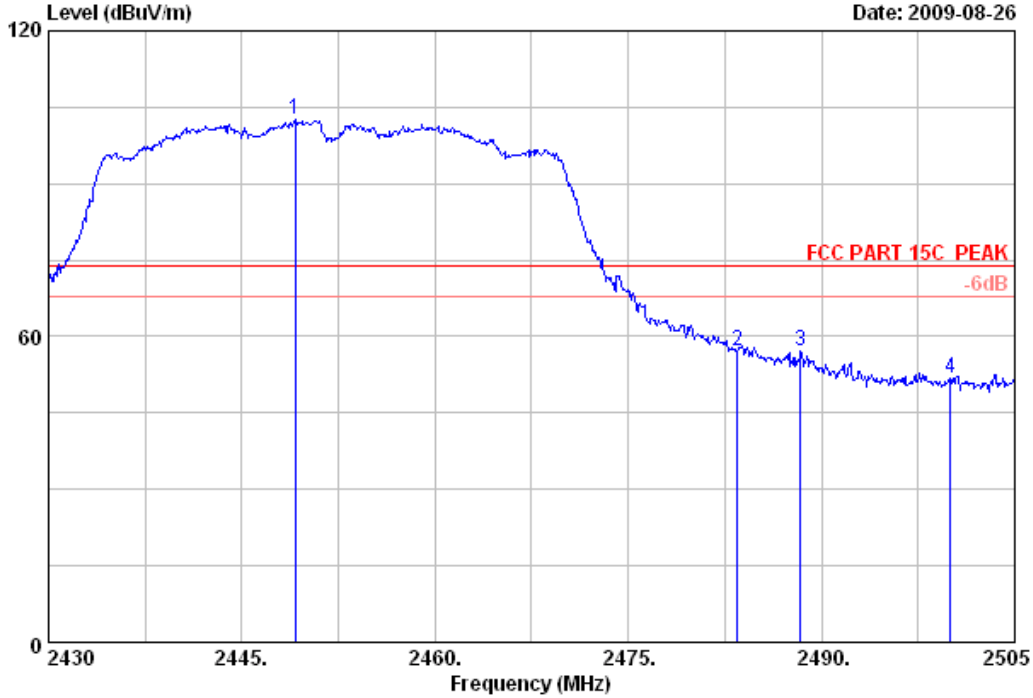
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 103 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 103
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23*C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

	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	2449.125	28.53	8.48	36.06	101.59	102.54	74.00	-28.54	Peak
2	2483.500	28.58	8.94	35.97	55.66	57.21	74.00	16.79	Peak
3	2488.350	28.60	8.94	36.00	55.69	57.23	74.00	16.77	Peak
4	2500.000	28.60	8.89	36.00	50.44	51.93	74.00	22.07	Peak

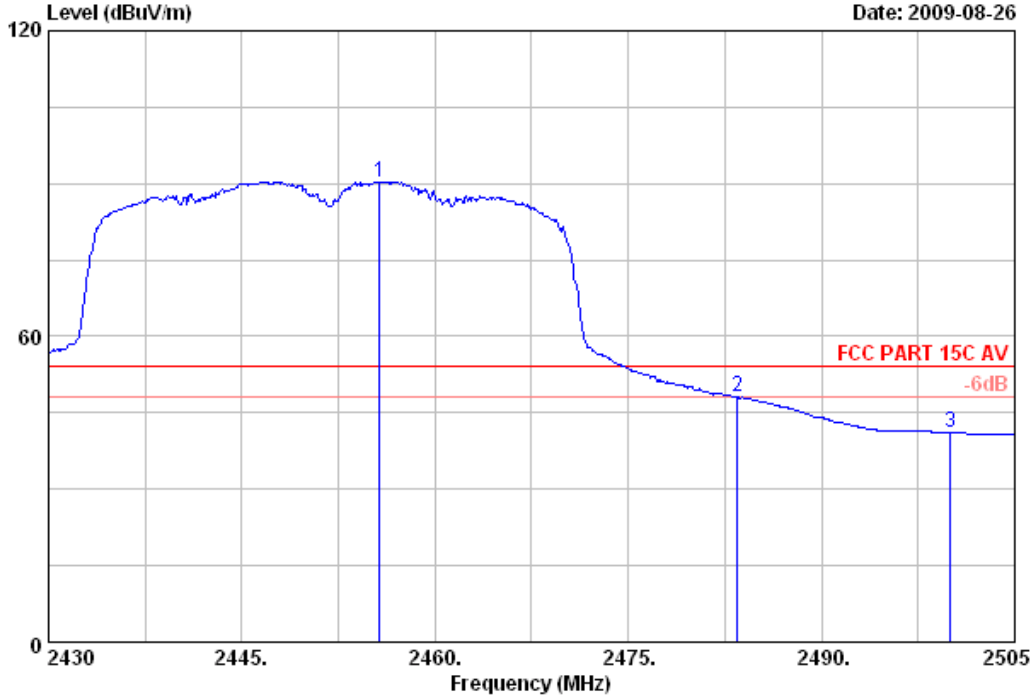
Remarks:

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



No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou, ShenZhen, GuangDong, China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 104 File: E:\2009 report data\TP-LINK\ACS9Q832.EM6 (104)



Site no. : 3m Chamber Data no. : 104
 Dis. / Ant. : 3m 3115(0905) Ant. pol. : VERTICAL
 Limit : FCC PART 15C AV
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu
 EUT : Wireless N USB Adapter M/N:TL-WN821N
 Power : DC 5V From PC input AC 120V/60Hz
 Test mode : IEEE802.11n HT40 CH7 2452MHz

	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	2455.725	28.55	8.48	36.02	89.31	90.32	54.00	-36.32	Average
2	2483.500	28.58	8.94	35.97	46.56	48.11	54.00	5.89	Average
3	2500.000	28.60	8.89	36.00	39.55	41.04	54.00	12.96	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	12.00	>500	PASS
6	12.08	>500	PASS
11	12.25	>500	PASS

Test Mode: IEEE 802.11g TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	16.17	>500	PASS
6	16.33	>500	PASS
11	16.25	>500	PASS

Test Mode: IEEE 802.11n HT20 TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	17.50	>500	PASS
6	17.25	>500	PASS
11	17.42	>500	PASS

Test Mode: IEEE 802.11n HT40 TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	35.00	>500	PASS
4	35.00	>500	PASS
7	33.80	>500	PASS

Chain 2:

Test Mode: IEEE 802.11b TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	12.17	>500	PASS
6	12.00	>500	PASS
11	12.08	>500	PASS

Test Mode: IEEE 802.11g TX

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

Test Mode: IEEE 802.11n HT20 TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	17.50	>500	PASS
6	17.50	>500	PASS
11	17.58	>500	PASS

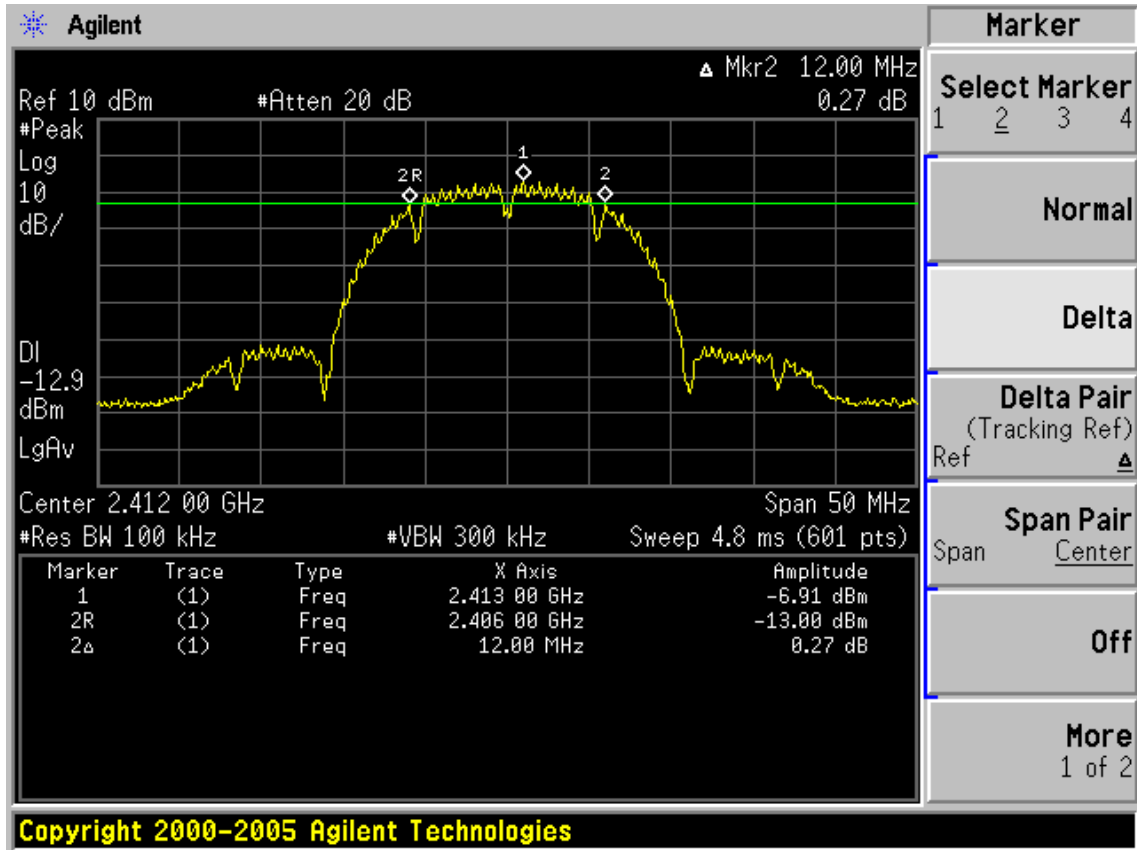
Test Mode: IEEE 802.11n HT40 TX

CH	6dB Bandwidth (MHz)	Limit	Conclusion
1	35.00	>500	PASS
4	35.00	>500	PASS
7	35.00	>500	PASS

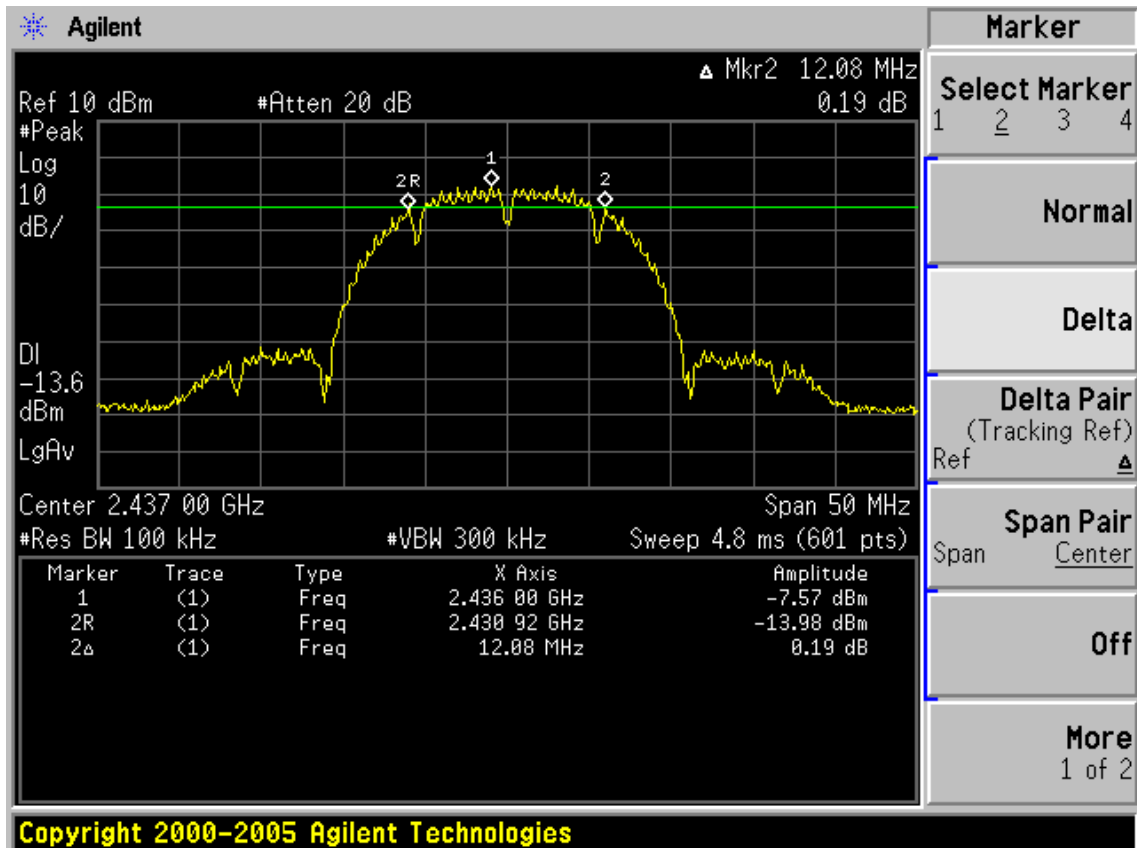
Chain 1:

Test Mode: IEEE 802.11b TX

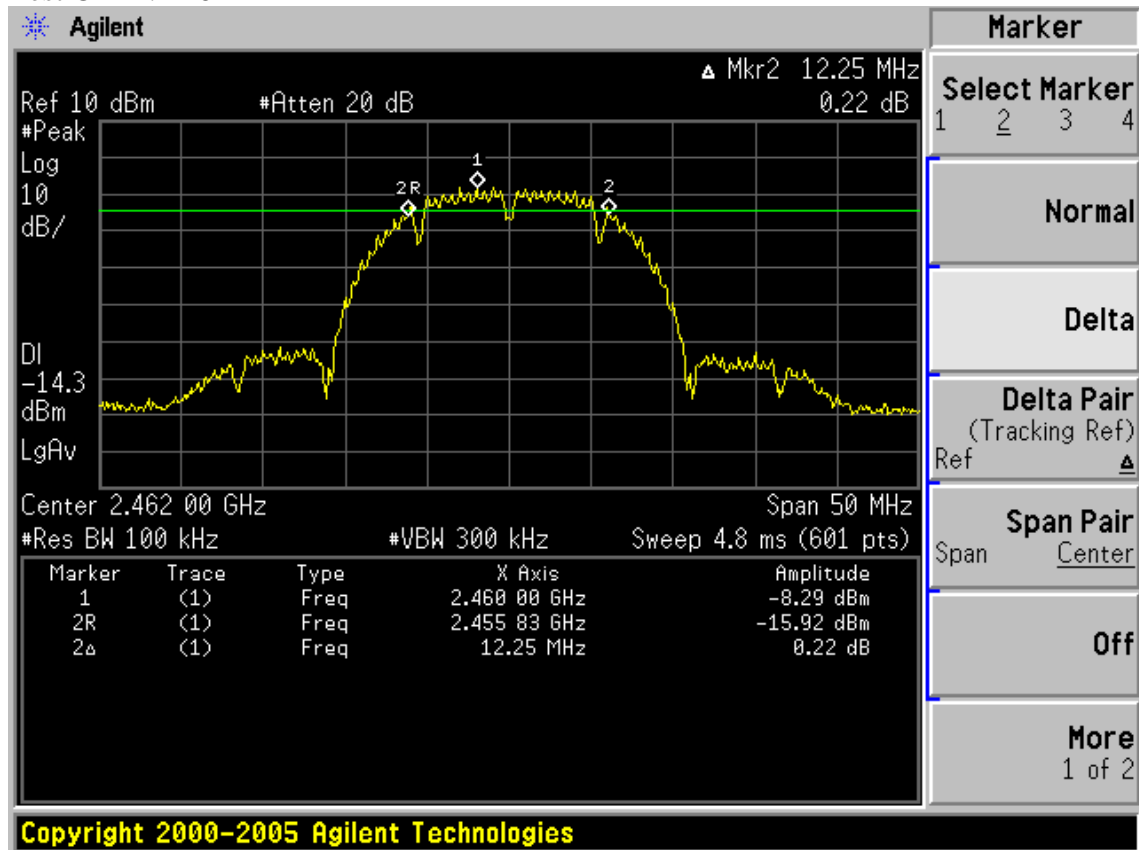
Test CH1: 2412MHz



Test CH6: 2437MHz

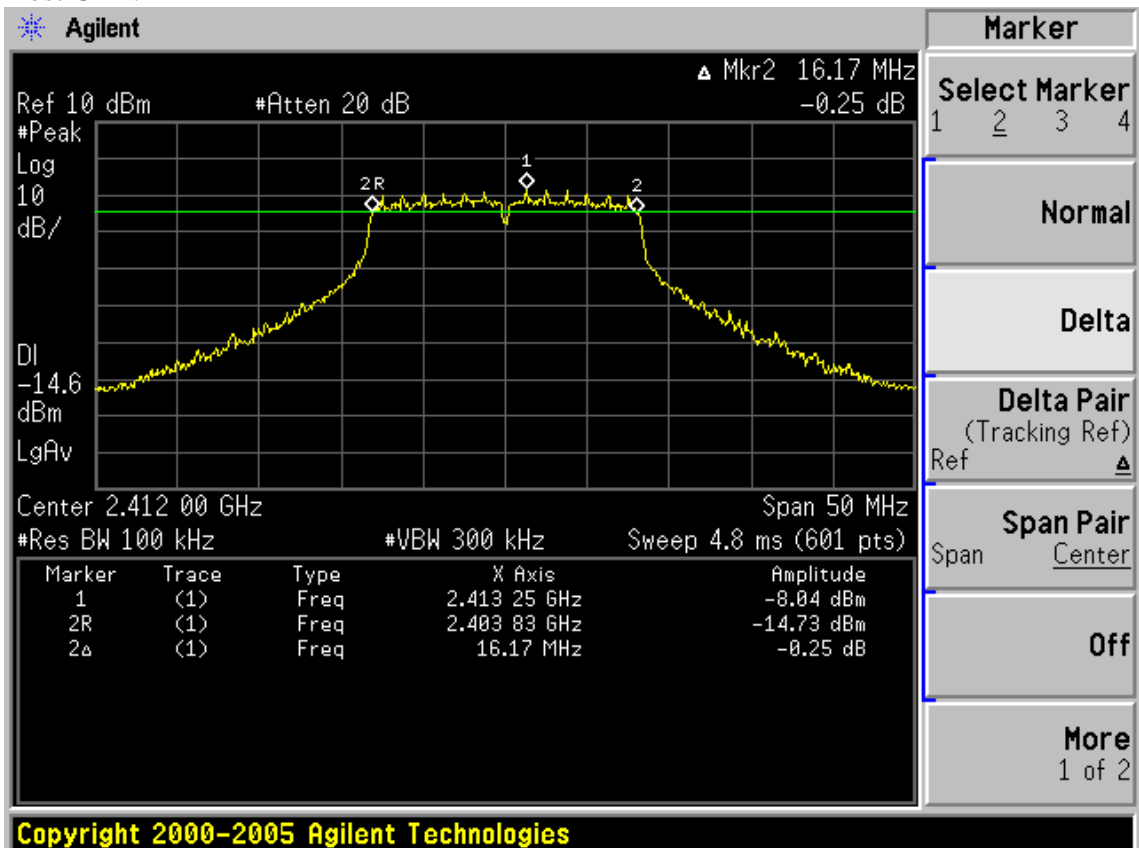


Test CH1: 2462MHz

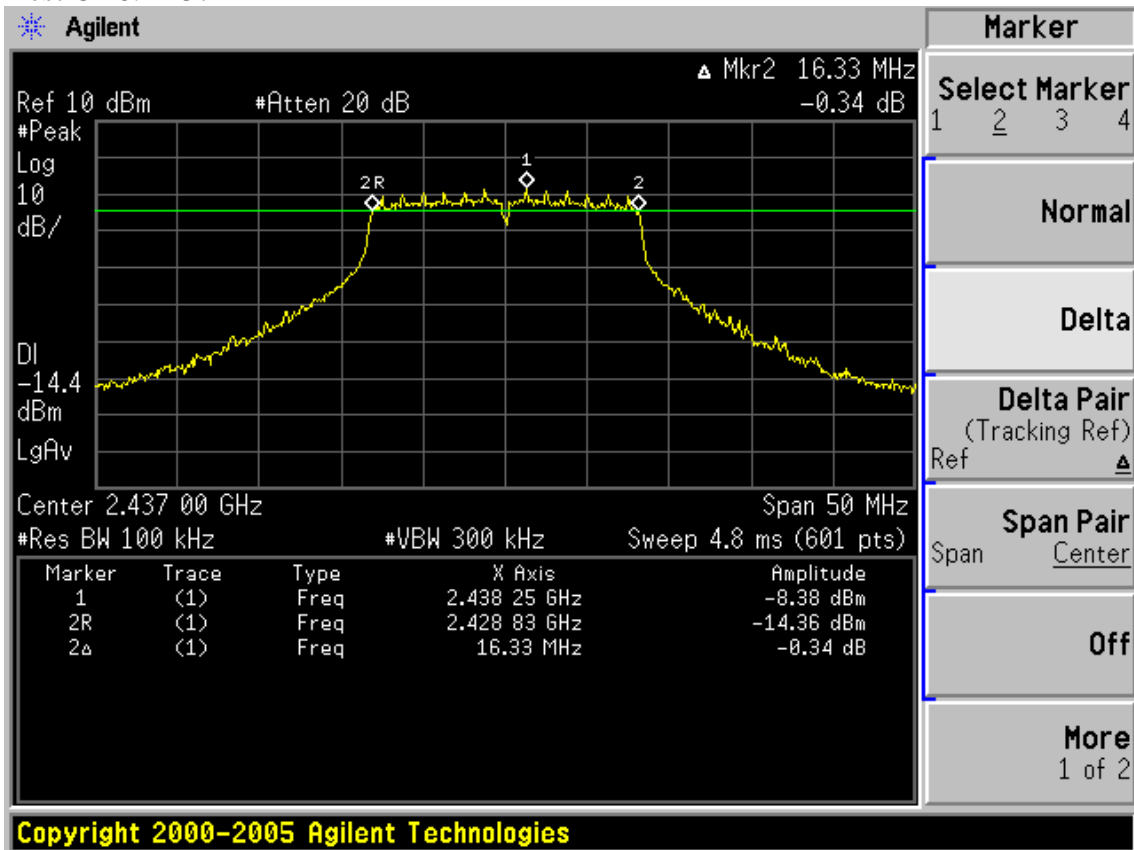


Test Mode: IEEE 802.11g TX

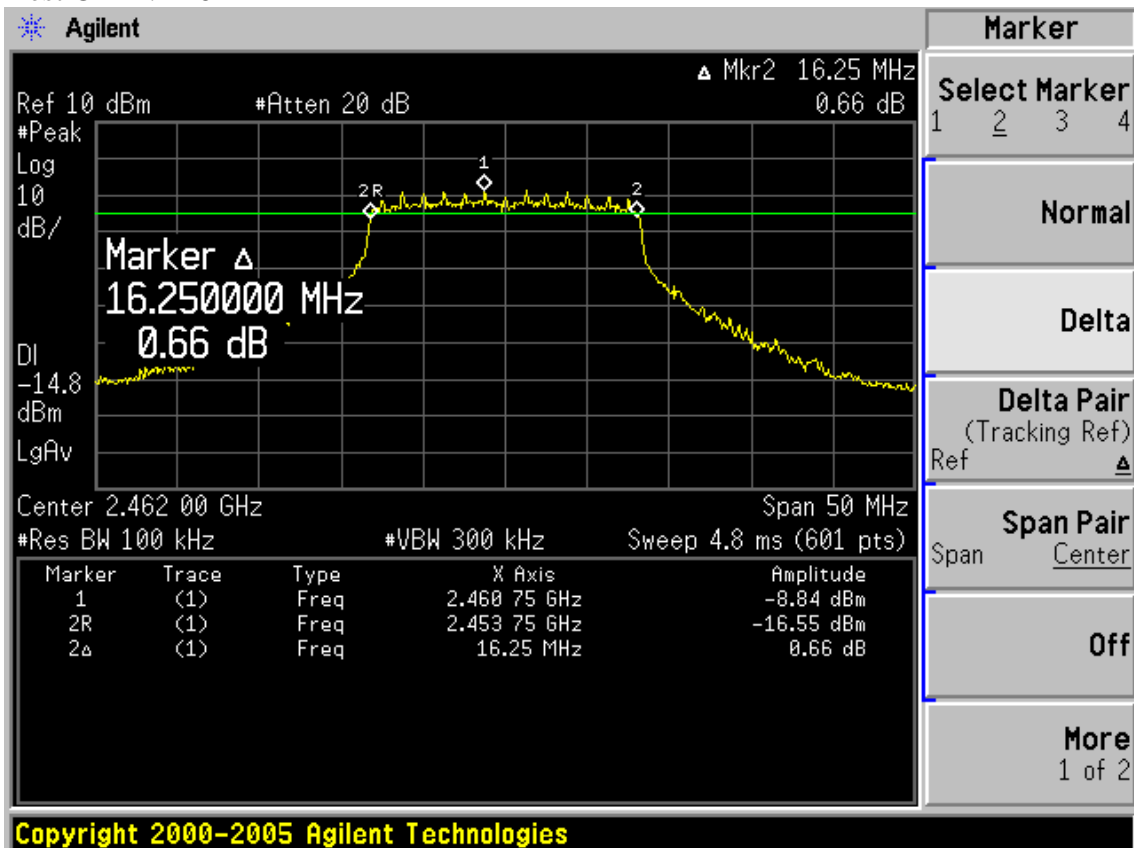
Test CH1: 2412MHz



Test CH6: 2437MHz

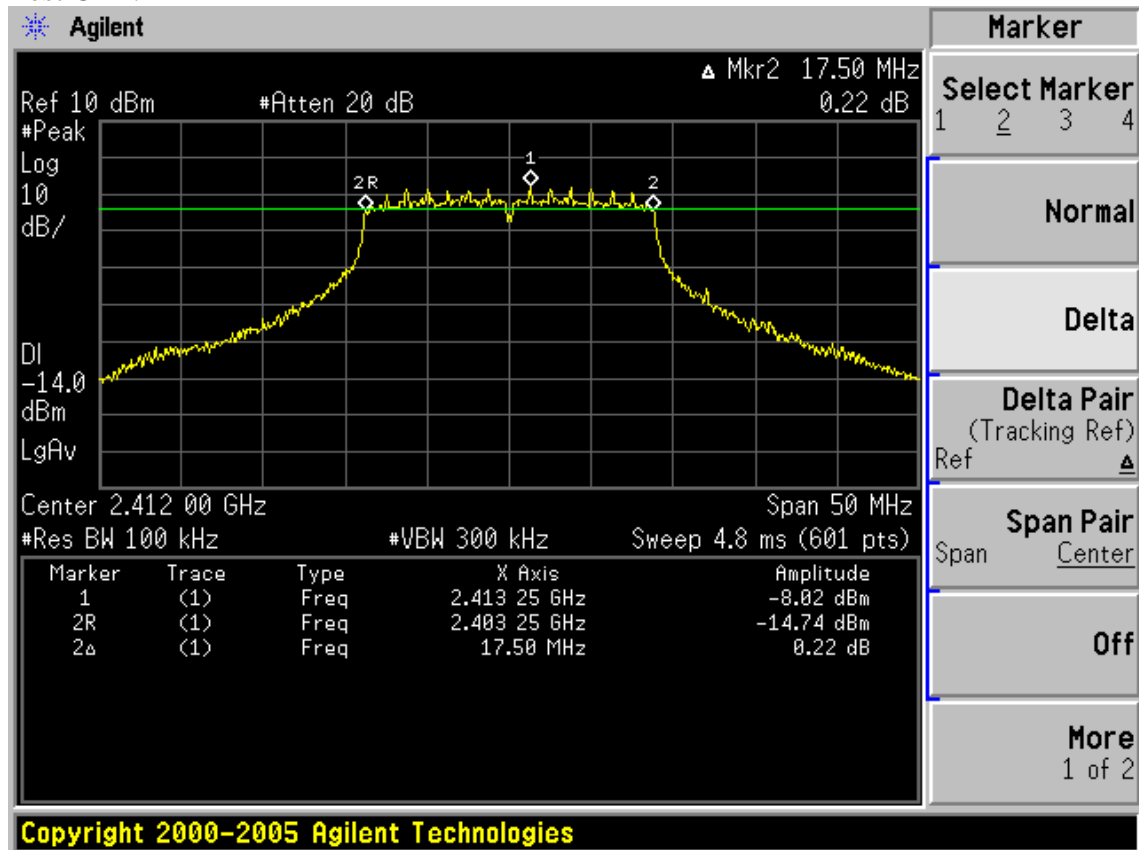


Test CH11: 2462MHz

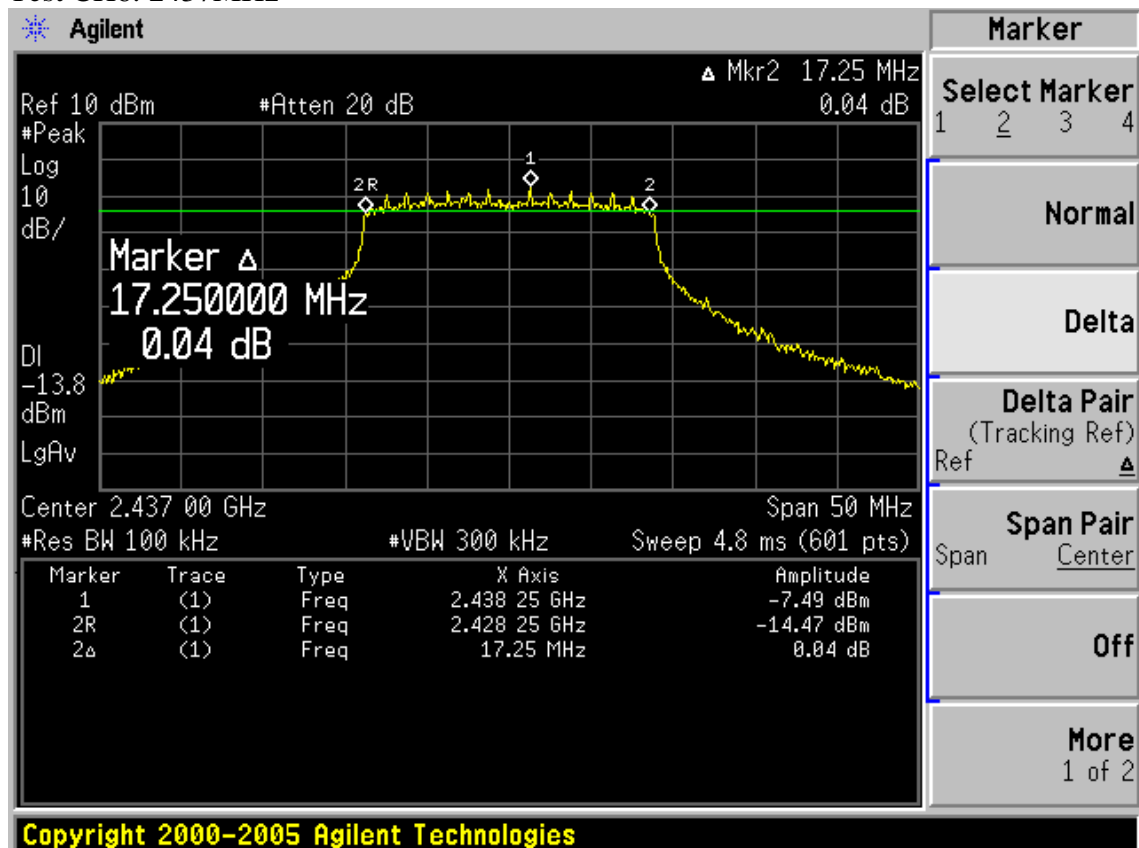


Test Mode: IEEE 802.11n HT20 TX

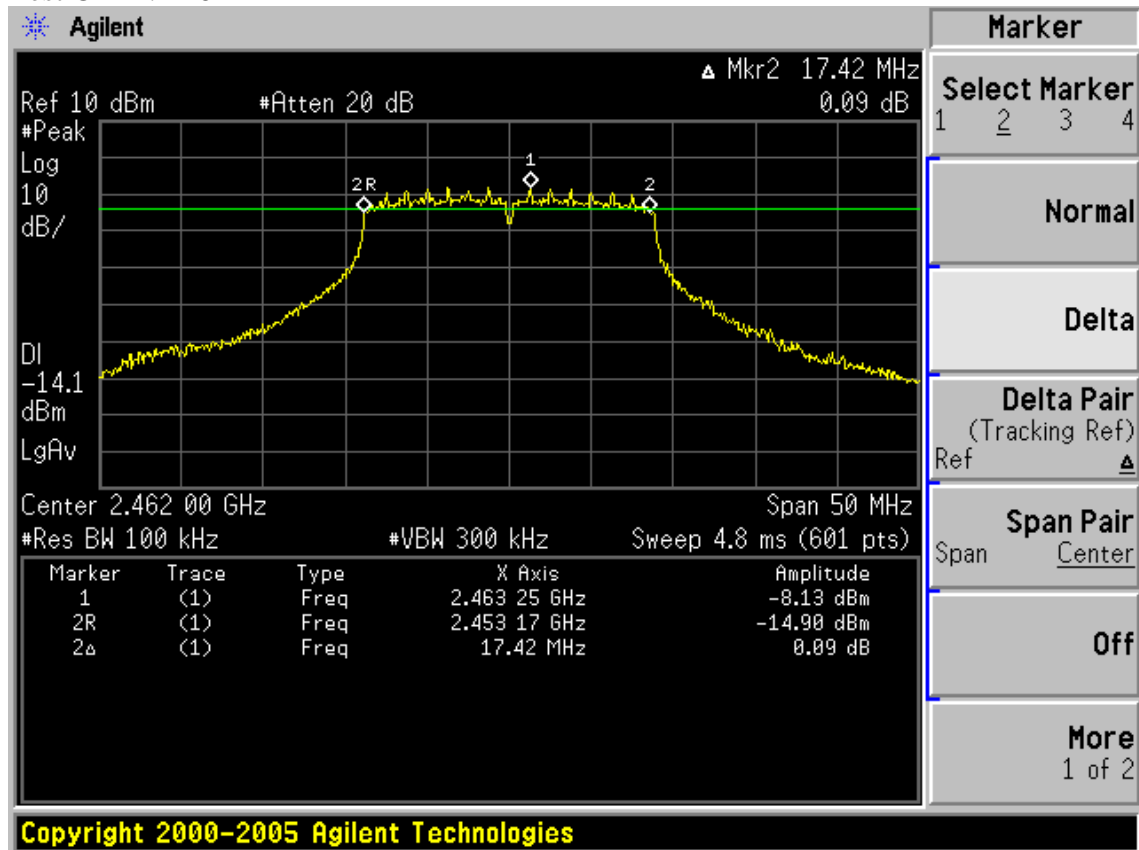
Test CH1: 2412MHz



Test CH6: 2437MHz

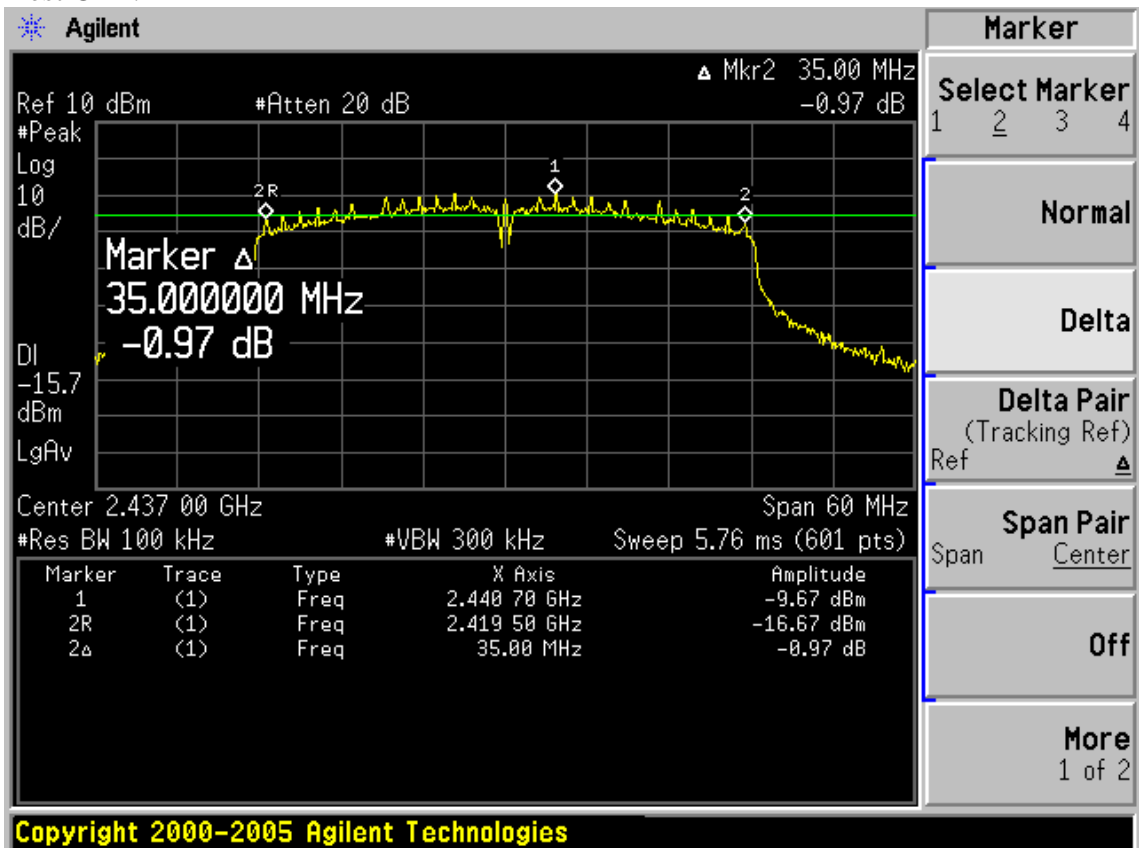


Test CH1: 2462MHz

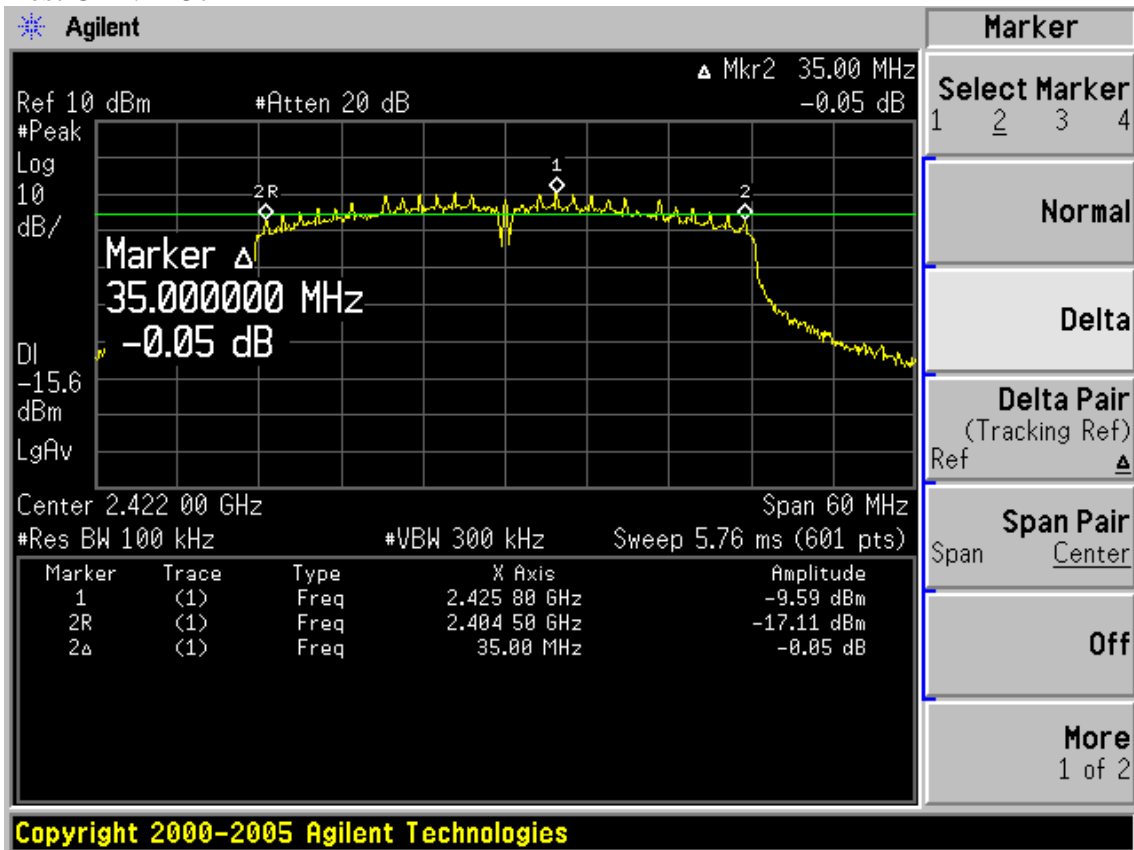


Test Mode: IEEE 802.11n HT40 TX

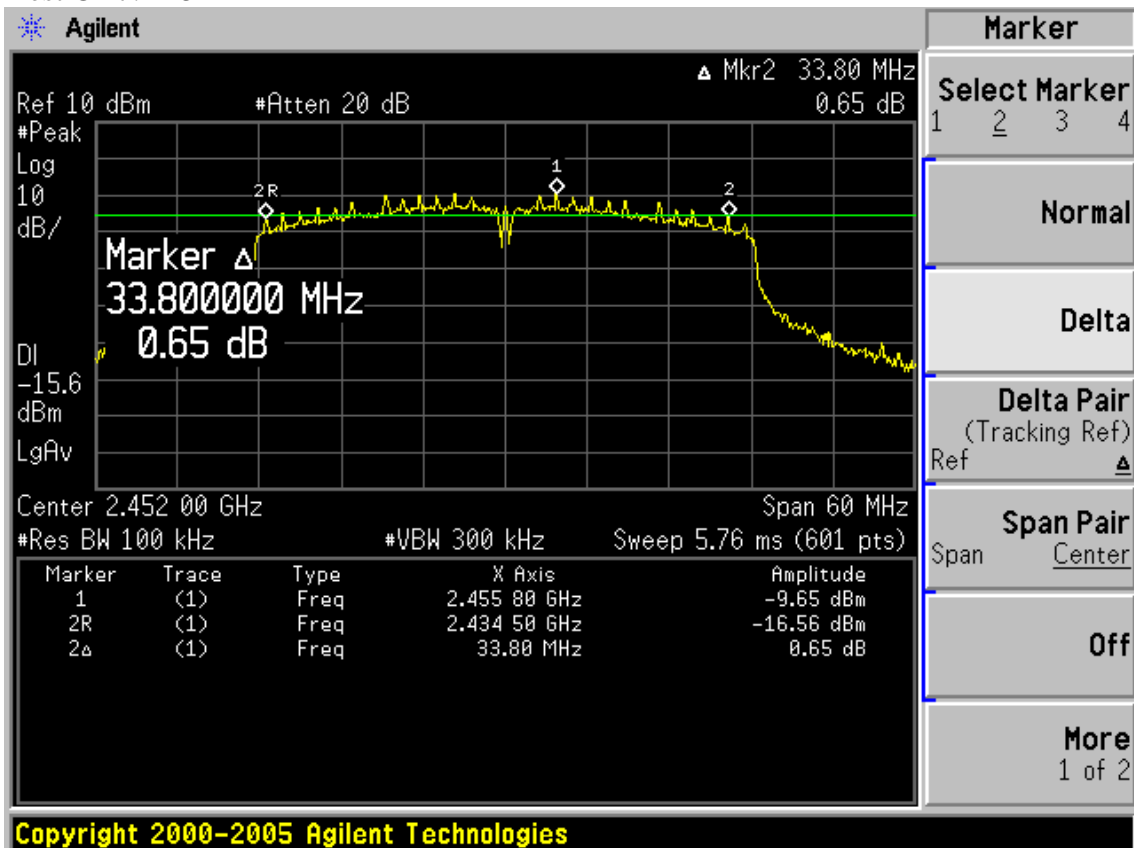
Test CH1: 2422MHz



Test CH4: 2437MHz



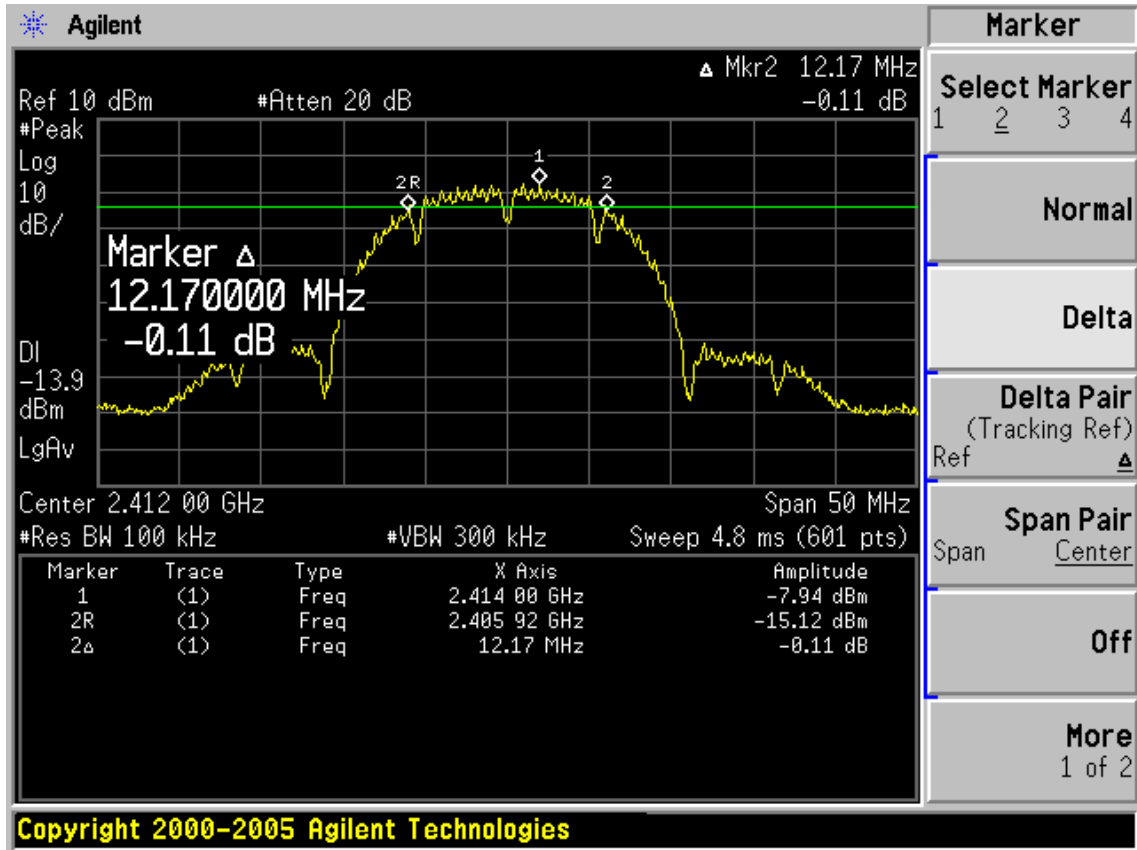
Test CH7: 2452MHz



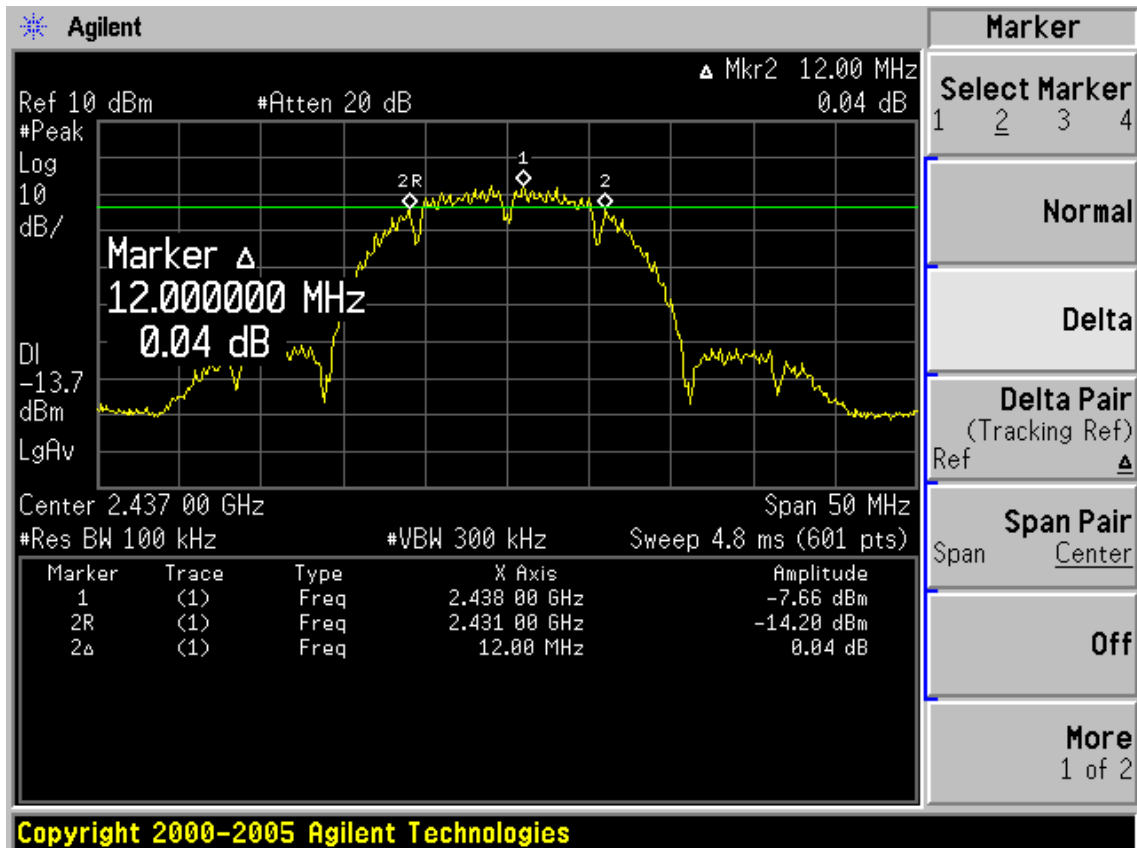
Chain 2:

Test Mode: IEEE 802.11b TX

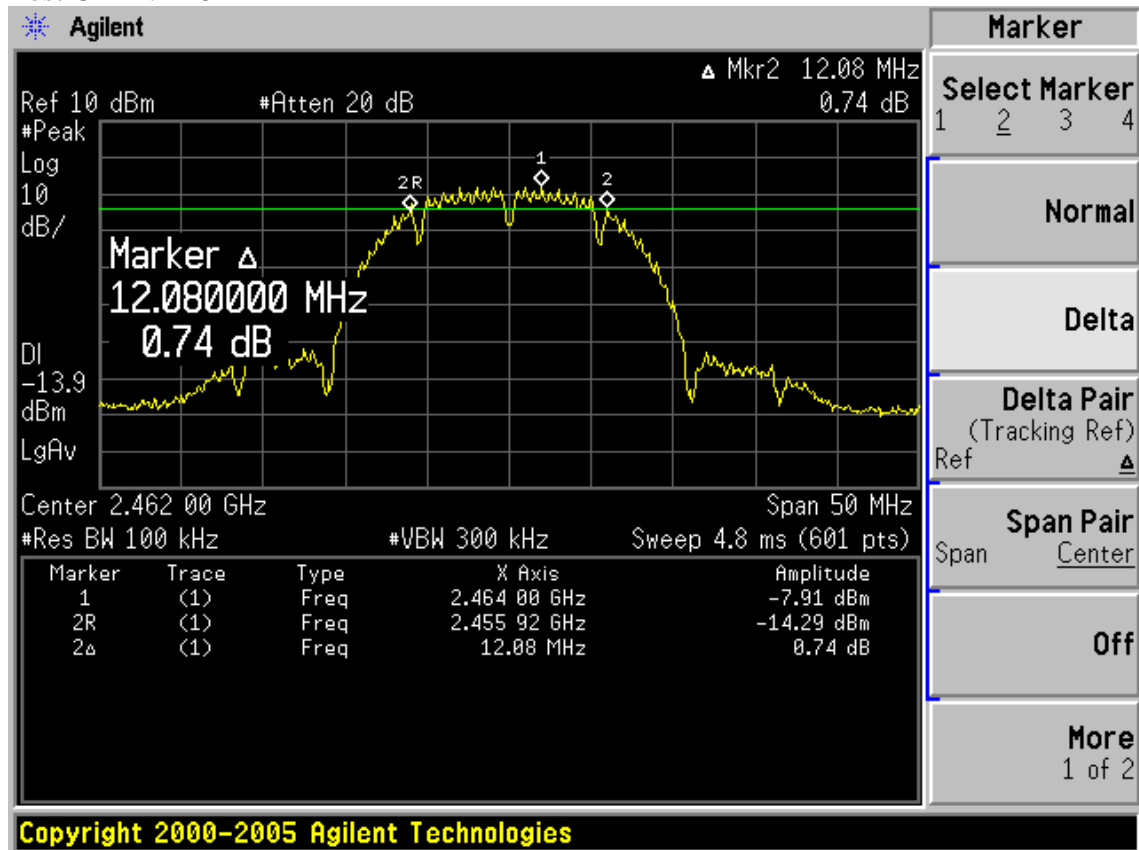
Test CH1: 2412MHz



Test CH6: 2437MHz

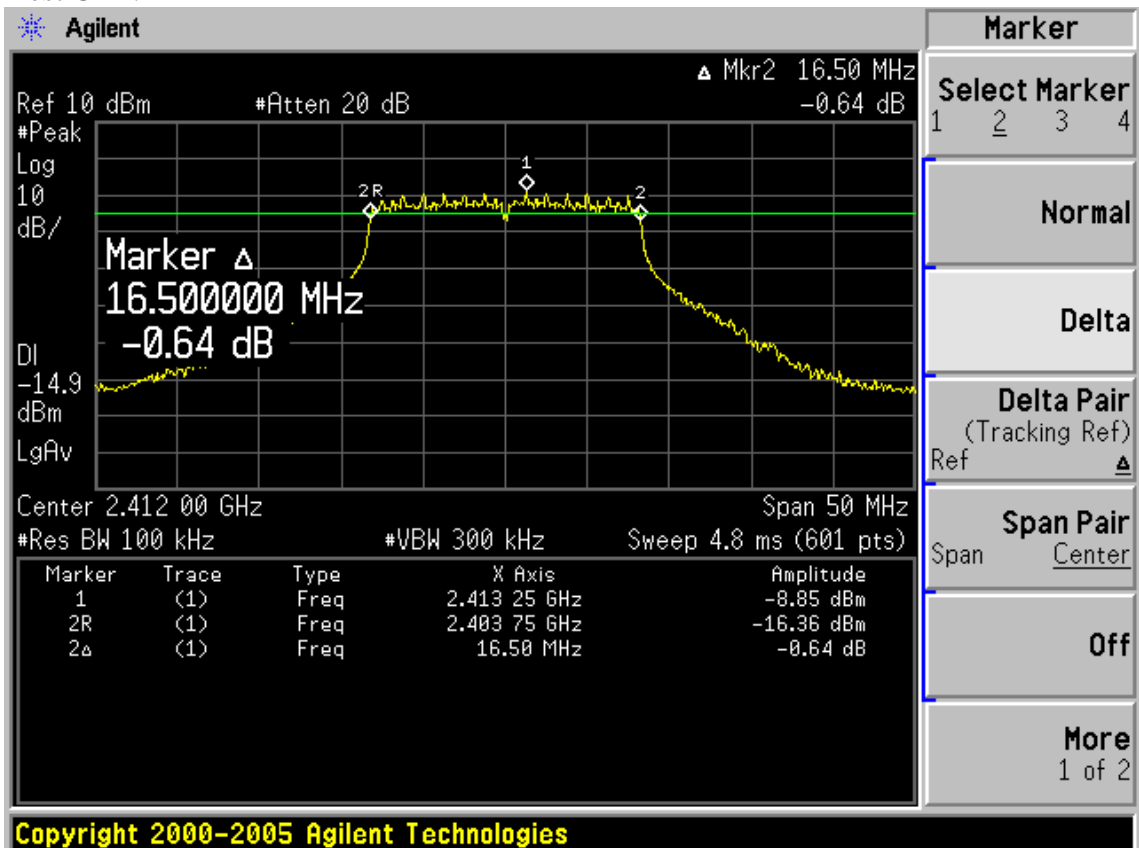


Test CH1: 2462MHz

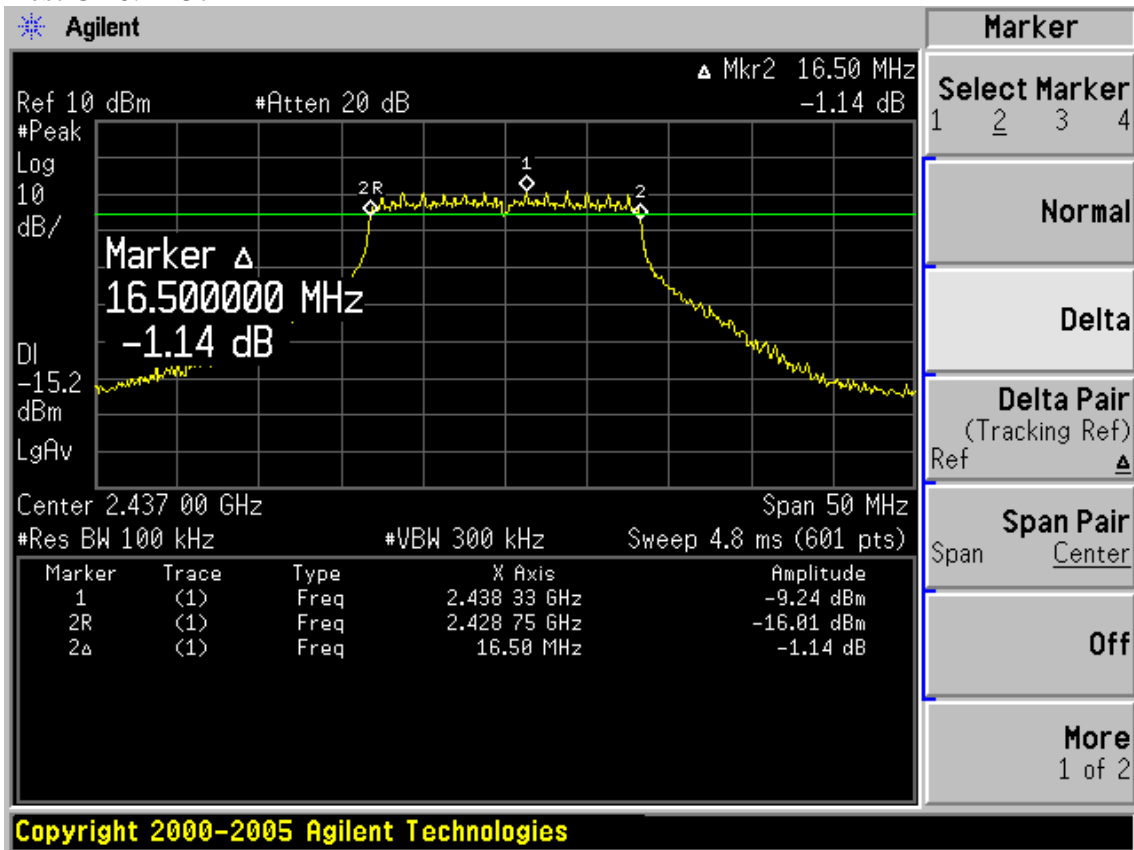


Test Mode: IEEE 802.11g TX

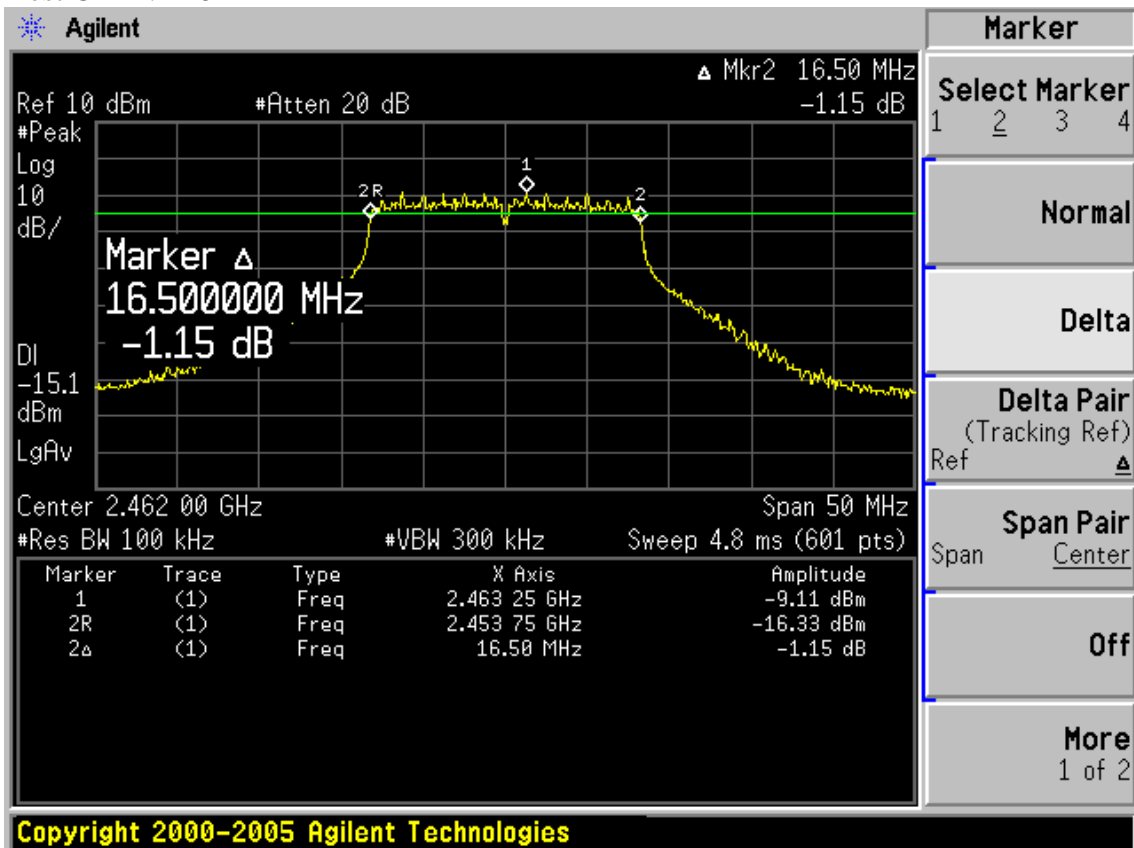
Test CH1: 2412MHz



Test CH6: 2437MHz

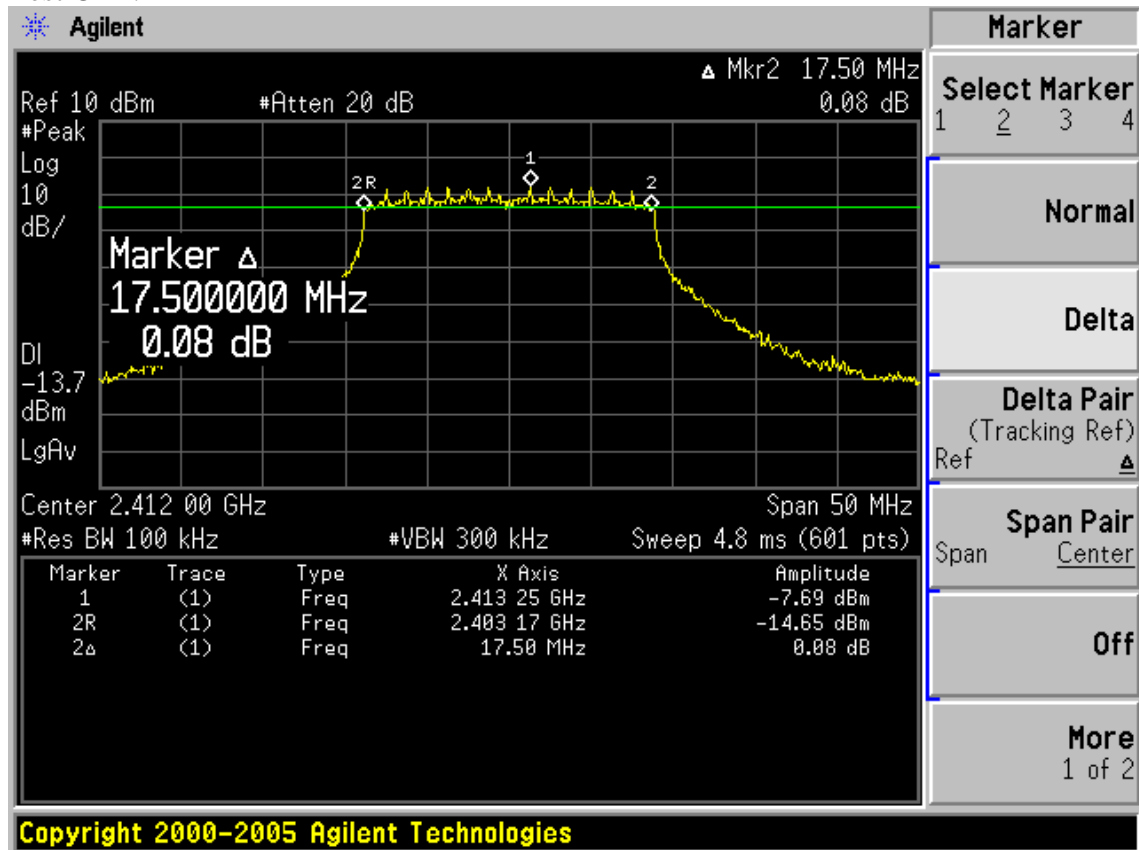


Test CH11: 2462MHz

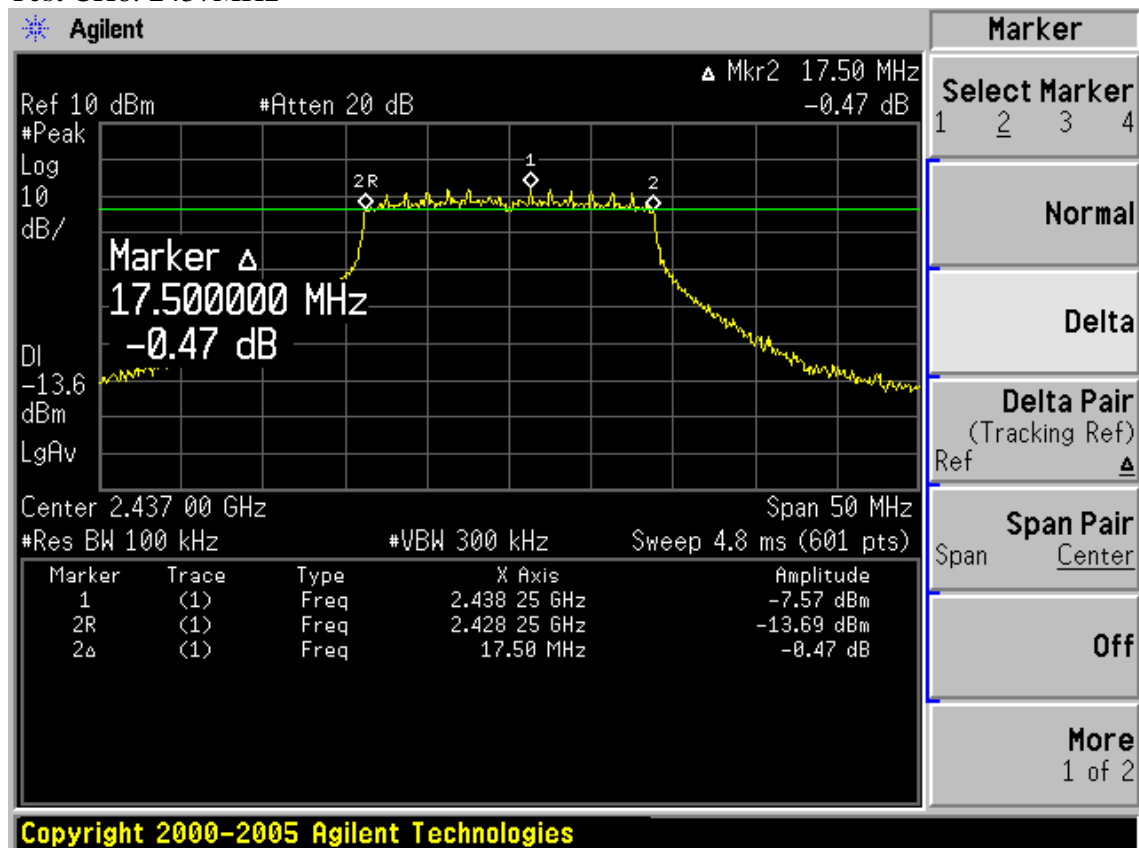


Test Mode: IEEE 802.11n HT20 TX

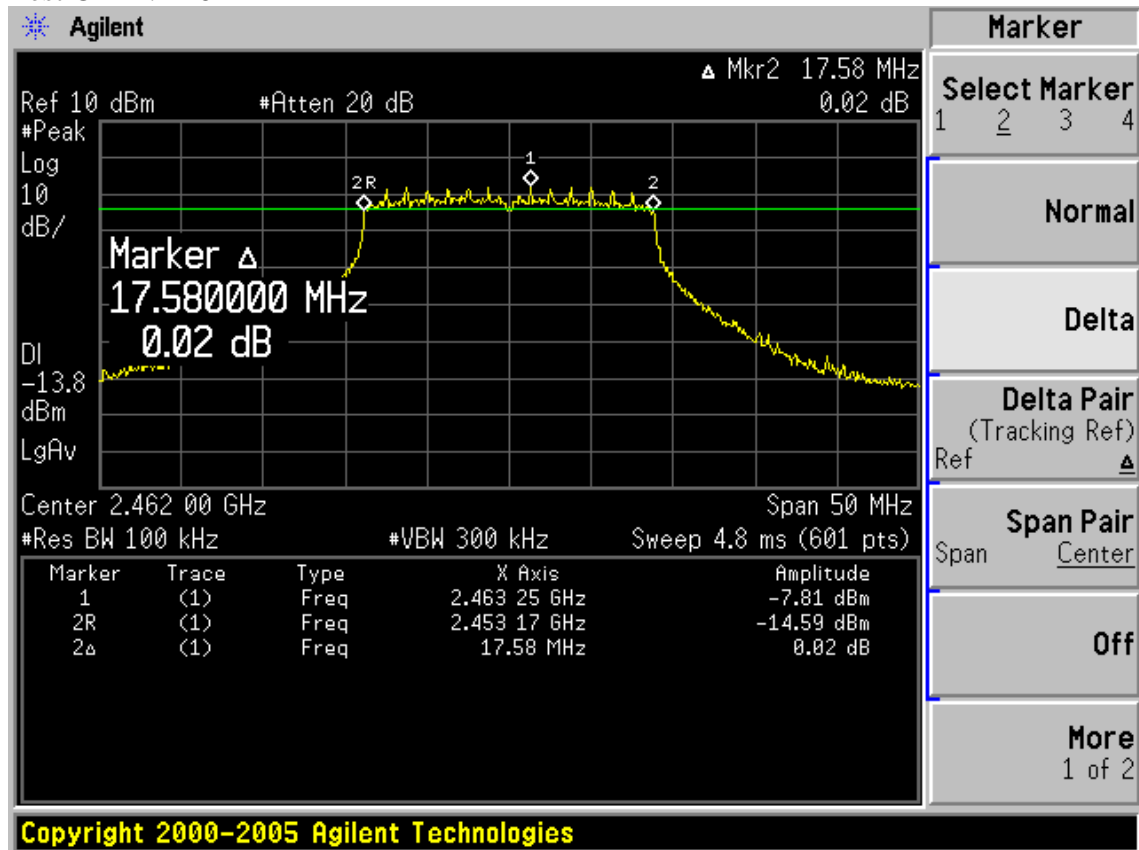
Test CH1: 2412MHz



Test CH6: 2437MHz

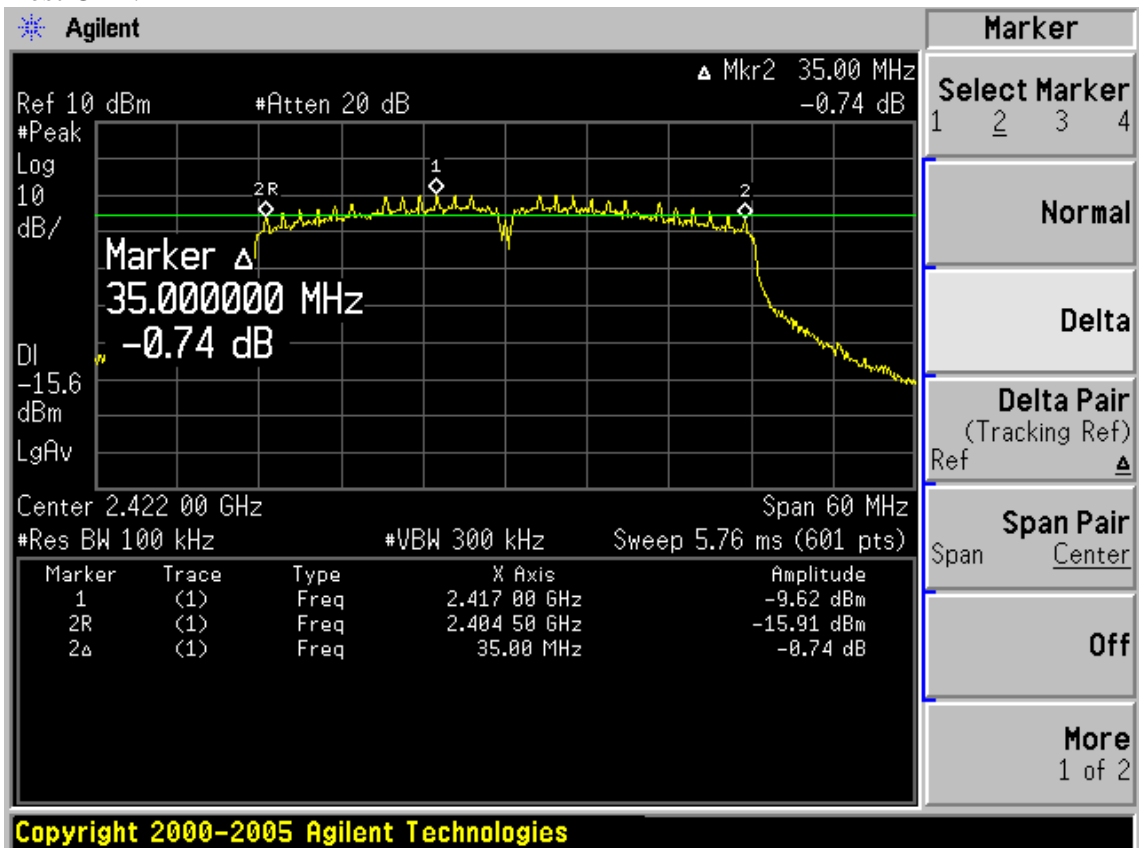


Test CH1: 2462MHz

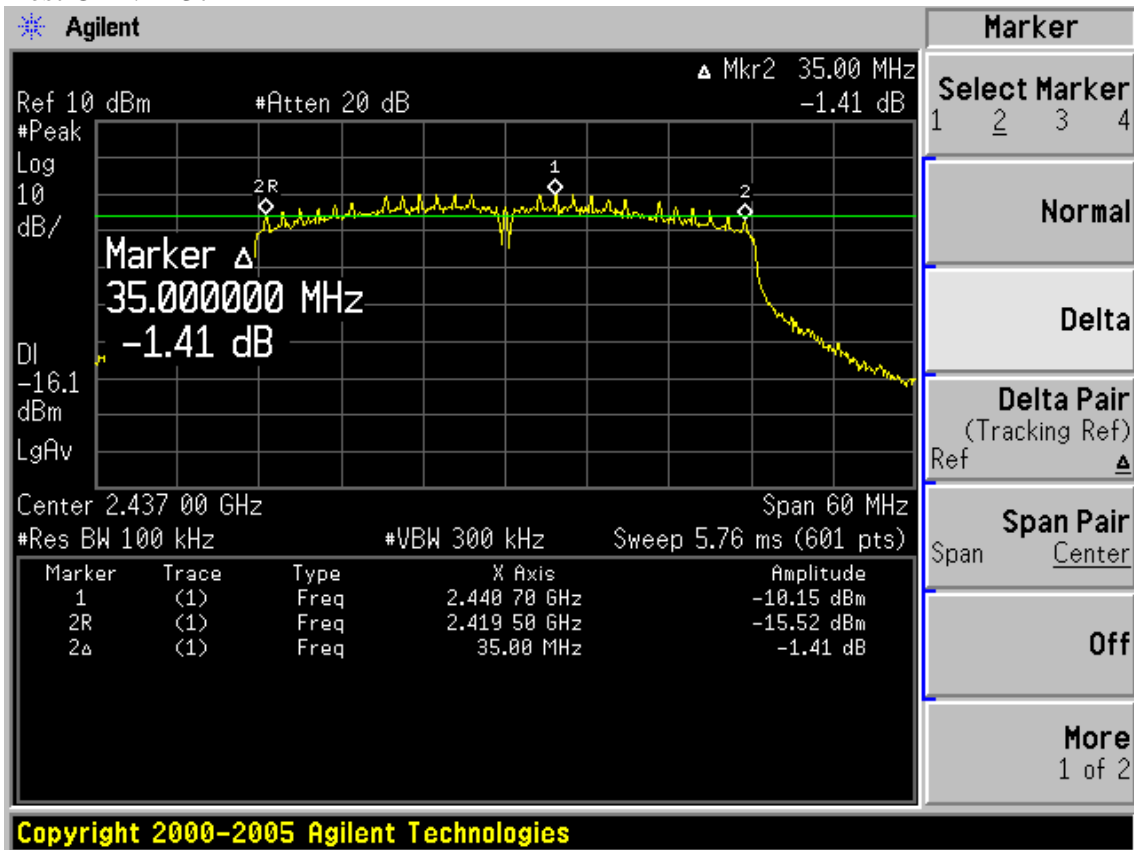


Test Mode: IEEE 802.11n HT40 TX

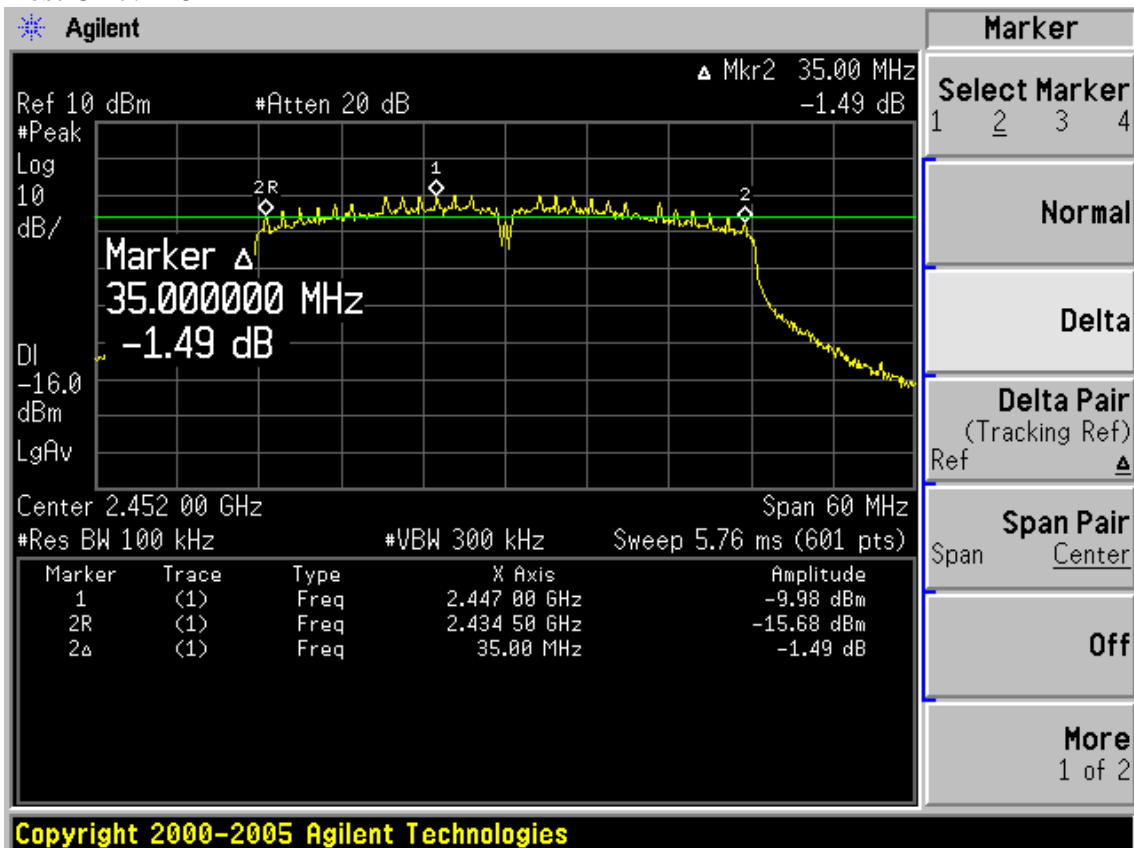
Test CH1: 2422MHz



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

The transmitter output was connected to a Spectrum Analyzer through a 20dB Attenuator, and use the channel power measure function of Spectrum Analyzer to read out the peak output power of each chain's power.

8.4. Test Results

EUT: Wireless N USB Adapter M/N:TL-WN821N								
Power: DC 5V 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:2009/08/26			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	-4.00	16.60	-4.51	16.09	19.36	30.00	PASS
	CH6	-4.18	16.42	-4.65	15.95	19.20	30.00	PASS
	CH11	-4.80	15.80	-5.22	15.38	18.61	30.00	PASS
11g	CH1	0.20	20.80	-0.23	20.37	23.60	30.00	PASS
	CH6	0.96	21.56	0.95	21.55	24.57	30.00	PASS
	CH11	-1.02	19.58	-0.86	19.74	22.67	30.00	PASS
11n HT20	CH1	0.44	21.04	-0.85	19.75	23.45	30.00	PASS
	CH6	1.72	22.32	0.94	21.54	24.96	30.00	PASS
	CH11	-1.22	19.38	-2.25	18.35	21.91	30.00	PASS
11n HT40	CH1	-0.71	19.89	-0.76	19.84	22.88	30.00	PASS
	CH4	2.04	22.64	1.67	22.27	25.47	30.00	PASS
	CH7	-1.49	19.11	-1.56	19.04	22.09	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.

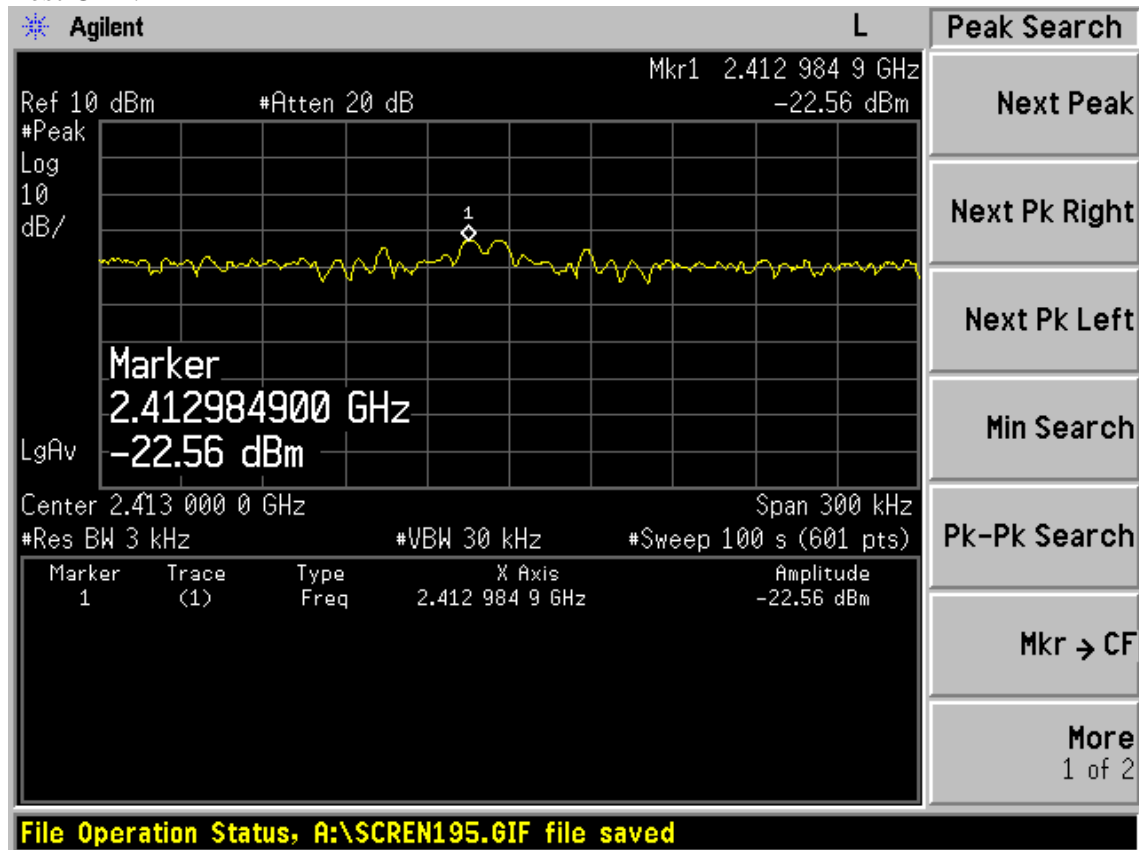
9.4.Test Results

EUT: Wireless N USB Adapter M/N:TL-WN821N								
Power: DC 5V 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°C			Relative Humidity: 60%					
Test date:2009/08/24			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	Limit (dBm)	Conclusion
11b	CH1	-22.56	-1.96	-22.60	-2.00	1.03	8	PASS
	CH6	-25.75	-5.15	-22.87	-2.27	-0.47	8	PASS
	CH11	-28.75	-8.15	-22.66	-2.06	-1.10	8	PASS
11g	CH1	-22.90	-2.30	-24.12	-3.52	0.14	8	PASS
	CH6	-23.91	-3.31	-24.45	-3.85	-0.56	8	PASS
	CH11	-23.10	-2.5	-23.78	-3.18	0.18	8	PASS
11n HT20	CH1	-22.10	-1.50	-23.19	-2.59	1.00	8	PASS
	CH6	-23.42	-2.82	-21.83	-1.23	1.06	8	PASS
	CH11	-24.32	-3.72	-21.85	-1.25	0.70	8	PASS
11n HT40	CH1	-23.09	-2.49	-25.14	-4.54	-0.38	8	PASS
	CH4	-25.05	-4.45	-25.49	-4.89	-1.65	8	PASS
	CH7	-25.20	-4.60	-24.17	-3.57	-1.04	8	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)								

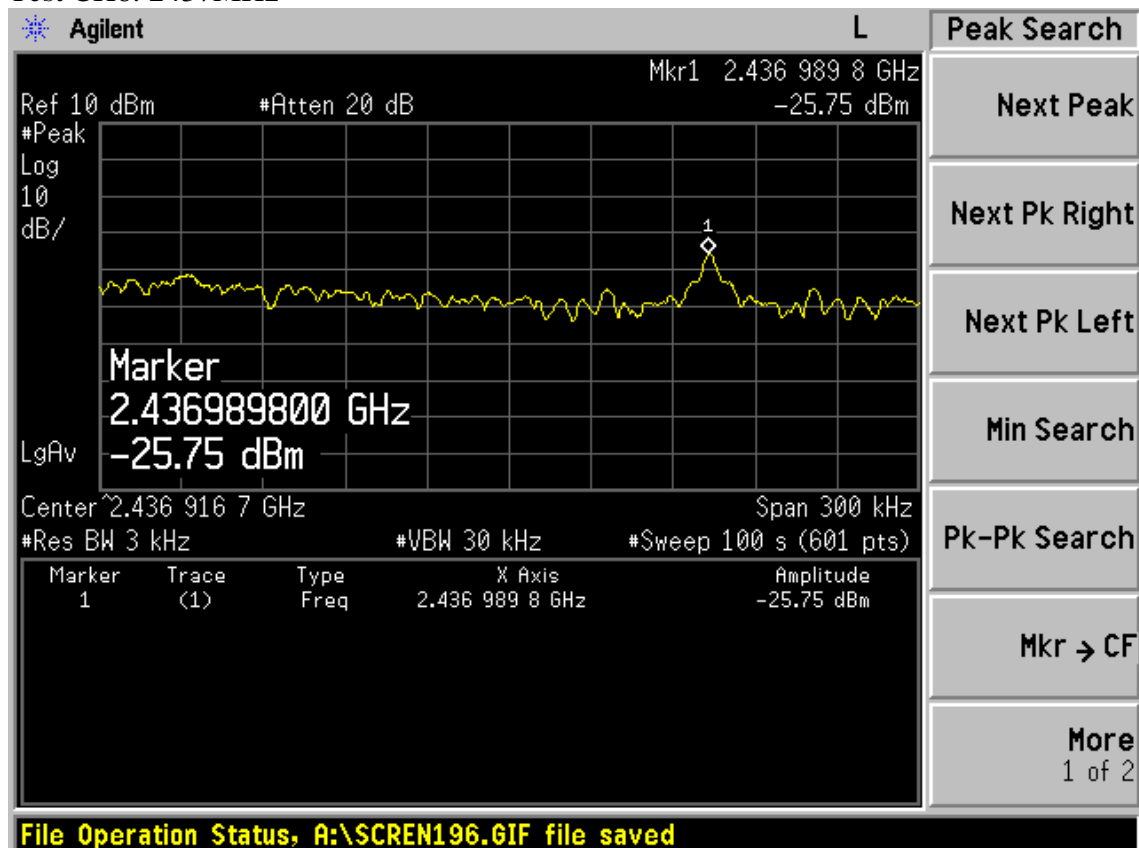
Chain 1:

Test Mode: IEEE 802.11b TX

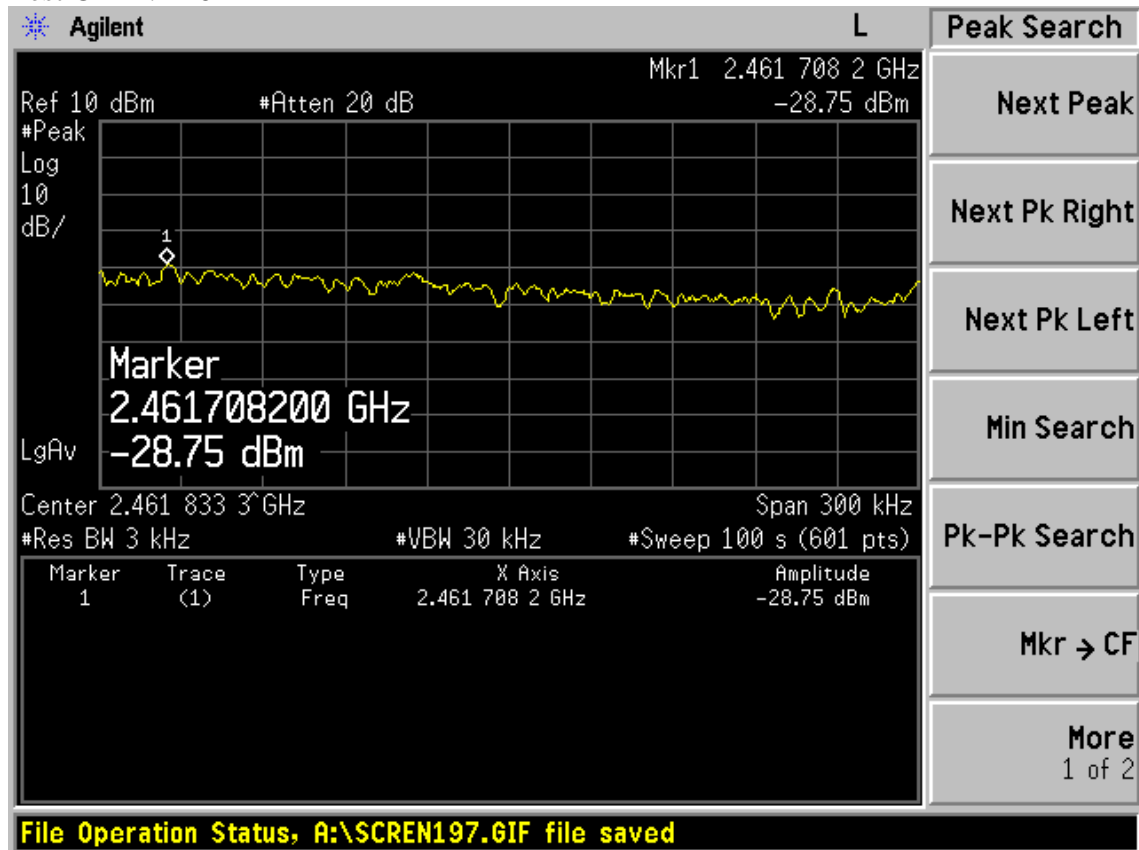
Test CH1: 2412MHz



Test CH6: 2437MHz

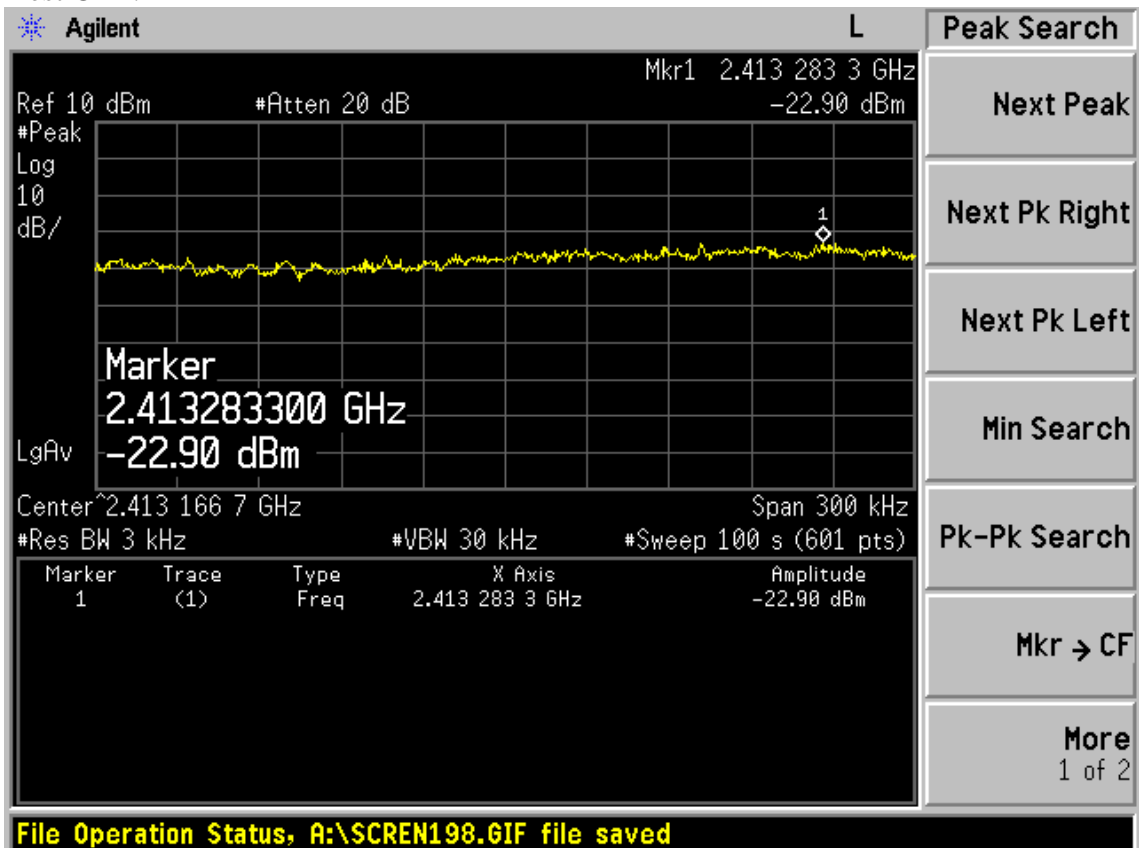


Test CH1: 2462MHz

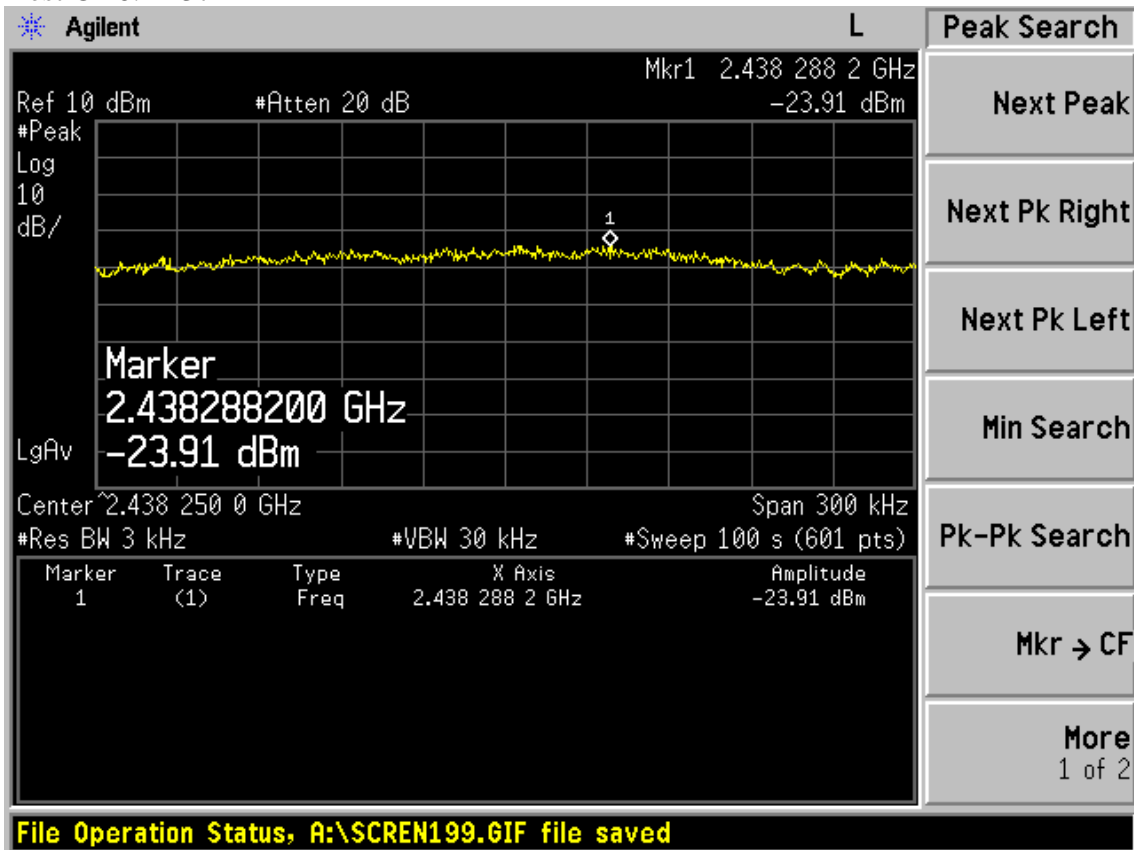


Test Mode: IEEE 802.11g TX

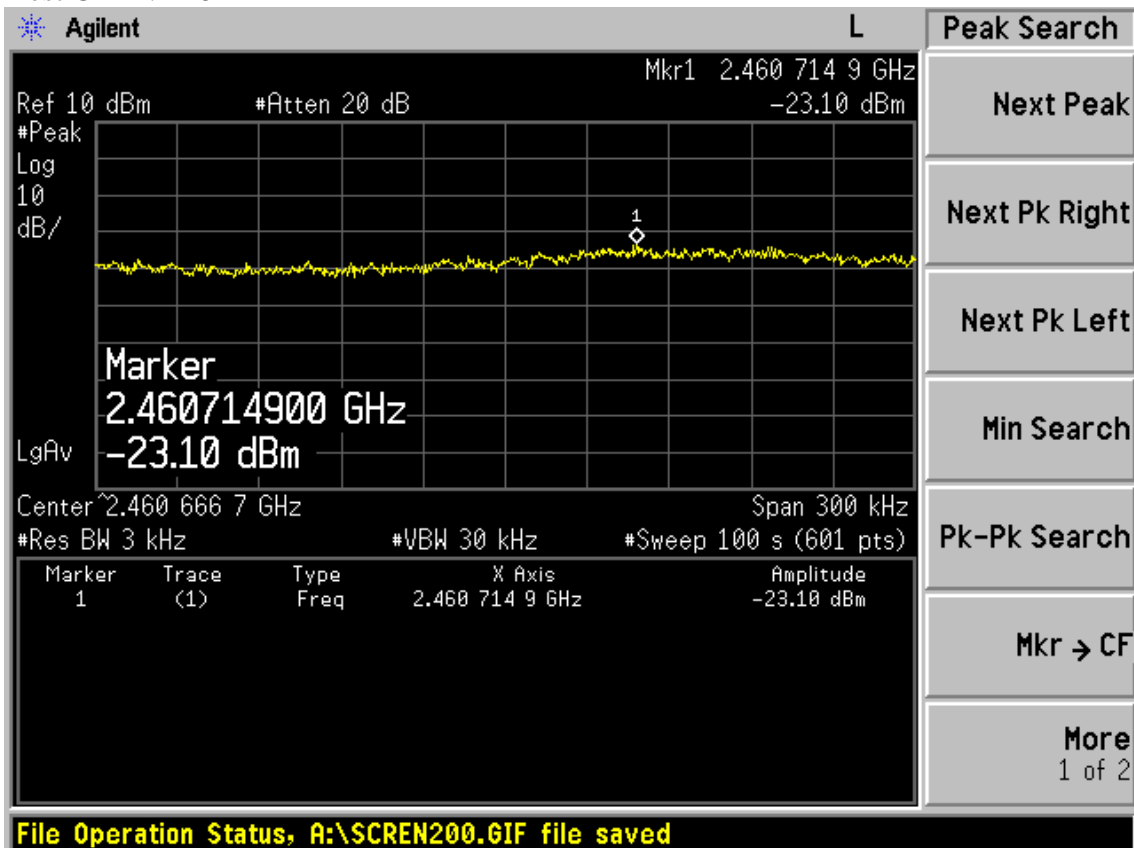
Test CH1: 2412MHz



Test CH6: 2437MHz

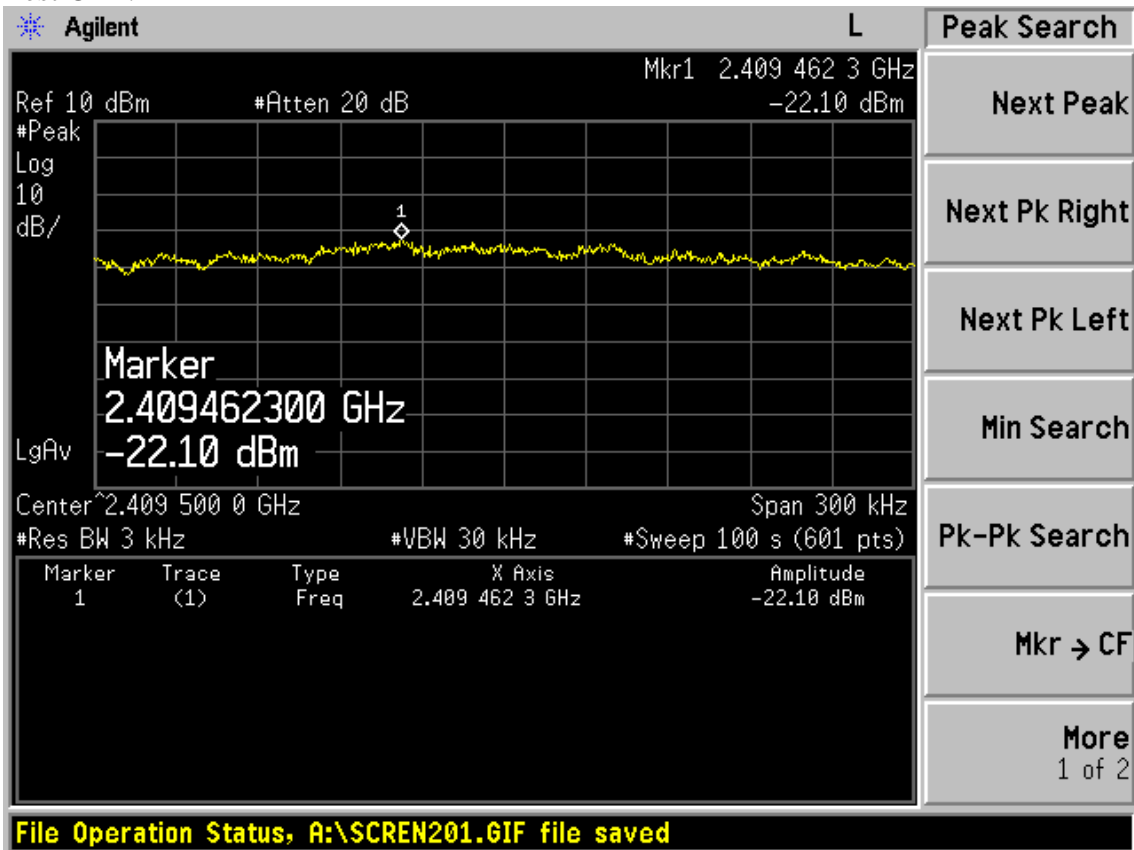


Test CH11: 2462MHz

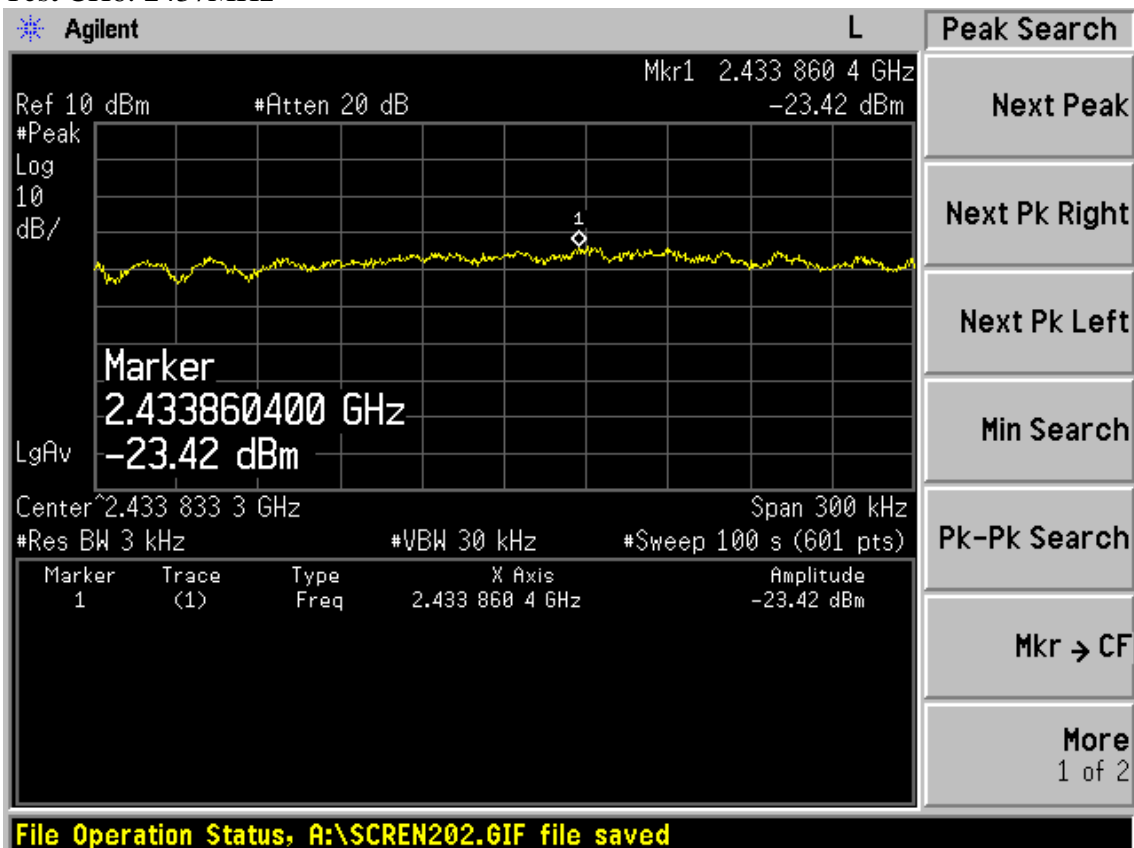


Test Mode: IEEE 802.11n HT20 TX

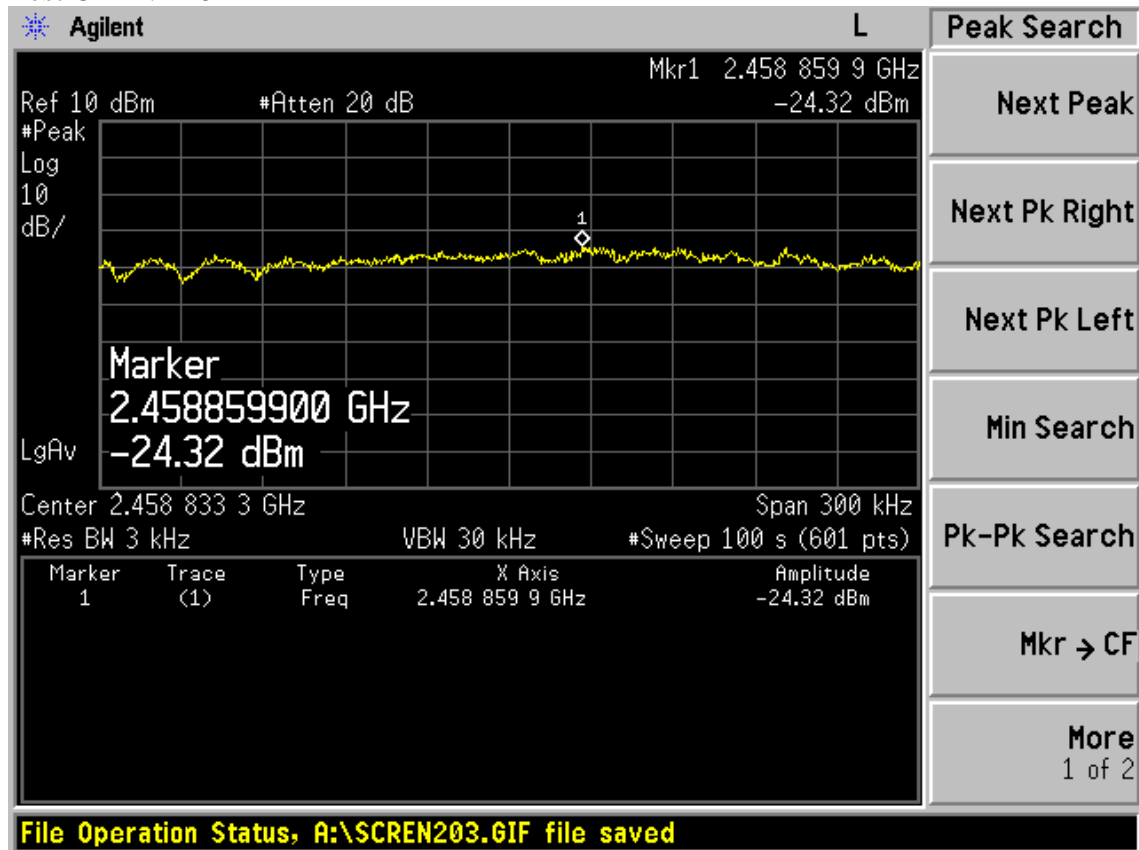
Test CH1: 2412MHz



Test CH6: 2437MHz

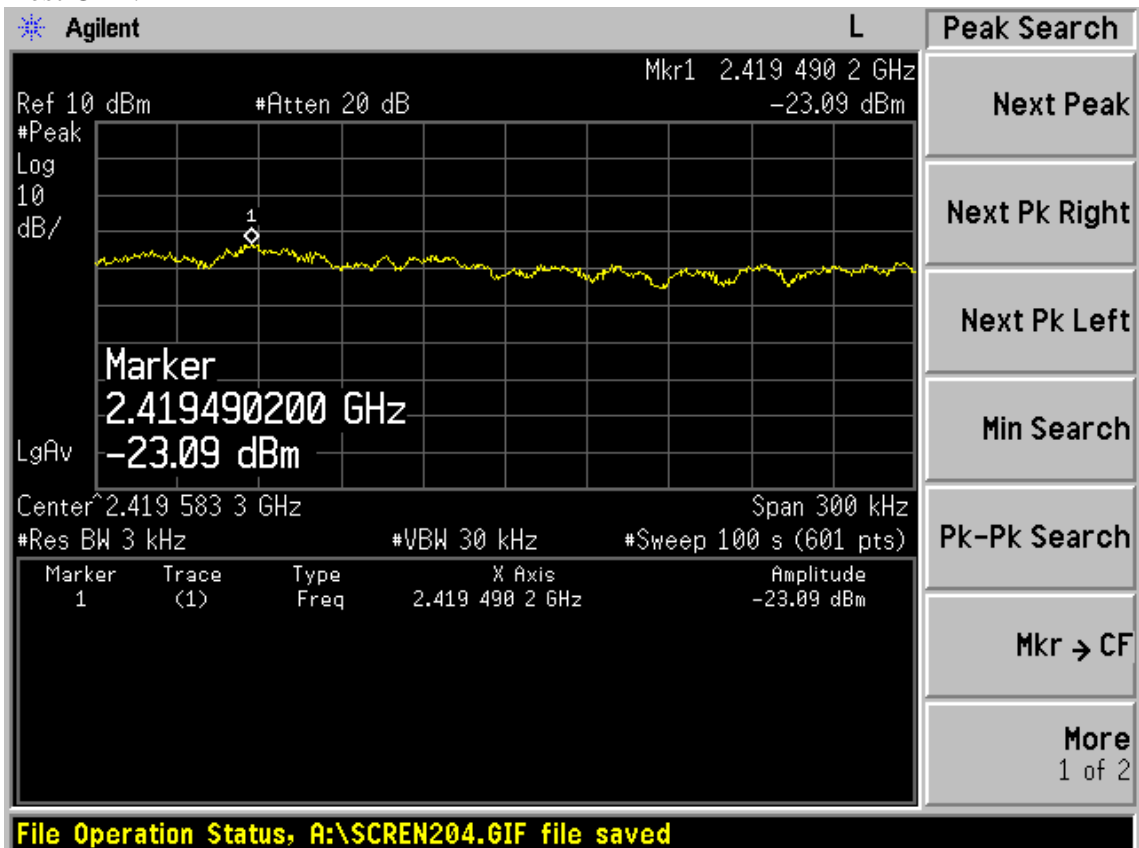


Test CH1: 2462MHz

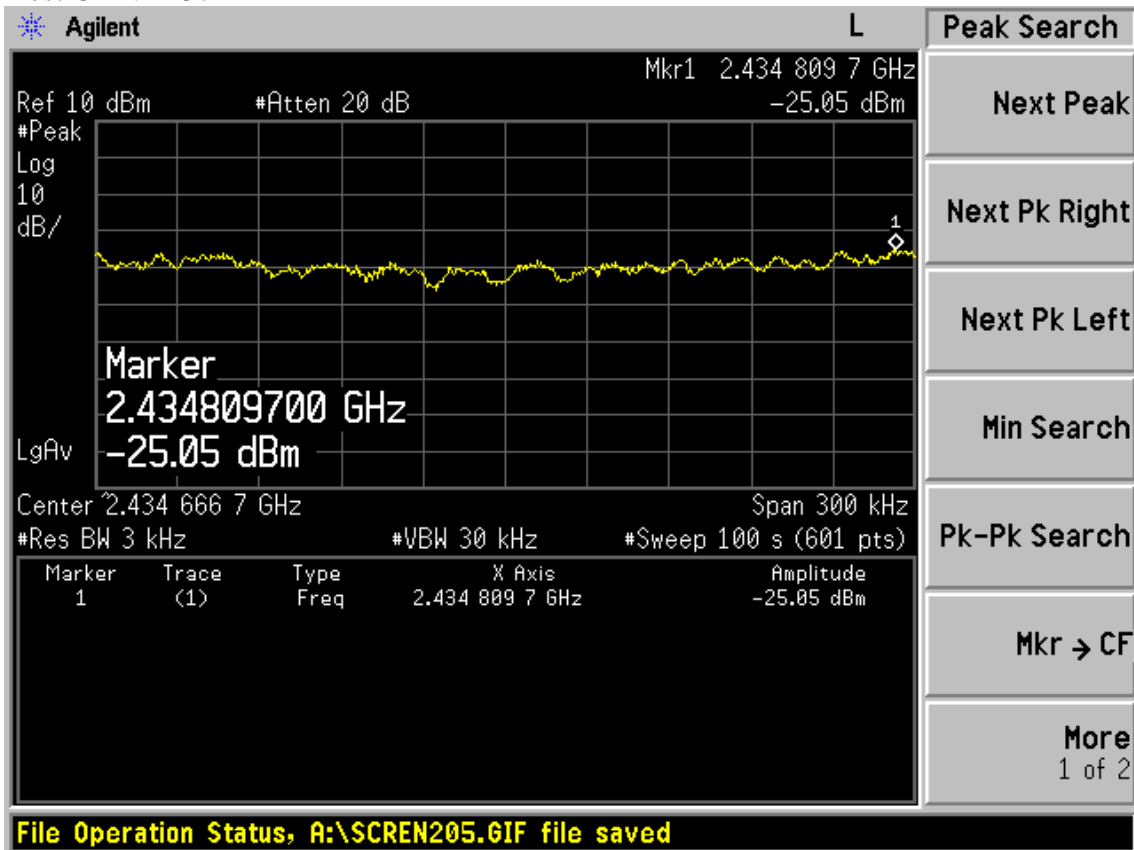


Test Mode: IEEE 802.11n HT40 TX

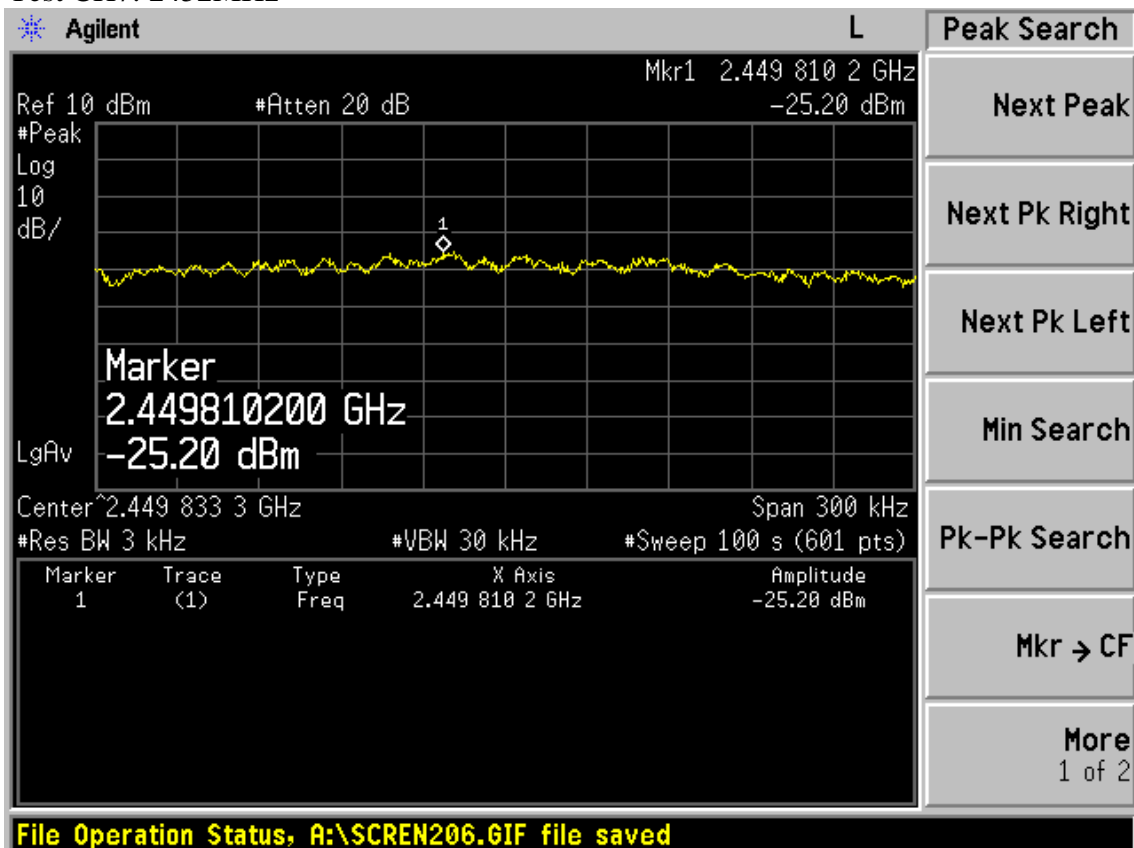
Test CH1: 2422MHz



Test CH4: 2437MHz



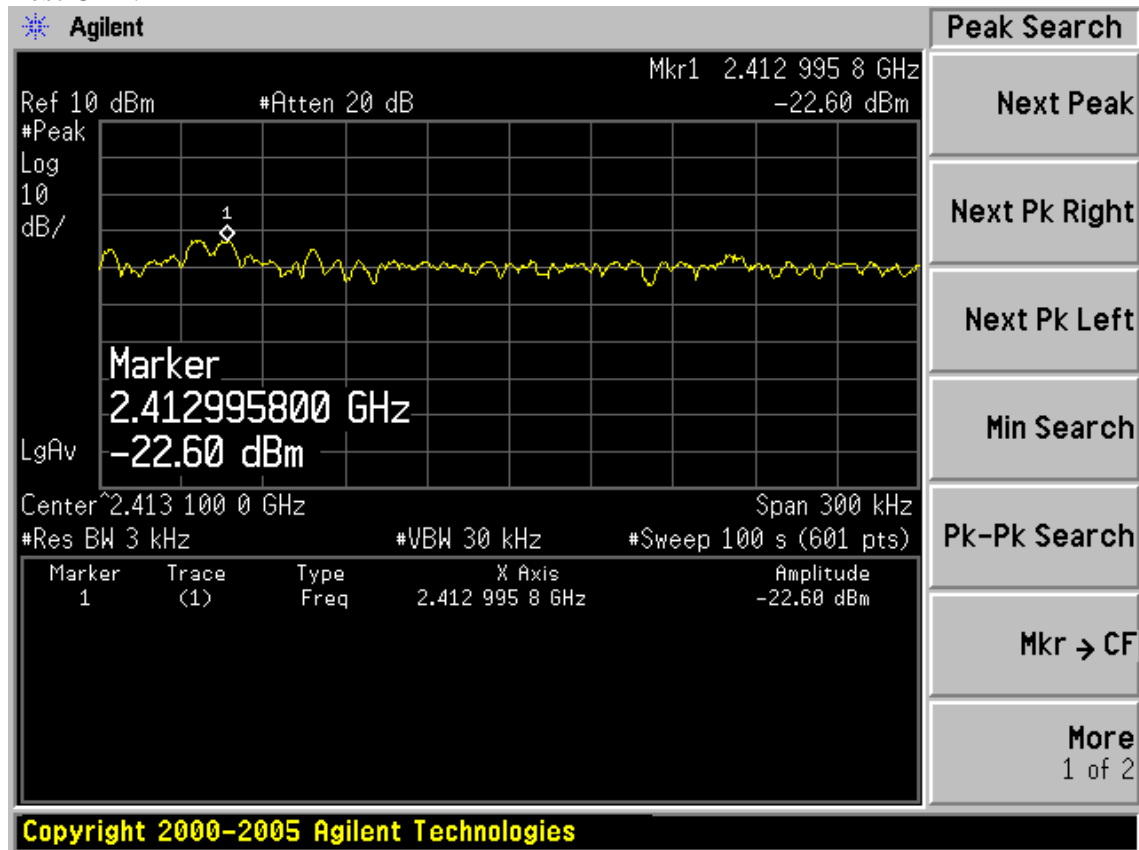
Test CH7: 2452MHz



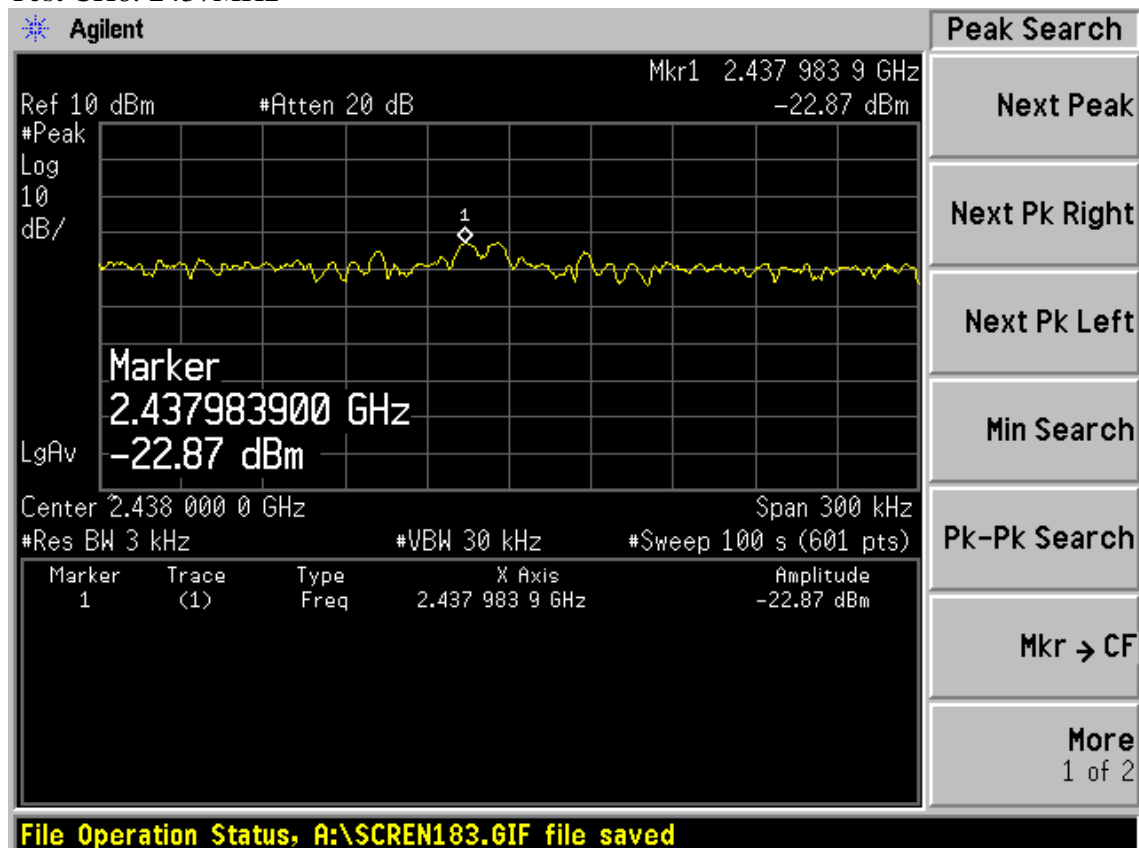
Chain 2:

Test Mode: IEEE 802.11b TX

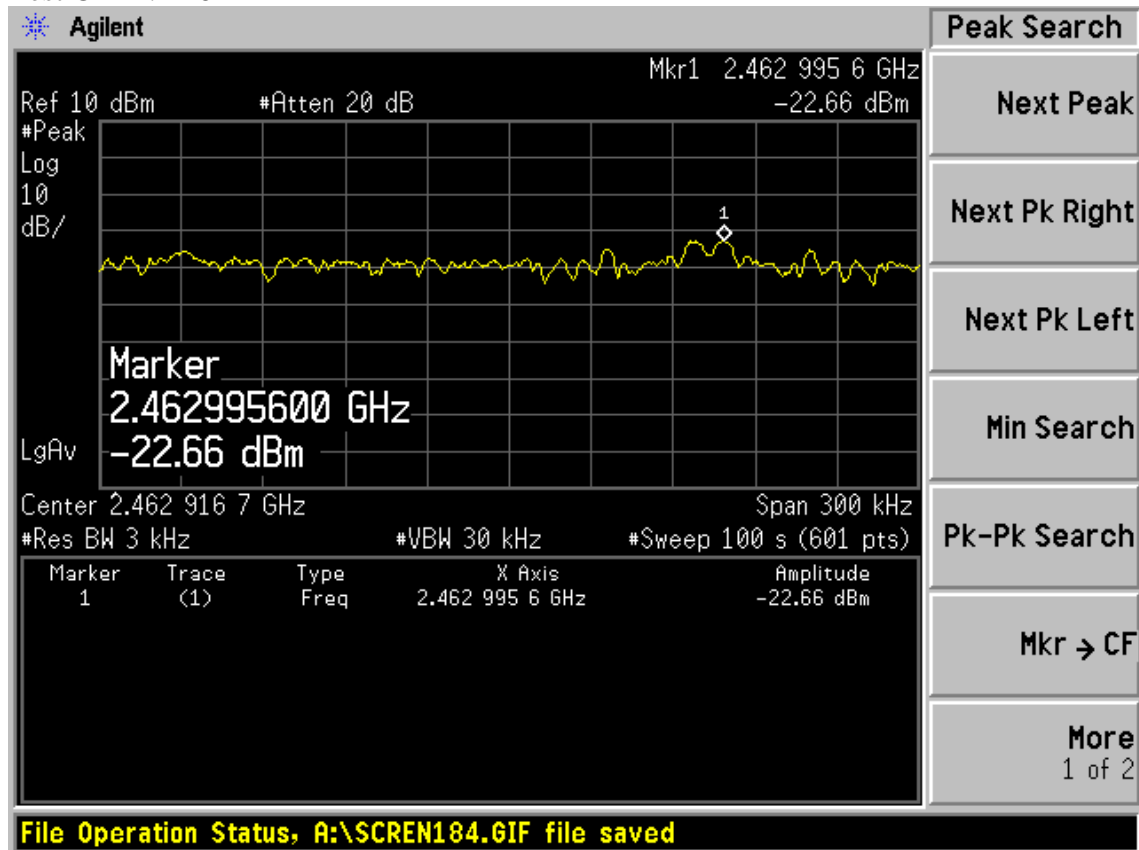
Test CH1: 2412MHz



Test CH6: 2437MHz

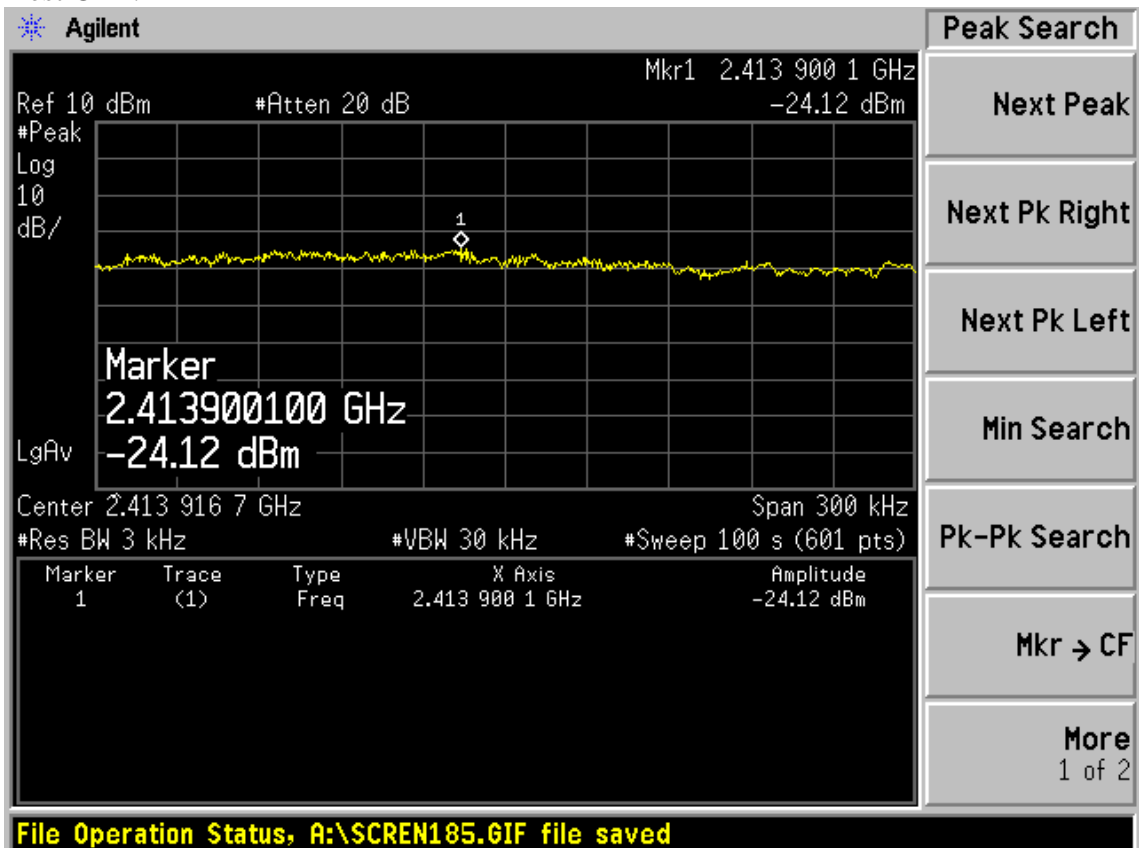


Test CH1: 2462MHz

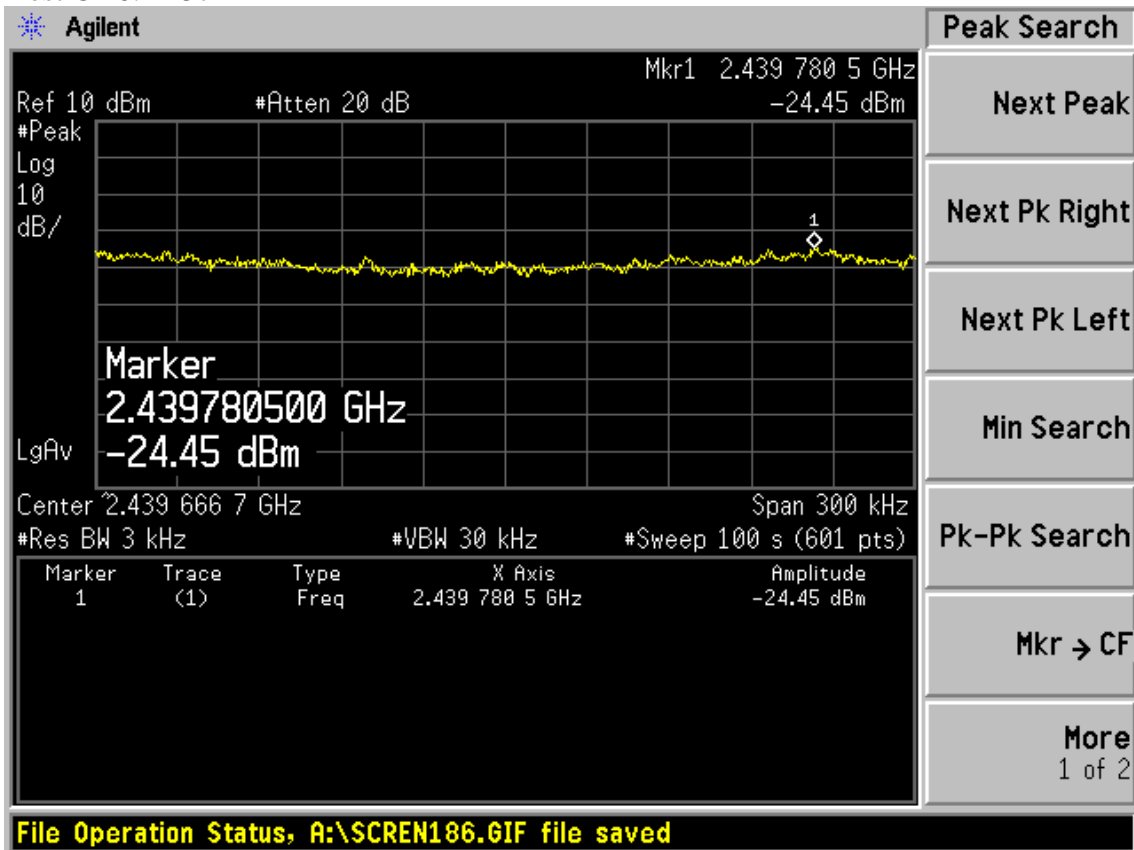


Test Mode: IEEE 802.11g TX

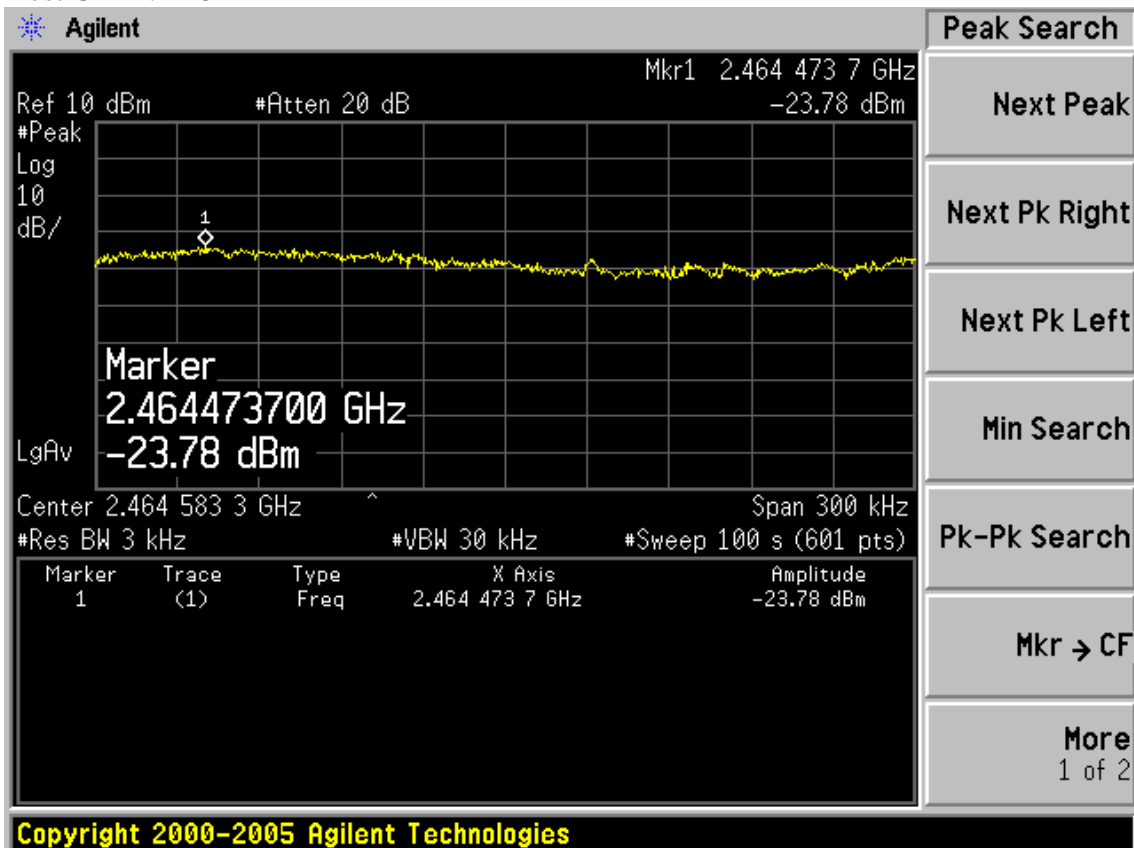
Test CH1: 2412MHz



Test CH6: 2437MHz

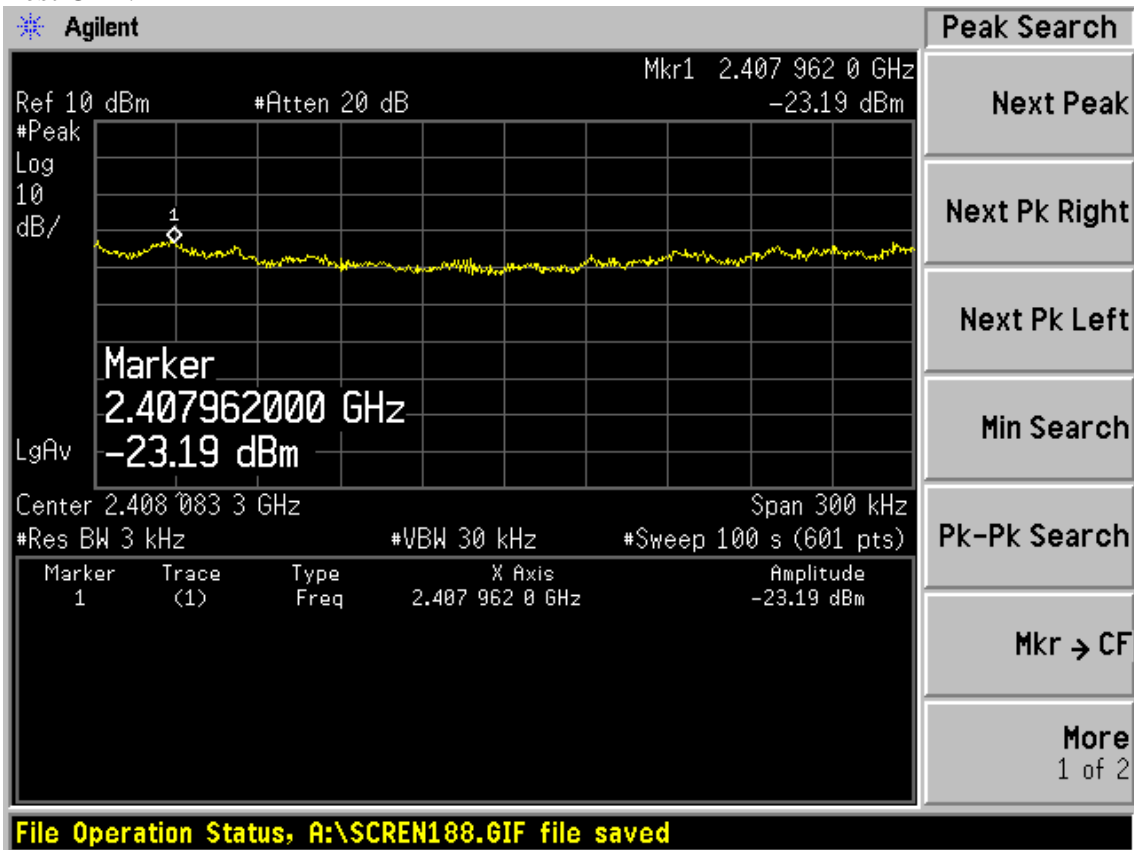


Test CH11: 2462MHz

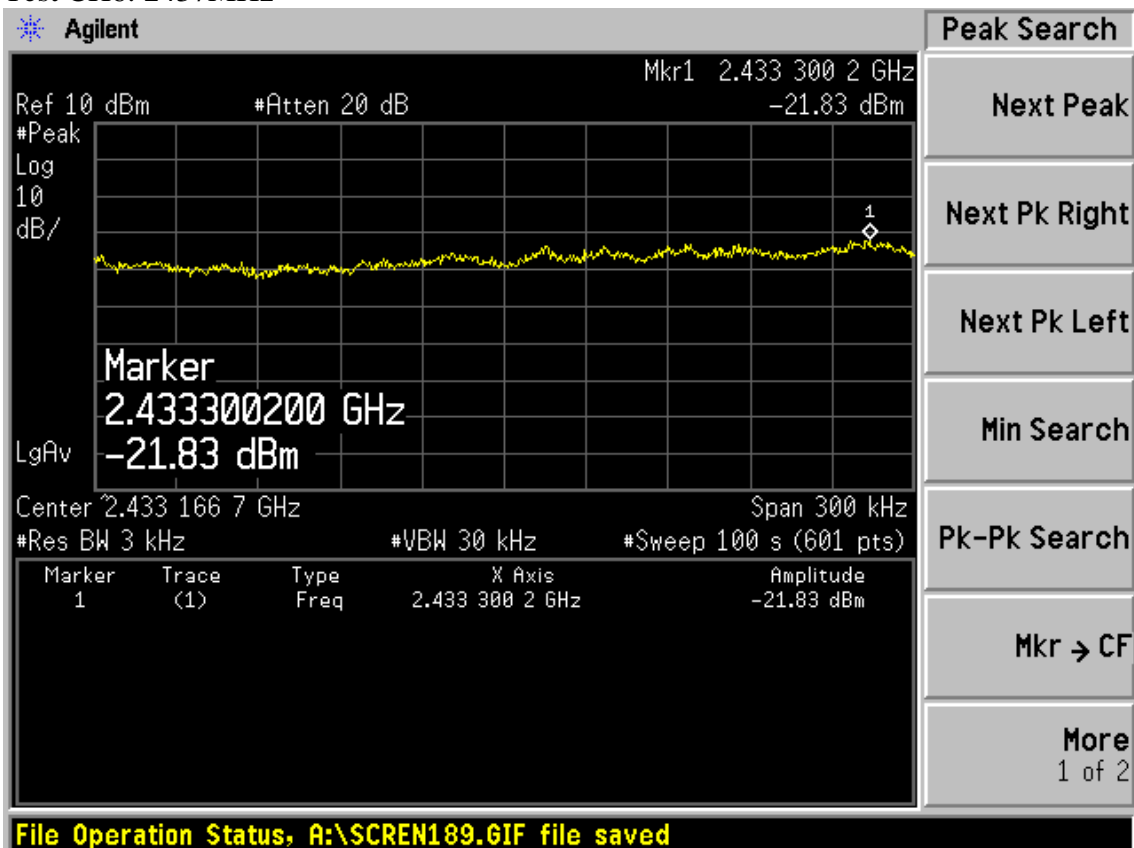


Test Mode: IEEE 802.11n HT20 TX

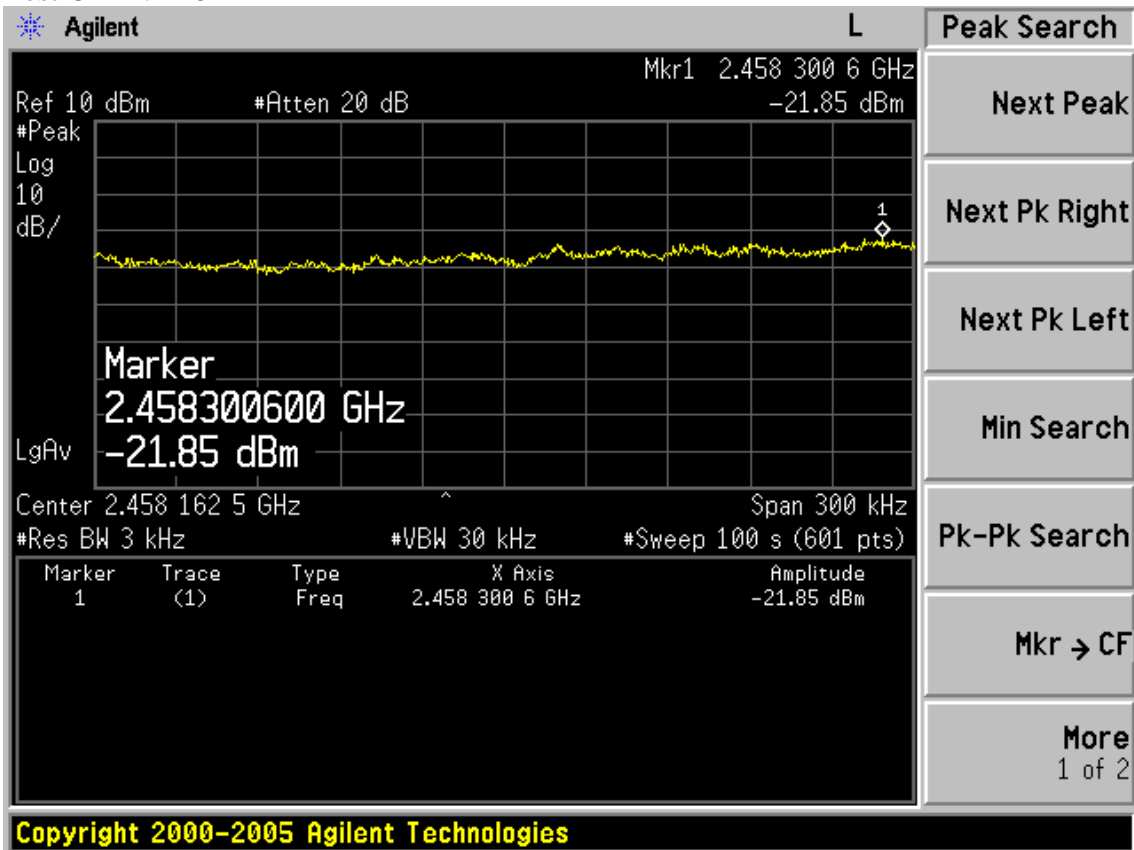
Test CH1: 2412MHz



Test CH6: 2437MHz

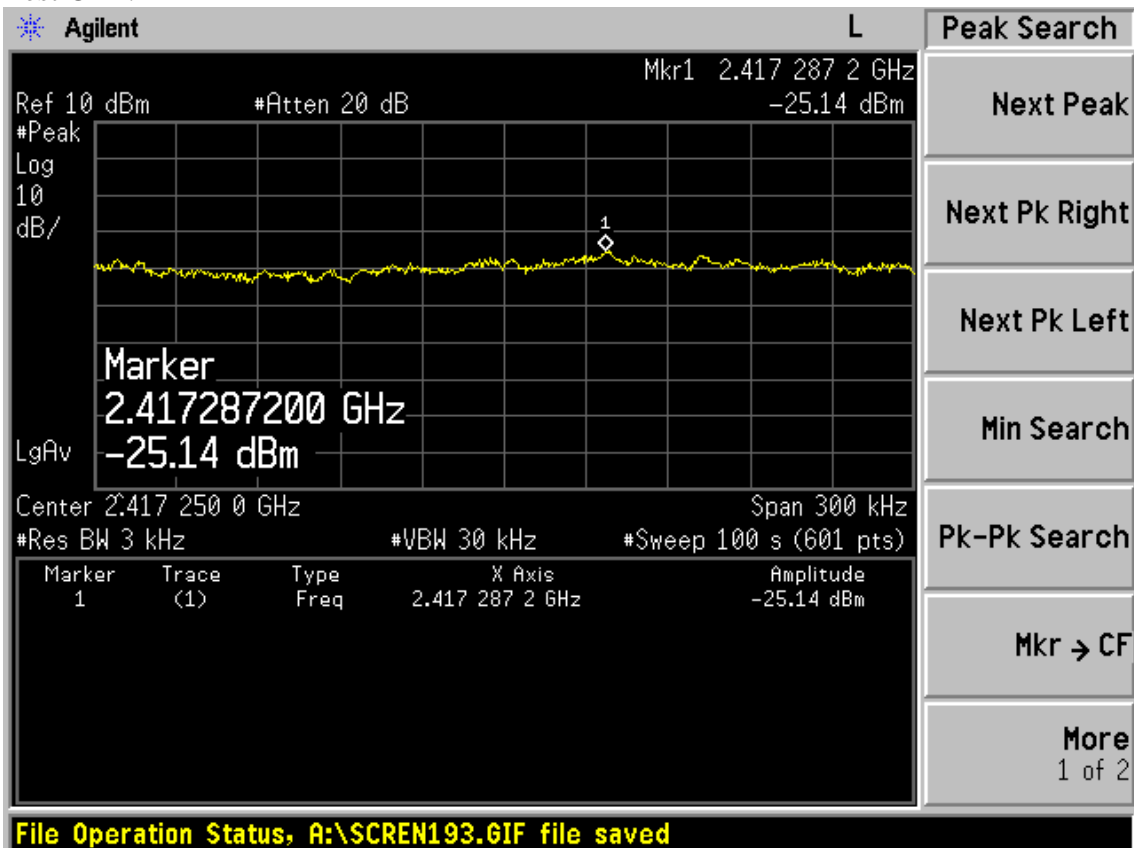


Test CH1: 2462MHz

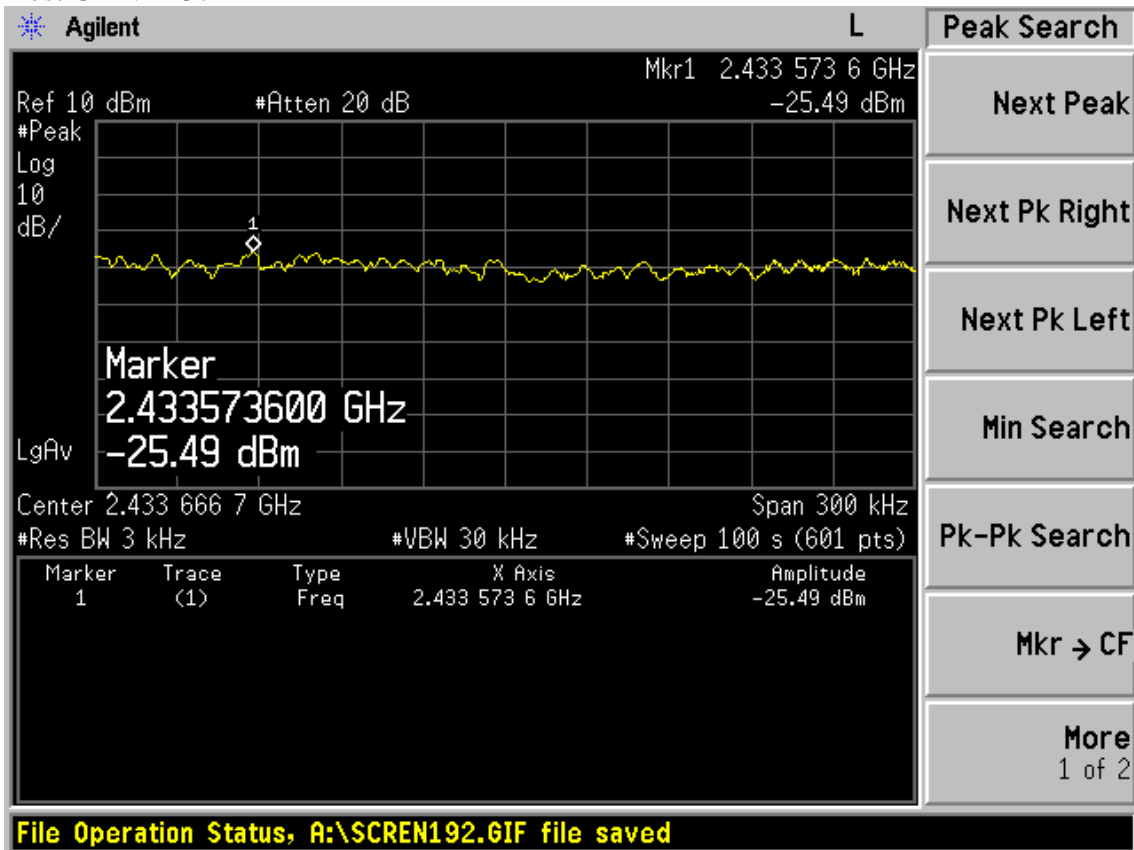


Test Mode: IEEE 802.11n HT40 TX

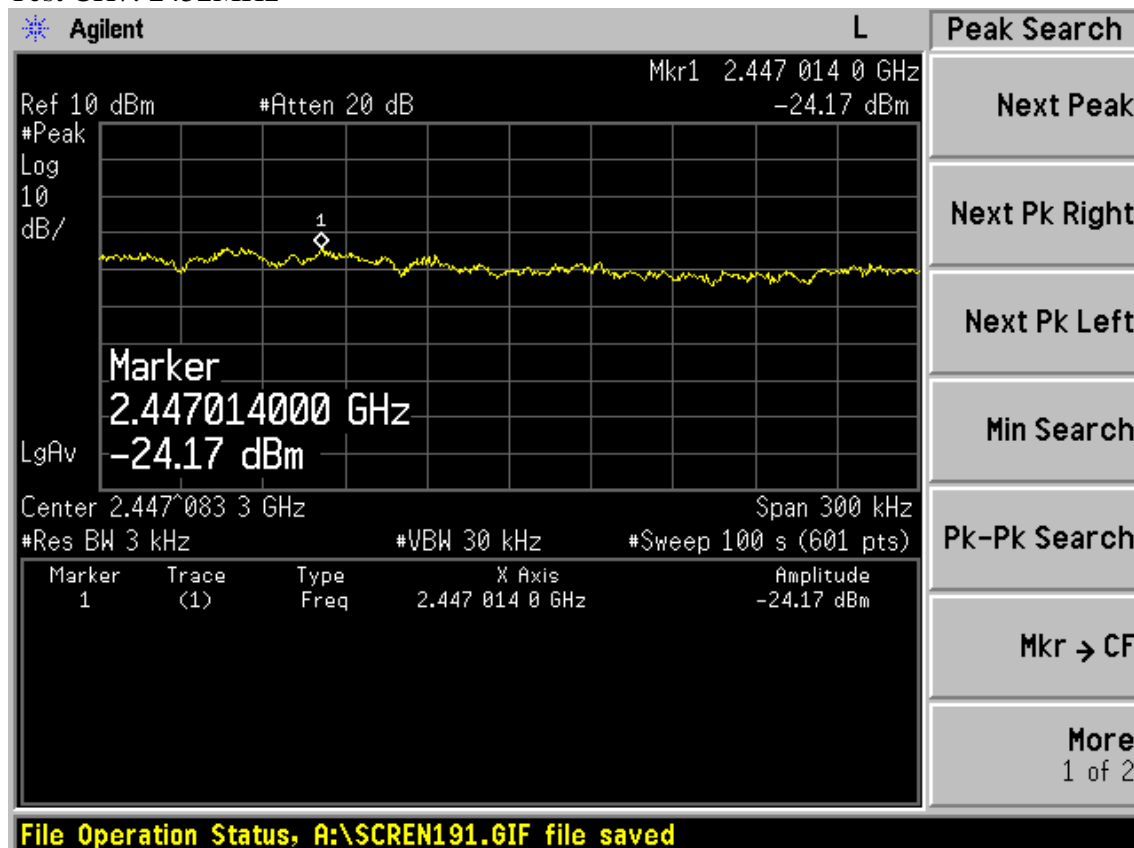
Test CH1: 2422MHz



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

The antennas used for this product are integral PCB Antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 1.82dBi.

11.DEVIATION TO TEST SPECIFICATIONS

[NONE]