

APPLICATION FOR CERTIFICATION

On Behalf of

TP-LINK Technologies Co., Ltd.

3G/3.75G Wireless Lite N Router

Model Number: TL-MR3220

FCC ID: TE7MR3220

Prepared for : TP-LINK Technologies Co., Ltd.  
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Date of Report : Jul.14, 2010

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## TEST REPORT CERTIFICATION

Applicant : TP-LINK Technologies Co., Ltd.

Manufacturer : TP-LINK Technologies Co., Ltd.

EUT Description : 3G/3.75G Wireless Lite N Router

FCC ID : TE7MR3220

(A)MODEL NO. : TL-MR3220

(B)SERIAL NO. : N/A

(C)POWER SUPPLY : DC 12V From Adapter

(D)TEST VOLTAGE : DC 12V From Adapter 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 : Jun.09~Jul.12, 2010

Prepared by :



Annie Wu/ Senior Assistant

Reviewer :



Jamy Yu / Supervisor

Approved &amp; 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.

<b>EMISSION</b>		
<b>Description of Test Item</b>	<b>Standard</b>	<b>Results</b>
Power Line Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.10: 2009	PASS
Radiated Emission Test	FCC Part 15: 15.209 ANSI C63.10: 2009	PASS
Band Edge Compliance Test	FCC Part 15: 15.247 ANSI C63.10: 2009	PASS
Conducted spurious emissions test	FCC Part 15: 15.247 ANSI C63.10: 2009	PASS
6dB Bandwidth Test	FCC Part 15: 15.247 ANSI C63.10: 2009	PASS
Output Power Test	FCC Part 15: 15.247 ANSI C63.10: 2009	PASS
Power Spectral Density Test	FCC Part 15: 15.247 ANSI C63.10: 2009	PASS
Antenna requirement	FCC Part 15: 15.203	PASS

## 2. GENERAL INFORMATION

### 2.1. Description of Device (EUT)

Product Name	: 3G/3.75G Wireless Lite N Router
Model Number	: TL-MR3220
FCC ID	: TE7MR3220
Operation Frequency	: IEEE 802.11b/g, 802.11n HT20: 2412MHz---2472MHz IEEE802.11n HT40: 2422MHz---2462MHz
Channel Number	: IEEE 802.11b/g, 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Modulation Technology	: IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20,HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Antenna and Gain	: One Dipole antenna, PK gain 5dBi One Integrated PCB antenna only used for Receive.
Applicant	: TP-LINK Technologies Co., Ltd. 1-6F, Building 2, Pingshandayuan Industrial, South Zone, Taoyuan Street, Nanshan District, Shenzhen, P.R.C.
Manufacturer	: TP-LINK Technologies Co., Ltd. 1-6F, Building 2, Pingshandayuan Industrial, South Zone, Taoyuan Street, Nanshan District, Shenzhen, P.R.C.
Power Adapter	: Manufacturer: LEADER ELECTRONICS INC. M/N: MT12-4120100-A1 Cable: Unshielded, Undetachable, 1.5m
Date of Test	: Jun.09~Jul.12, 2010
Date of Receipt	: Jun.07, 2010
Sample Type	: Prototype production

## 2.2. Test information

The test software “art.exe” was used to control EUT work in Continuous TX(100% duty cycle) 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	11	Low :CH1	2412
	11	Middle: CH6	2437
	11	High: CH11	2462
IEEE 802.11g	12	Low :CH1	2412
	12	Middle: CH6	2437
	12	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
Note1: According to exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.			

## 2.3. Data rate Vs Power

Mode	Data rate(Mbps)	CH	Level (dBm)	Limit (dBm)
11b	1	CH6	18.11	30
	2	CH6	17.98	30
	5.5	CH6	18.23	30
	11	CH6	18.67	30
11g	6	CH6	22.32	30
	9	CH6	22.11	30
	12	CH6	22.65	30
	18	CH6	22.43	30
	24	CH6	22.32	30
	36	CH6	22.41	30
	48	CH6	22.12	30
	54	CH6	22.30	30
11n HT20	6.5	CH6	23.26	30
	13	CH6	23.01	30
	19.5	CH6	23.11	30
	26	CH6	22.89	30
	39	CH6	22.78	30
	52	CH6	23.10	30
	58.5	CH6	23.14	30
	65	CH6	23.13	30
11n HT40	13.5	CH4	20.65	30
	27	CH4	20.43	30
	40.5	CH4	20.32	30
	54	CH4	20.12	30
	81	CH4	20.40	30
	108	CH4	20.21	30
	121.5	CH4	20.10	30
	135	CH4	20.15	30
When IEEE 802.11b's data rate was 11Mbps ; IEEE 802.11g's data rate was 12Mbps, IEEE 802.11n HT20's data rate was 6.5 Mbps; IEEE802.11n HT40's data rate was 13.5Mbps the EUT have maximum output power and all the test was performed in this data rate set.				



## 2.4. Tested Supporting System Details

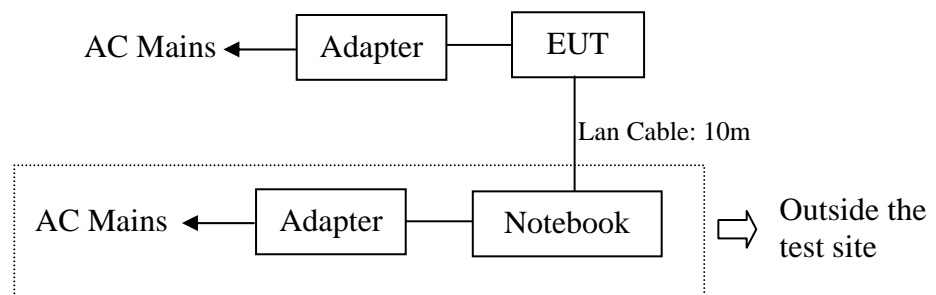
### 2.4.1. Notebook

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

### 2.4.2. Cables

LAN Cable : Unshielded, Detachable 10m

## 2.5. Block Diagram of Test Setup



**(EUT: 3G/3.75G Wireless Lite N Router)**

## 2.6. 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	:	Dec. 30, 2009 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, 2010

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

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	2.40dB
Uncertainty for Radiation Emission test in 3m chamber	3.82 dB (Polarize: V)
	4.32 dB (Polarize: H)
Uncertainty for Radiated Spurious Emission test in RF chamber	2.70 dB(Bilog antenna 30M~1000MHz)
	2.27 dB(Horn antenna 1000M~25000MHz)
Uncertainty for Conduction Spurious emission test	2.12 dB
Uncertainty for Output power test	0.97 dB
Uncertainty for Power density test	2.21 dB
Uncertainty for Temperature and humidity test	2%
	1°C
Uncertainty for Frequency range test	$1 \times 10^{-9}$
Uncertainty for Bandwidth test	$1 \times 10^{-9}$
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

### 3. POWER LINE CONDUCTED EMISSION TEST

#### 3.1. Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Dec.18, 09	1 Year
2.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	Mar.30, 10	1 Year
3.	Terminator	Hubersuhner	50Ω	No. 1	May.08, 10	1 Year
4.	RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.08, 10	1Year
5.	Coaxial Switch	Anritsu	MP59B	M55367	May.08, 10	1 Year
6.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 10	1 Year

#### 3.2. 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.

#### 3.3. 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.

##### 3.3.1.3G/3.75G Wireless Lite N Router (EUT)

Model Number : TL-MR3220

Serial Number : N/A

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

#### 3.4. Operating Condition of EUT

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

3.4.2.Turned on the power of all equipment.

3.4.3.Notebook run test software to control EUT work in Tx mode.

#### 3.5. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via Adapter connected to the power mains through a line impedance stabilization network (L.I.S.N. 1#). 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 C63.10: 2009 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 3.6.,

### 3.6. Power Line Conducted Emission Test Results

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

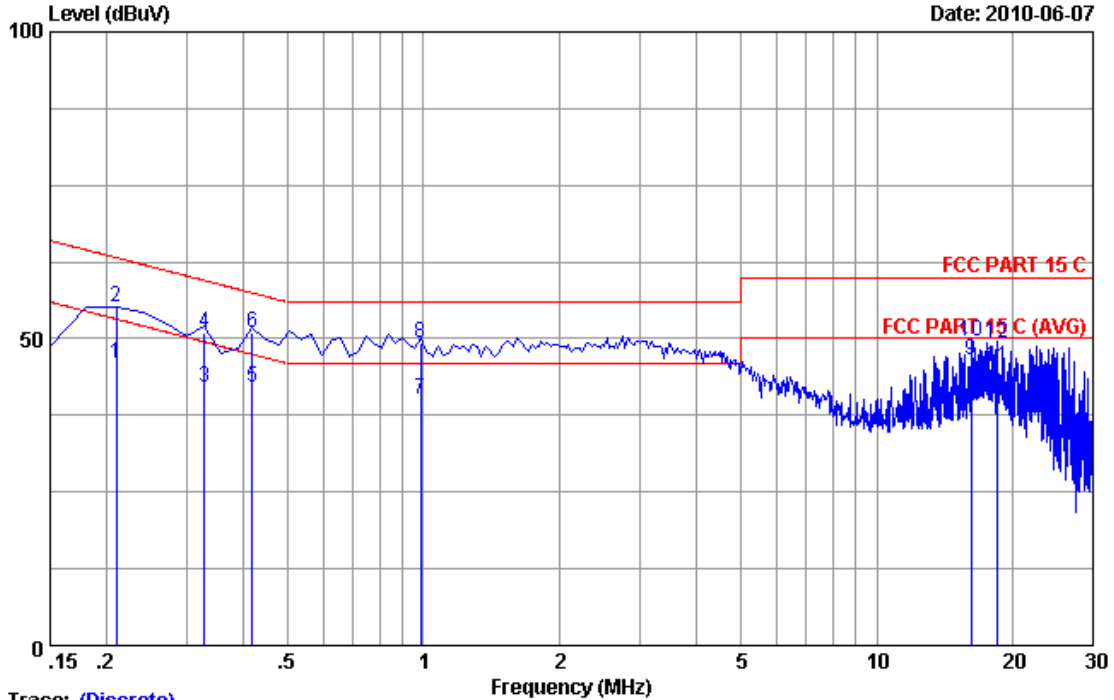


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Data: 2

File: D:\DATA\2010 REPORT\TP-LINK\ACS10Q1006.EM6 (10)

Date: 2010-06-07



Trace: (Discrete)

Site no :Audix No.1 Conduction Data no :2  
 Dis./Ant. :\*\* 2010 ESH2-25 L  
 Limit :FCC PART 15 C  
 Env./Ins. :Temp:23'C Humi:54% Engineer :Sunny-lu  
 EUT :3G/3.75G Wireless Lite N Router  
 Power Rating :DC 12V From Adapter input AC 120V/60Hz  
 Test Mode :Tx Mode  
 Memo :TL-MR3220

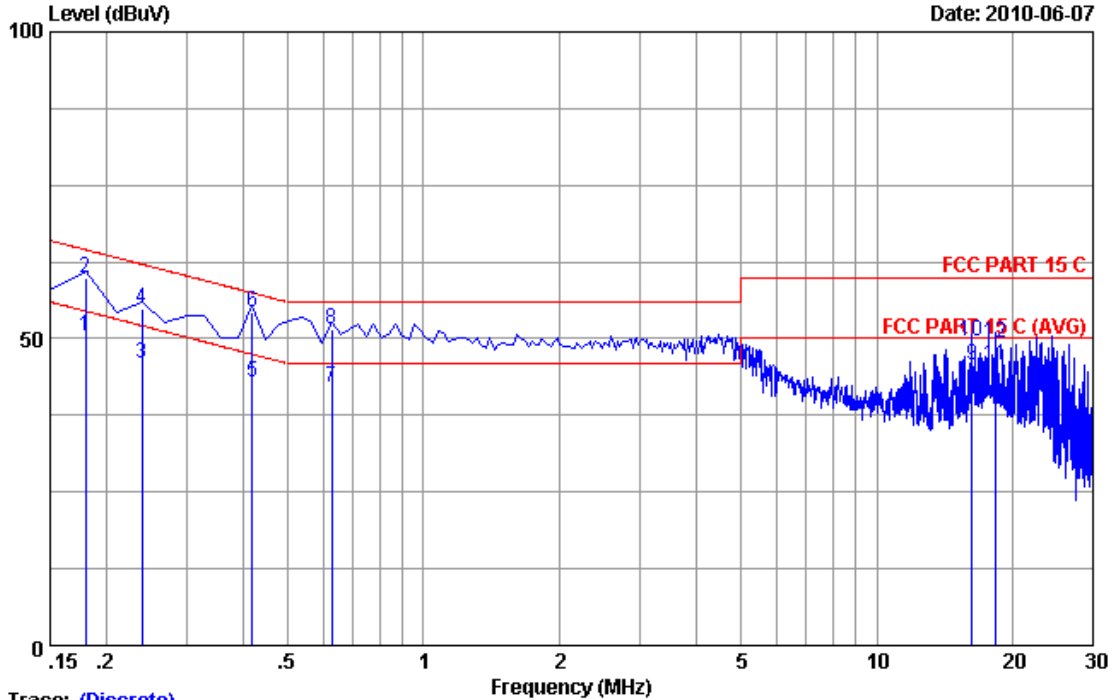
No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.20970	0.00	9.88	35.98	45.86	53.22	7.36	Average
2	0.20970	0.22	9.88	45.15	55.25	63.22	7.97	QP
3	0.32910	0.00	9.88	32.14	42.02	49.47	7.45	Average
4	0.32910	0.23	9.88	40.84	50.95	59.47	8.52	QP
5	0.41865	0.00	9.88	32.12	42.00	47.47	5.47	Average
6	0.41865	0.24	9.88	40.77	50.89	57.47	6.58	QP
7	0.98580	0.00	9.89	30.28	40.17	46.00	5.83	Average
8	0.98580	0.22	9.89	39.14	49.25	56.00	6.75	QP
9	16.150	0.00	10.04	36.45	46.49	50.00	3.51	Average
10	16.150	0.00	10.04	39.68	49.72	60.00	10.28	QP
11	18.478	0.00	10.07	35.21	45.28	50.00	4.72	Average
12	18.478	0.00	10.07	39.24	49.31	60.00	10.69	QP

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



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Data: 1 File: D:\DATA\2010 REPORT\TP-LINK\ACS10Q1006.EM6 (10)



Trace: (Discrete)

Site no :Audix No.1 Conduction Data no :1  
 Dis./Ant. \*\*: 2010 ESH2-25 N  
 Limit :FCC PART 15 C  
 Env./Ins. :Temp:23'C Humi:54% Engineer :Sunny-lu  
 EUT :3G/3.75G Wireless Lite N Router  
 Power Rating :DC 12V From Adapter input AC 120V/60Hz  
 Test Mode :Tx Mode  
 Memo :TL-MR3220

No	Freq (MHz)	LISN Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV)	Limits (dBuV)	Margin (dB)	Remark
1	0.17985	0.00	9.88	40.62	50.50	54.49	3.99	Average
2	0.17985	0.21	9.88	49.84	59.93	64.49	4.56	QP
3	0.23955	0.00	9.88	36.14	46.02	52.11	6.09	Average
4	0.23955	0.21	9.88	44.76	54.85	62.11	7.26	QP
5	0.41865	0.00	9.88	33.02	42.90	47.47	4.57	Average
6	0.41865	0.22	9.88	44.31	54.41	57.47	3.06	QP
7	0.62760	0.00	9.88	32.13	42.01	46.00	3.99	Average
8	0.62760	0.23	9.88	41.44	51.55	56.00	4.45	QP
9	16.209	0.00	10.04	35.58	45.62	50.00	4.38	Average
10	16.209	0.00	10.04	39.62	49.66	60.00	10.34	QP
11	18.239	0.00	10.07	35.58	45.65	50.00	4.35	Average
12	18.239	0.00	10.07	39.26	49.33	60.00	10.67	QP

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

## 4. RADIATED EMISSION TEST

### 4.1. Test Equipment

Frequency rang: 30~1000MHz

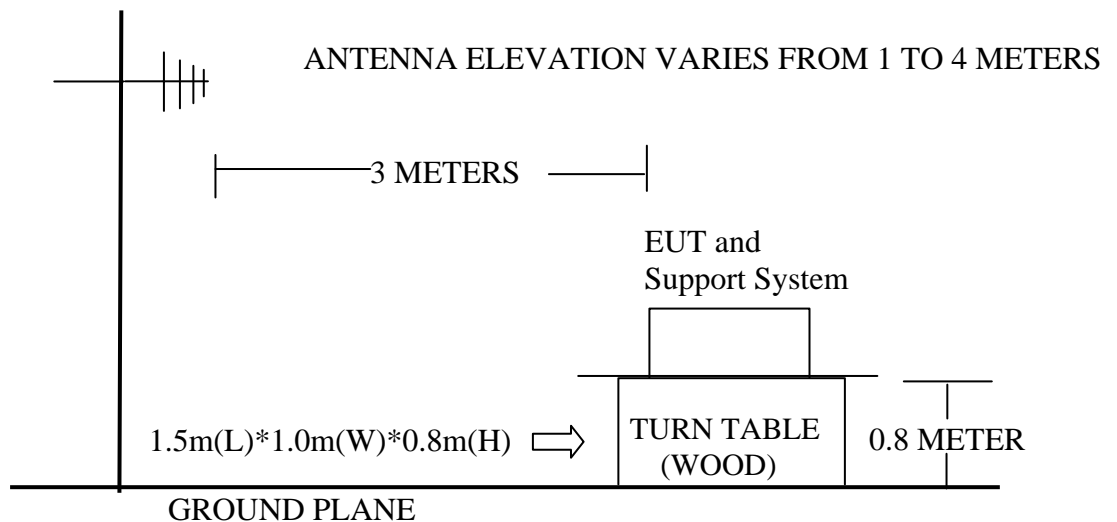
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,09	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 10	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 10	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 10	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Dec.14, 09	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 10	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 10	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, 10	1 Year
2	Horn Antenna	EMCO	3115	9510-4580	Nov.19, 09	1.5 Year
3	Horn Antenna	EMCO	3116	00060088	Nov.25, 09	1.5 Year
4	Amplifier	Agilent	8449B	3008A00863	May.08, 10	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08, 10	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08, 10	1 Year
7	RF Cable	Hubersuhner	SUCOFLEX102	28610/2	May.08, 10	1 Year

#### 4.1.1. In Anechoic Chamber

##### ANTENNA TOWER



## 4.2. Radiated Emission Limit

### 4.2.1.15.209 limits

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
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 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

- Remark :
- (1) Emission level  $\text{dB}\mu\text{V} = 20 \log$  Emission level  $\mu\text{V}/\text{m}$
  - (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.

### 4.2.2.15.205 Restricted bands of operation

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

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

## 4.3. 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.

### 4.3.1.3G/3.75G Wireless Lite N Router (EUT)

Model Number : TL-MR3220  
Serial Number : N/A

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



#### 4.4. Operating Condition of EUT

4.4.1. Setup the EUT and simulator as shown as Section 2.4

4.4.2. Turned on the power of all equipment.

4.4.3. Notebook run test software to control EUT work in test mode.

#### 4.5. 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 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

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

#### 4.6. Radiated Emission Test Results

**PASS.**

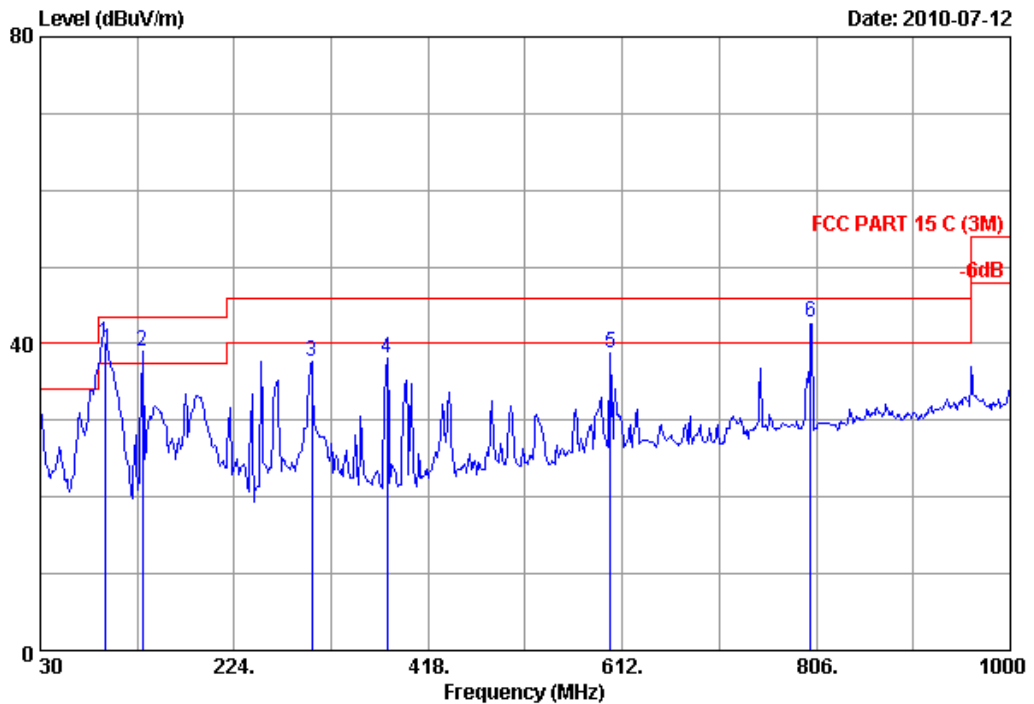
All the emissions from 30MHz to 25 GHz were comply with 15.209 limits.

Frequency: 30MHz~1GHz



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Data: 5 File: D:\2010 Report Data\T\TTP\_LINK\ACS10Q1006.EM6 (6)



Site no. : 3m Chamber Data no. : 5  
 Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 24°C/56% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power rating : DC 12V From Adapter input AC 120V/60Hz  
 Test Mode : Tx Mode  
 : TL-MR3220

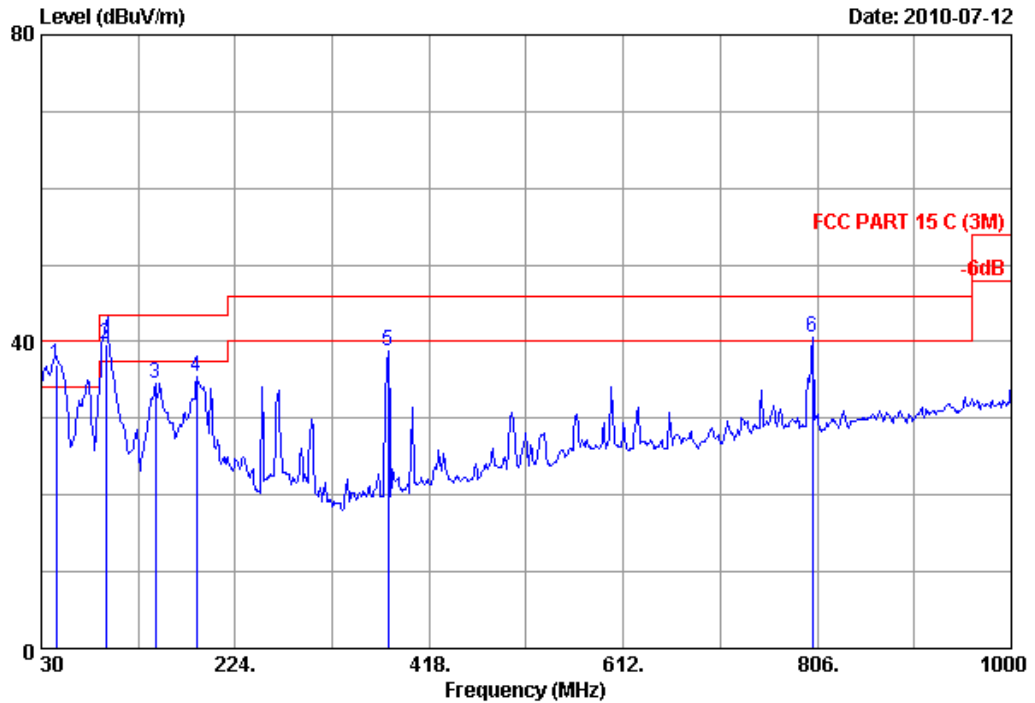
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	94.380	9.58	1.08	29.50	40.16	43.50	3.34	QP
2	131.850	12.16	1.13	53.61	38.94	43.50	4.56	QP
3	301.600	13.75	2.49	50.00	37.62	46.00	8.38	QP
4	377.260	15.64	2.81	48.34	38.08	46.00	7.92	QP
5	600.360	19.90	4.12	43.35	38.69	46.00	7.31	QP
6	800.000	22.00	4.90	15.90	42.80	46.00	3.20	QP

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



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Data: 6 File: D:\2010 Report Data\T\TP\_LINK\ACS10Q1006.EM6 (6)



Site no. : 3m Chamber Data no. : 6  
 Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 24°C/56% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power rating : DC 12V From Adapter input AC 120V/60Hz  
 Test Mode : Tx Mode  
 : TL-MR3220

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	44.550	11.80	0.73	24.53	37.06	40.00	2.94	QP
2	94.350	9.58	1.08	29.10	39.76	43.50	3.74	QP
3	144.460	11.92	1.14	21.53	34.59	43.50	8.91	QP
4	185.200	9.30	1.55	24.68	35.53	43.50	7.97	QP
5	377.260	15.64	2.81	20.29	38.74	46.00	7.26	QP
6	801.150	22.00	4.90	13.69	40.59	46.00	5.41	QP

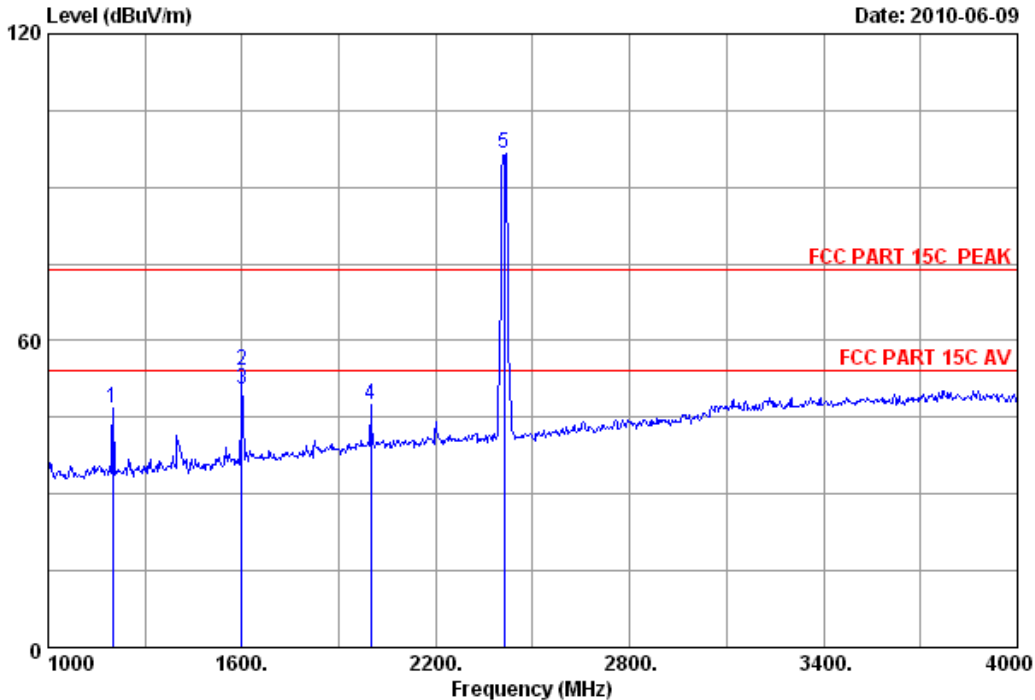
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz



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Data: 1 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104) Date: 2010-06-09



Site no. : 3m Chamber Data no. : 1  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant. 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	1201.000	25.81	5.98	36.97	52.14	46.96	74.00	27.04	Peak
2	1600.000	26.96	6.98	36.43	56.52	54.03	74.00	19.97	Peak
3	1600.000	26.96	6.98	36.43	52.85	50.36	54.00	3.64	Average
4	1999.000	29.20	7.93	36.09	46.26	47.30	74.00	26.70	Peak
5	2412.000	29.45	8.72	35.95	94.35	96.57	74.00	-22.57	Peak

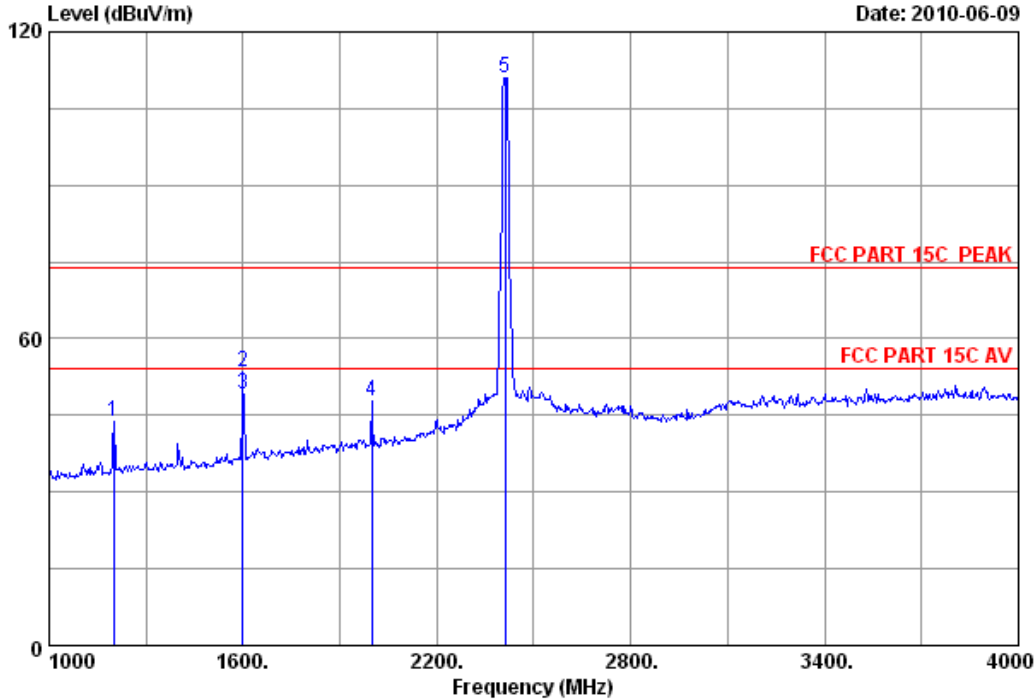
Remarks:

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



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Data: 2 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 2  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	48.86	43.68	74.00	30.32	Peak
2	1600.000	26.96	6.98	36.43	55.88	53.39	74.00	20.61	Peak
3	1600.000	26.96	6.98	36.43	51.65	49.16	54.00	4.84	Average
4	1999.000	29.20	7.93	36.09	46.62	47.66	74.00	26.34	Peak
5	2412.000	29.45	8.72	35.95	108.88	111.10	74.00	-37.10	Peak

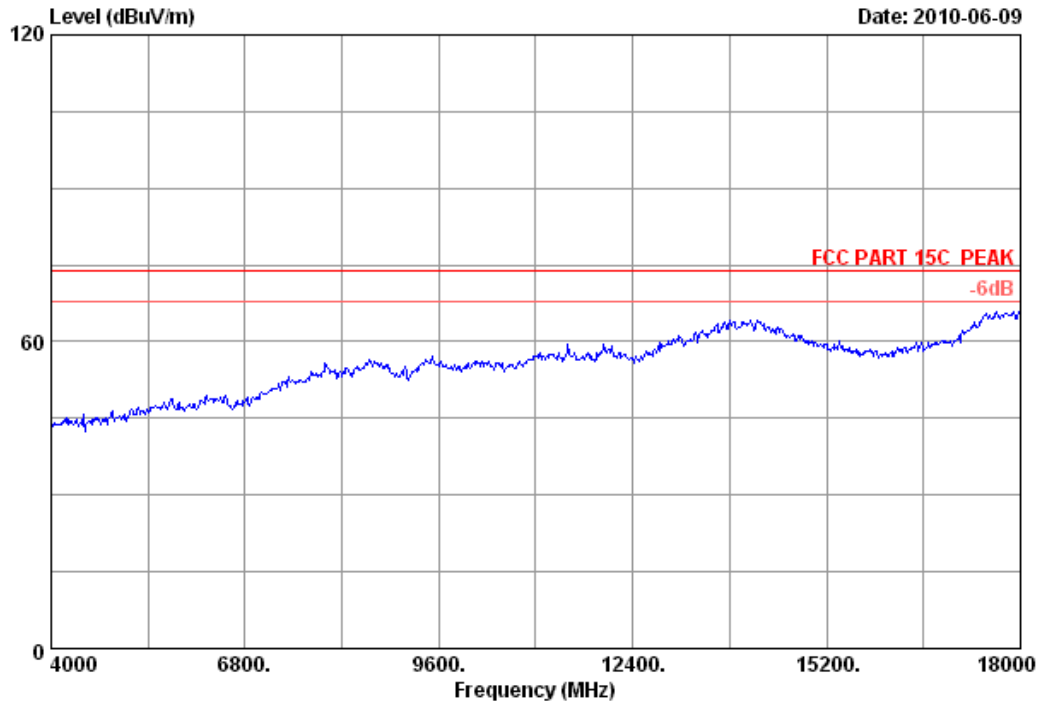
Remarks:

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



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Data: 3 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

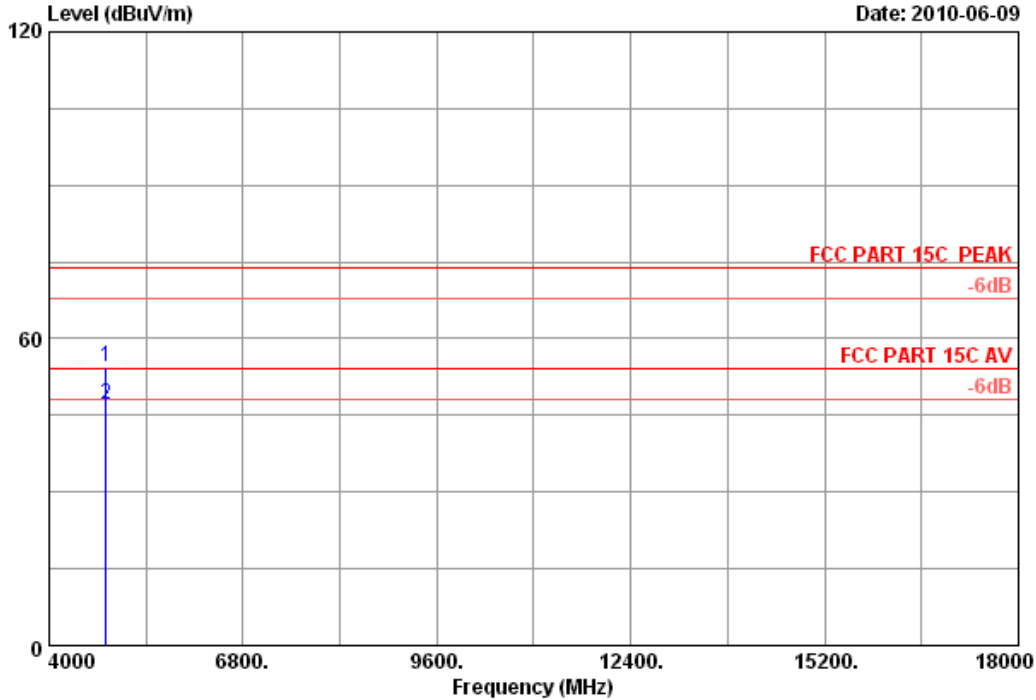


Site no.	: 3m Chamber	Data no.	: 3
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11b CH1 2412MHz Tx		
M/N	: TL-MR3220		



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Data: 4 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 4  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 4824.000	34.32	12.38	35.25	43.10	54.55	74.00	19.45	Peak	
2 4824.000	34.32	12.38	35.25	35.62	47.07	54.00	6.93	Average	

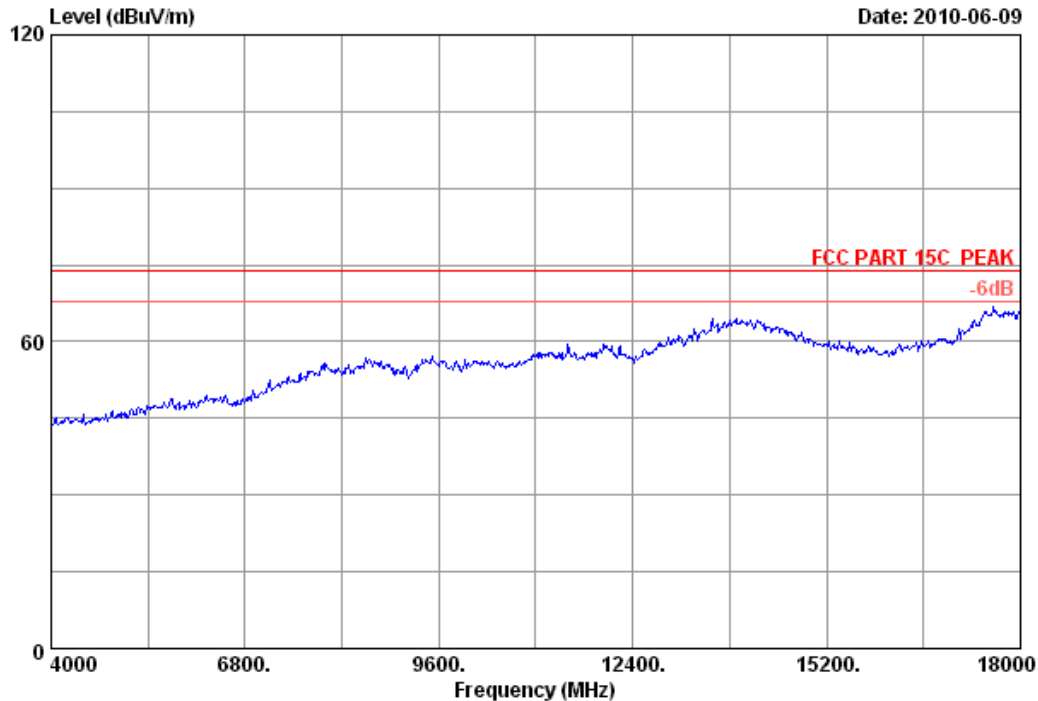
Remarks:

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



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Data: 5 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



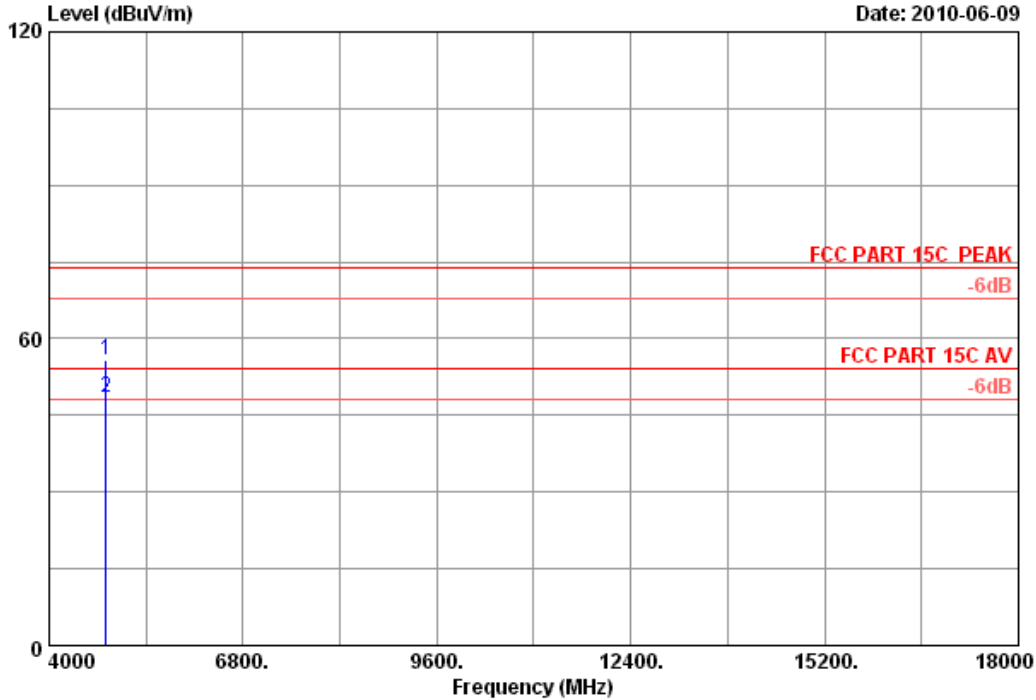
Site no.	: 3m Chamber	Data no.	: 5
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11b CH1 2412MHz Tx		
M/N	: TL-MR3220		





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Data: 6 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 6  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	44.33	55.78	74.00	18.22	Peak
2	4824.000	34.32	12.38	35.25	36.98	48.43	54.00	5.57	Average

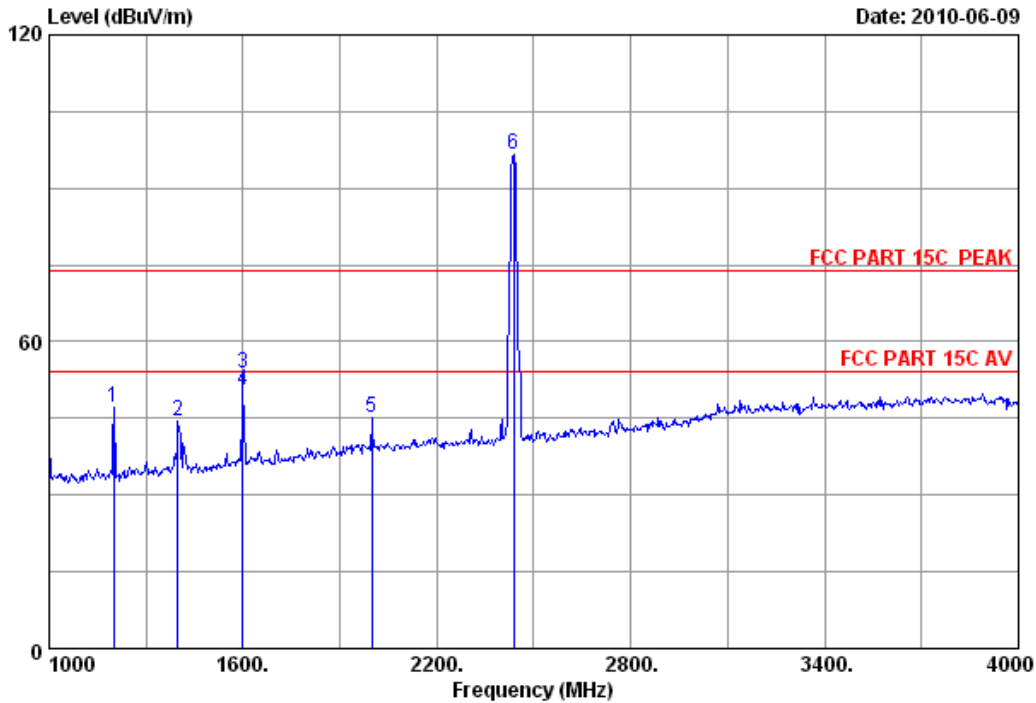
Remarks:

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



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Data: 11 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 11  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1201.000	25.81	5.98	36.97	52.24	47.06	74.00	26.94	Peak
2	1399.000	26.19	6.49	36.69	48.59	44.58	74.00	29.42	Peak
3	1600.000	26.96	6.98	36.43	56.24	53.75	74.00	20.25	Peak
4	1600.000	26.96	6.98	36.43	52.89	50.40	54.00	3.60	Average
5	1999.000	29.20	7.93	36.09	44.24	45.28	74.00	28.72	Peak
6	2437.000	29.47	8.77	36.06	94.38	96.56	74.00	-22.56	Peak

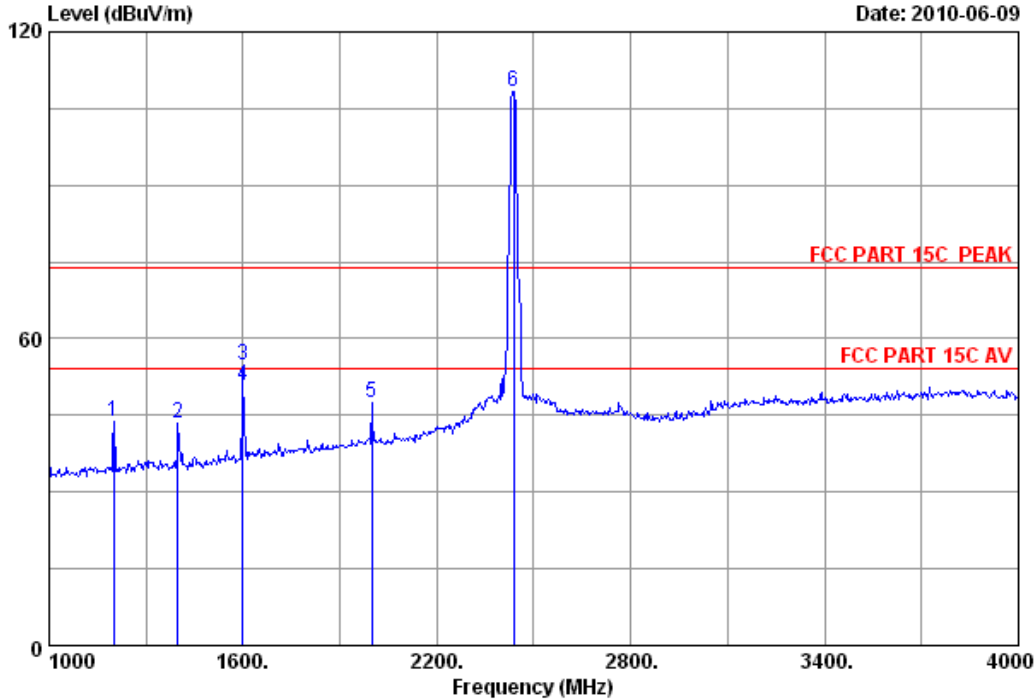
Remarks:

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



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Data: 12 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 12  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	49.09	43.91	74.00	30.09	Peak
2	1399.000	26.19	6.49	36.69	47.57	43.56	74.00	30.44	Peak
3	1600.000	26.96	6.98	36.43	57.24	54.75	74.00	19.25	Peak
4	1600.000	26.96	6.98	36.43	53.34	50.85	54.00	3.15	Average
5	1999.000	29.20	7.93	36.09	46.35	47.39	74.00	26.61	Peak
6	2437.000	29.47	8.77	36.06	106.25	108.43	74.00	-34.43	Peak

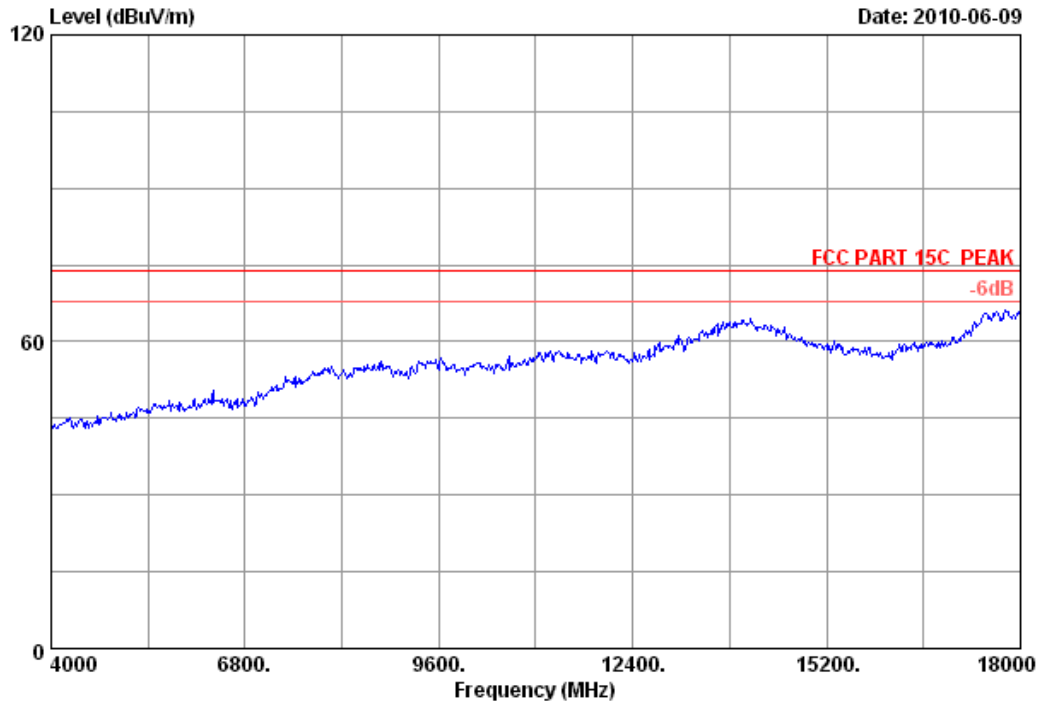
Remarks:

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



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Data: 7 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

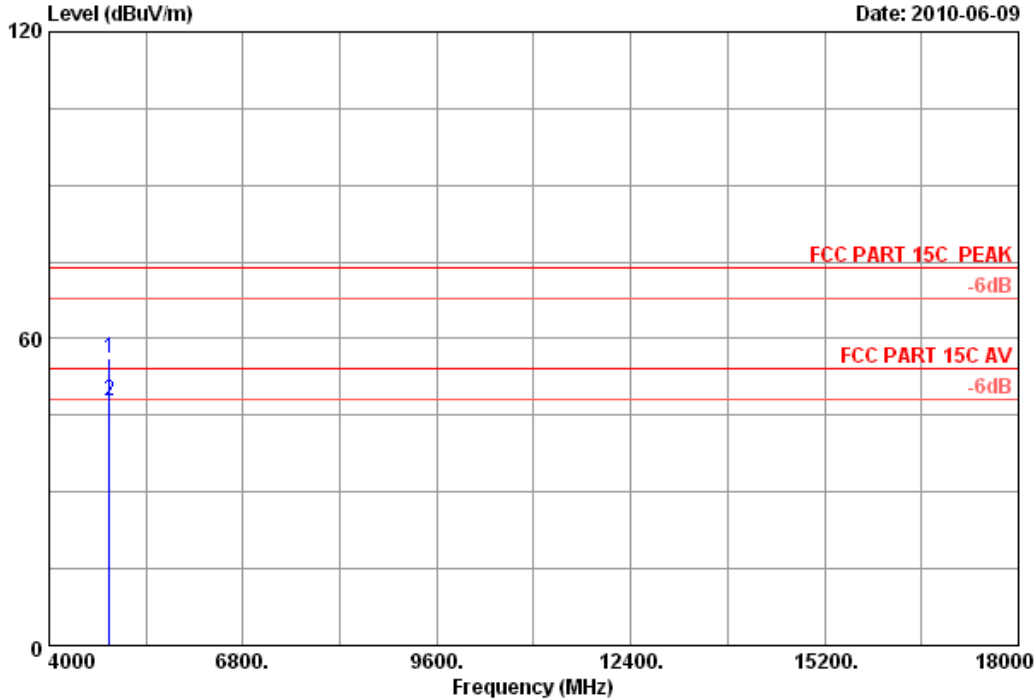


Site no.	: 3m Chamber	Data no.	: 7
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11b CH6 2437MHz Tx		
M/N	: TL-MR3220		



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Data: 8 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 8  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	44.59	56.08	74.00	17.92	Peak
2	4874.000	34.41	12.44	35.36	36.24	47.73	54.00	6.27	Average

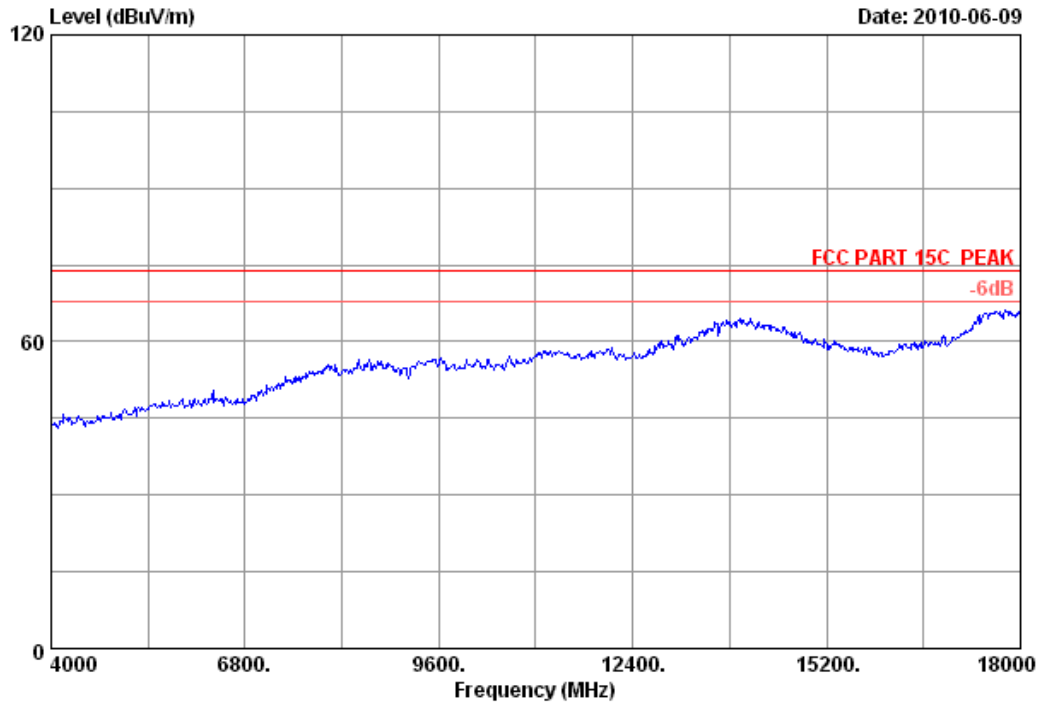
Remarks:

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



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Data: 9 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

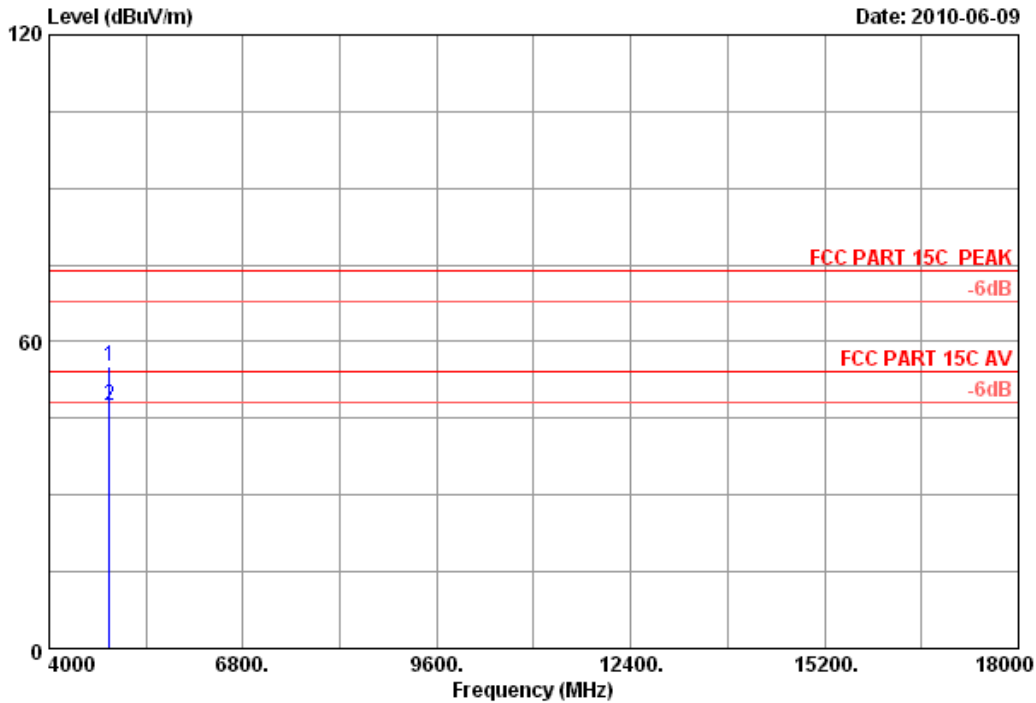


Site no.	: 3m Chamber	Data no.	: 9
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11b CH6 2437MHz Tx		
M/N	: TL-MR3220		



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Data: 10 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 10  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	43.55	55.04	74.00	18.96	Peak
2	4874.000	34.41	12.44	35.36	36.01	47.50	54.00	6.50	Average

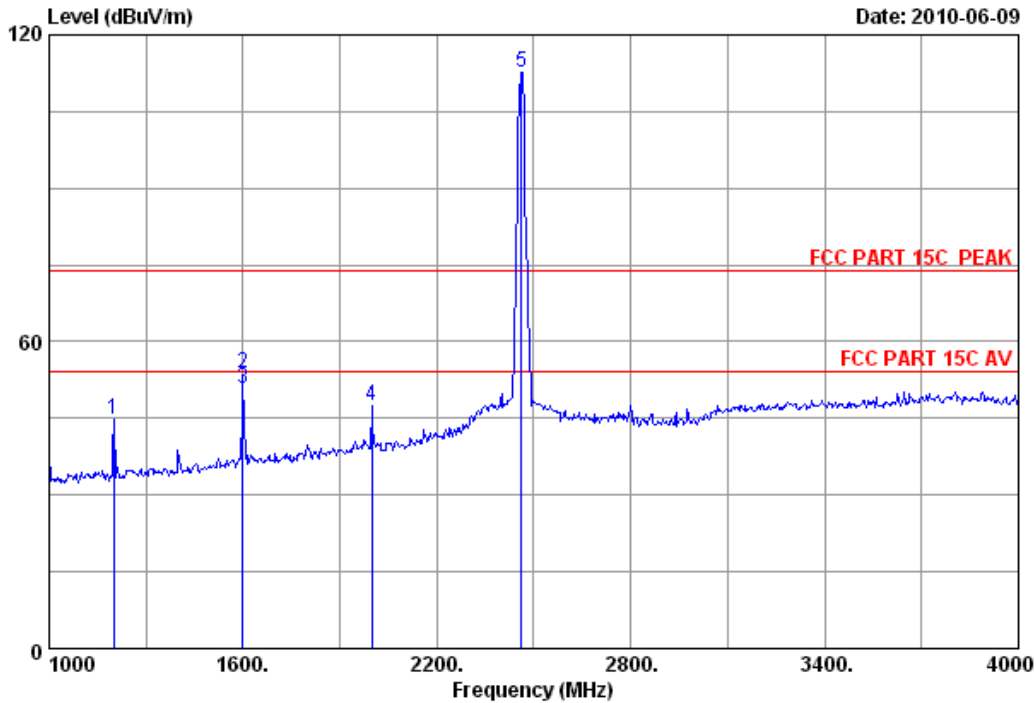
Remarks:

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



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Data: 13 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 13  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	50.00	44.82	74.00	29.18	Peak
2	1600.000	26.96	6.98	36.43	56.23	53.74	74.00	20.26	Peak
3	1600.000	26.96	6.98	36.43	53.25	50.76	54.00	3.24	Average
4	1999.000	29.20	7.93	36.09	46.53	47.57	74.00	26.43	Peak
5	2462.000	29.48	8.82	36.02	110.42	112.70	74.00	-38.70	Peak

Remarks:

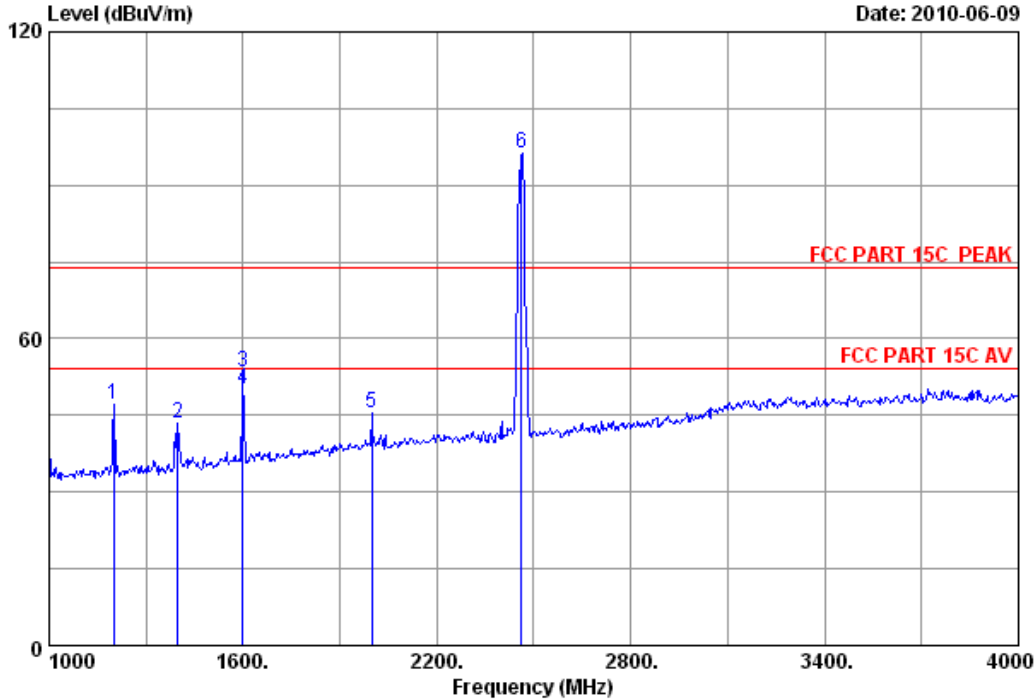
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 14 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 14  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	52.46	47.28	74.00	26.72	Peak
2	1399.000	26.19	6.49	36.69	47.38	43.37	74.00	30.63	Peak
3	1600.000	26.96	6.98	36.43	56.02	53.53	74.00	20.47	Peak
4	1600.000	26.96	6.98	36.43	52.72	50.23	54.00	3.77	Average
5	1999.000	29.20	7.93	36.09	44.29	45.33	74.00	28.67	Peak
6	2462.000	29.48	8.82	36.02	94.07	96.35	74.00	-22.35	Peak

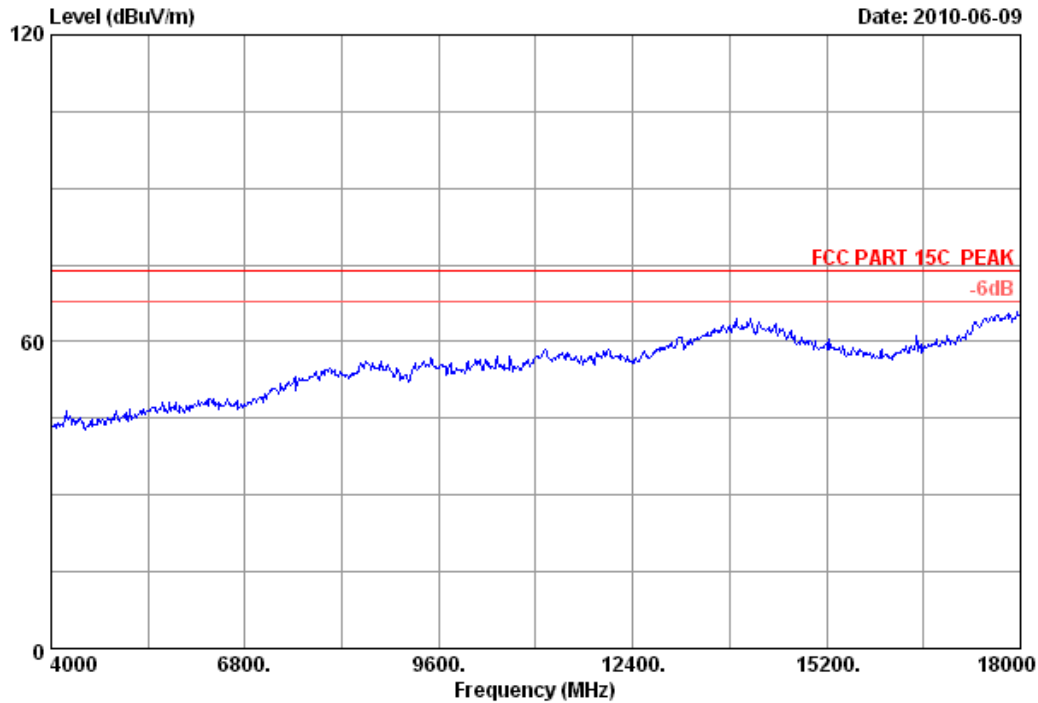
Remarks:

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



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Data: 15 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

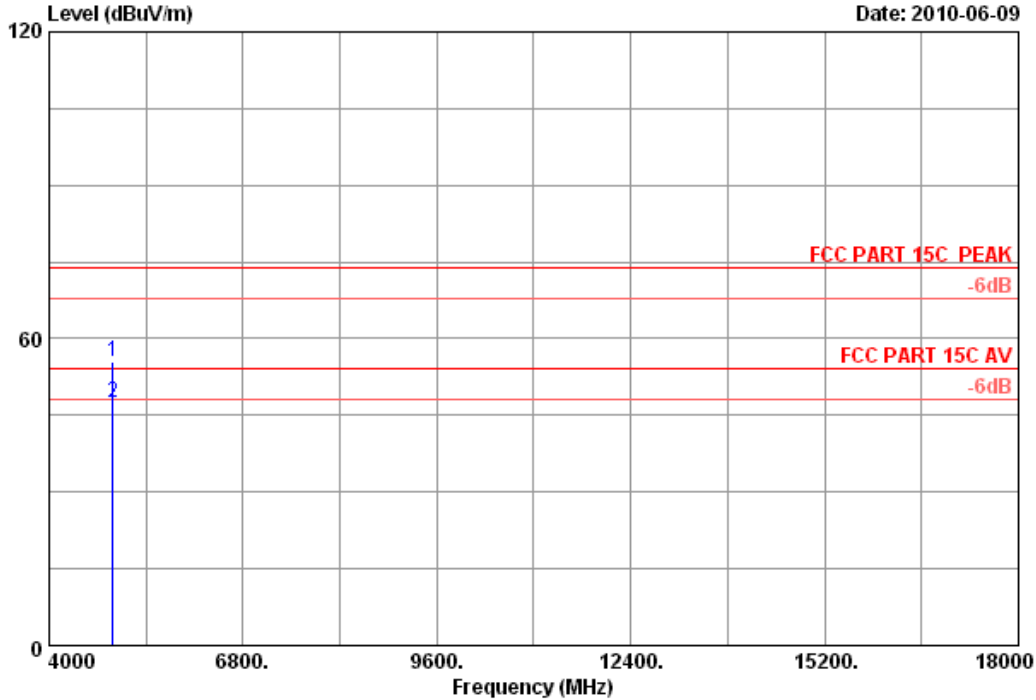


Site no.	: 3m Chamber	Data no.	: 15
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11b CH11 2462MHz Tx		
M/N	: TL-MR3220		



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Data: 16 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 16  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.50	35.34	43.97	55.62	74.00	18.38	Peak
2	4924.000	34.49	12.50	35.34	35.68	47.33	54.00	6.67	Average

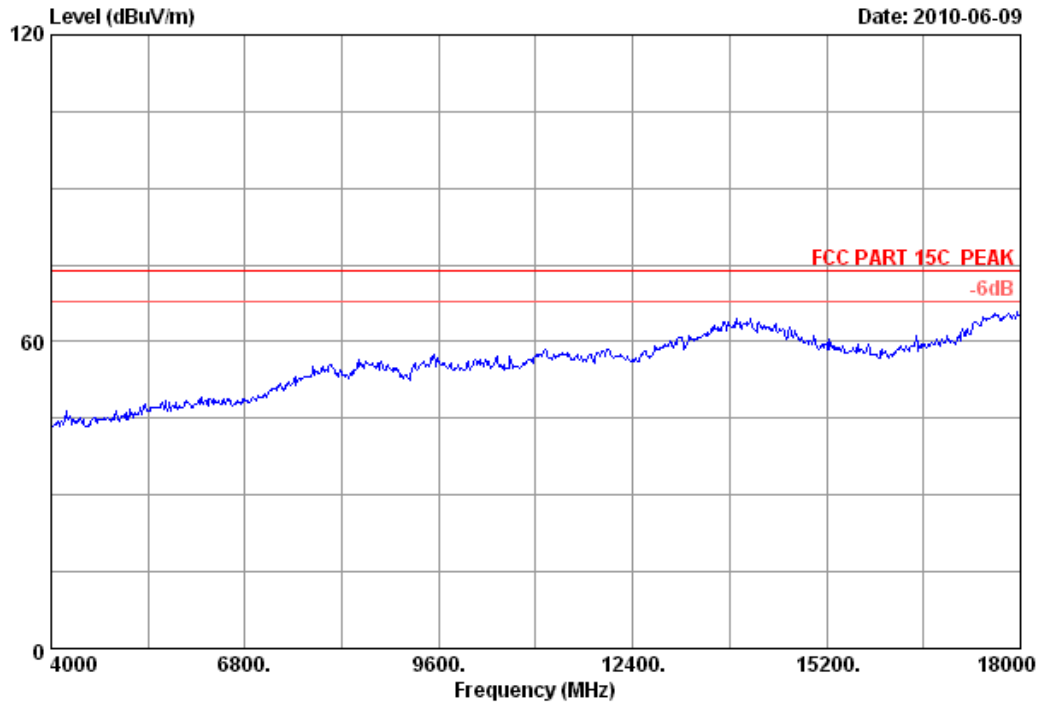
Remarks:

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



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Data: 17 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

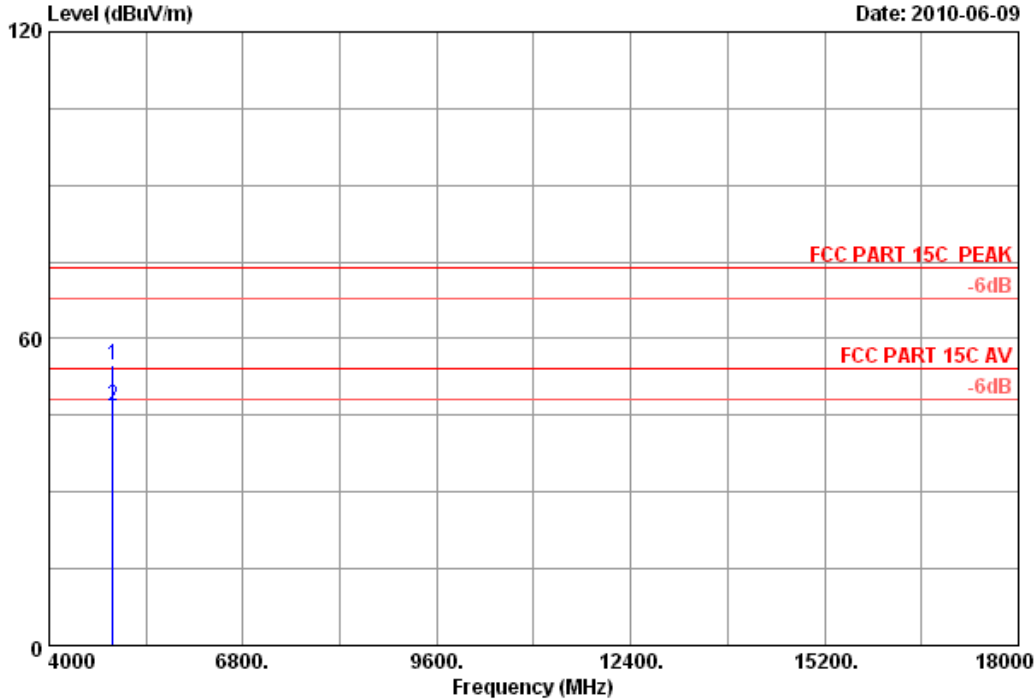


Site no.	: 3m Chamber	Data no.	: 17
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11b CH11 2462MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 18  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.50	35.34	43.05	54.70	74.00	19.30	Peak
2	4924.000	34.49	12.50	35.34	35.24	46.89	54.00	7.11	Average

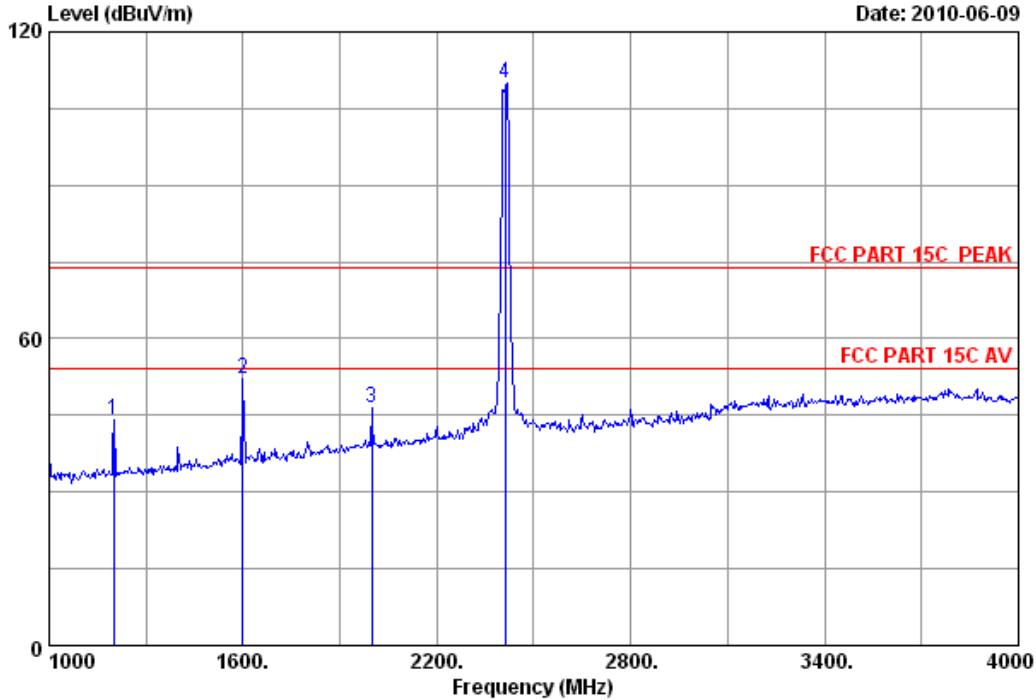
Remarks:

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



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Data: 23 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 23  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant. Factor	Cable loss	Amp. Factor	Reading	Emission Level	Limits	Margin	Remark
Freq. (MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 1201.000	25.81	5.98	36.97	49.20	44.02	74.00	29.98	Peak
2 1600.000	26.96	6.98	36.43	54.68	52.19	74.00	21.81	Peak
3 1999.000	29.20	7.93	36.09	45.44	46.48	74.00	27.52	Peak
4 2412.000	29.45	8.72	35.95	107.66	109.88	74.00	-35.88	Peak

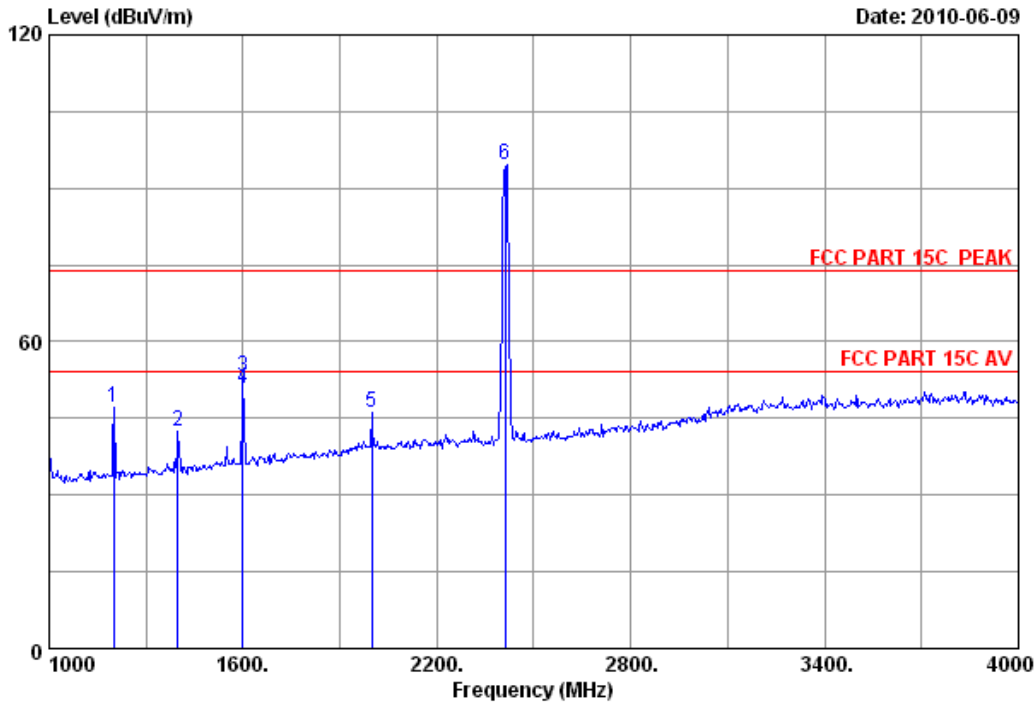
Remarks:

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



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Site no. : 3m Chamber Data no. : 24  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	52.34	47.16	74.00	26.84	Peak
2	1399.000	26.19	6.49	36.69	46.59	42.58	74.00	31.42	Peak
3	1600.000	26.96	6.98	36.43	55.75	53.26	74.00	20.74	Peak
4	1600.000	26.96	6.98	36.43	53.36	50.87	54.00	3.13	Average
5	1999.000	29.20	7.93	36.09	45.01	46.05	74.00	27.95	Peak
6	2412.000	29.45	8.72	35.95	92.24	94.46	74.00	-20.46	Peak

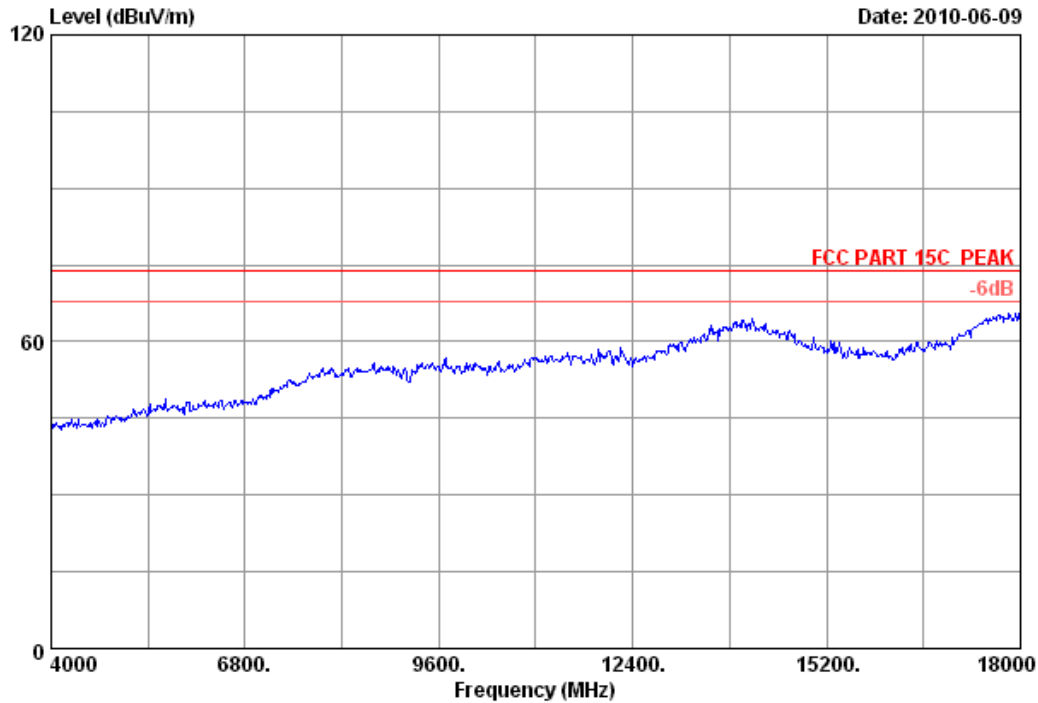
Remarks:

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



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Data: 19 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



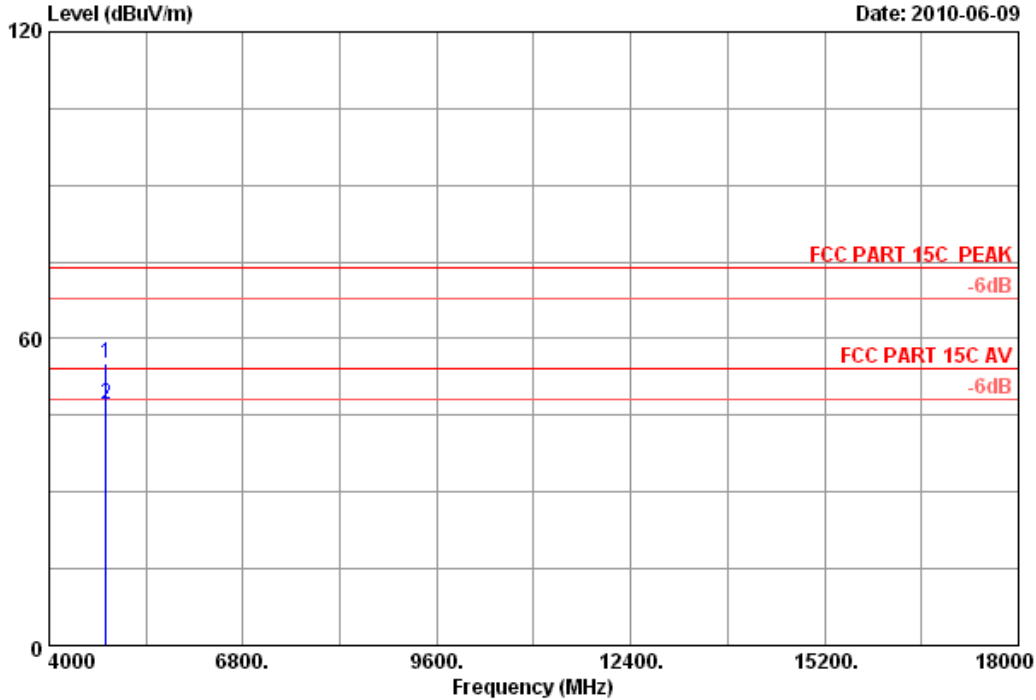
Site no.	: 3m Chamber	Data no.	: 19
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11g CH1 2412MHz Tx		
M/N	: TL-MR3220		





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Data: 20 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 20  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	34.32	12.38	35.25	43.68	55.13	74.00	18.87	Peak
2	34.32	12.38	35.25	35.62	47.07	54.00	6.93	Average

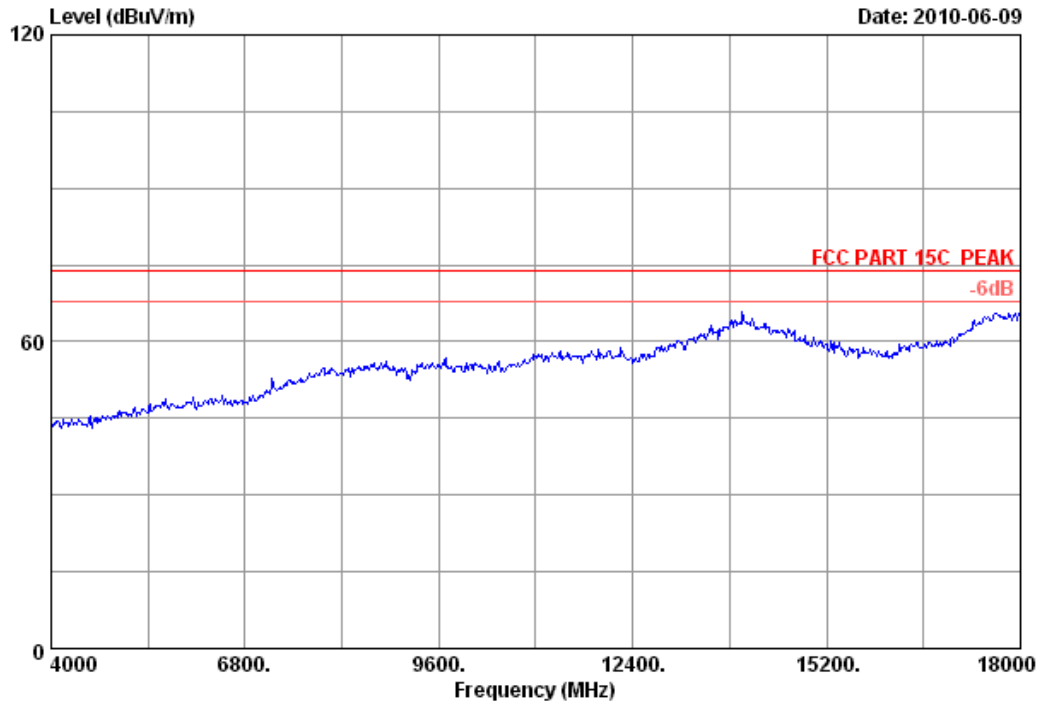
Remarks:

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



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Data: 21 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

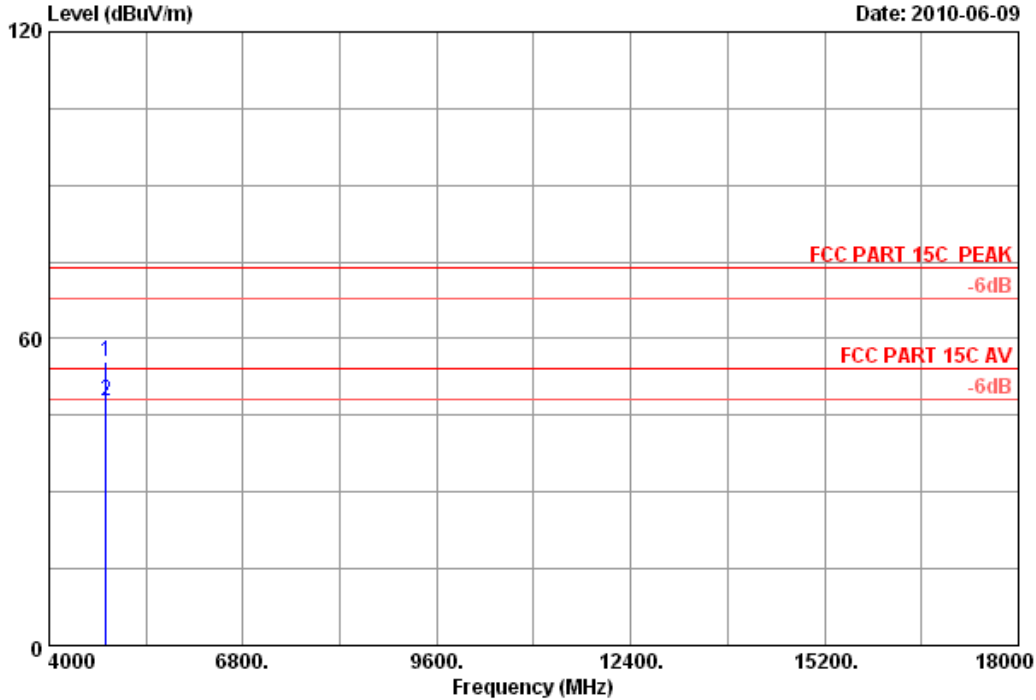


Site no.	: 3m Chamber	Data no.	: 21
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11g CH1 2412MHz Tx		
M/N	: TL-MR3220		



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Data: 22 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 22  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	44.10	55.55	74.00	18.45	Peak
2	4824.000	34.32	12.38	35.25	36.24	47.69	54.00	6.31	Average

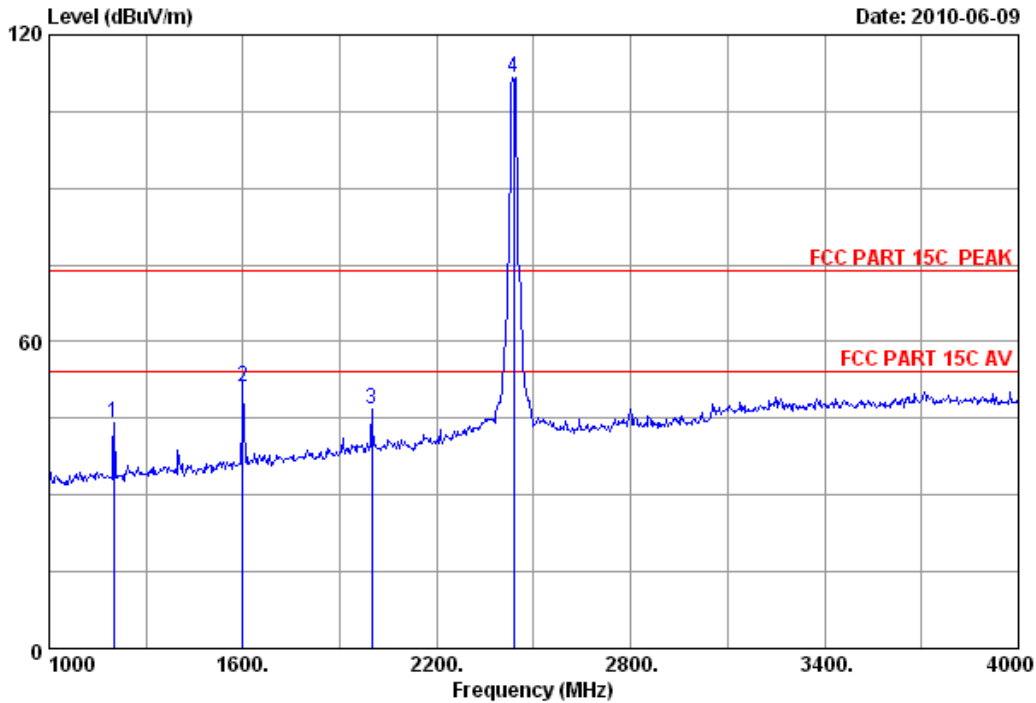
Remarks:

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



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Data: 25 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 25  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	49.32	44.14	74.00	29.86	Peak
2	1600.000	26.96	6.98	36.43	53.69	51.20	74.00	22.80	Peak
3	1999.000	29.20	7.93	36.09	45.81	46.85	74.00	27.15	Peak
4	2437.000	29.47	8.77	36.06	109.55	111.73	74.00	-37.73	Peak

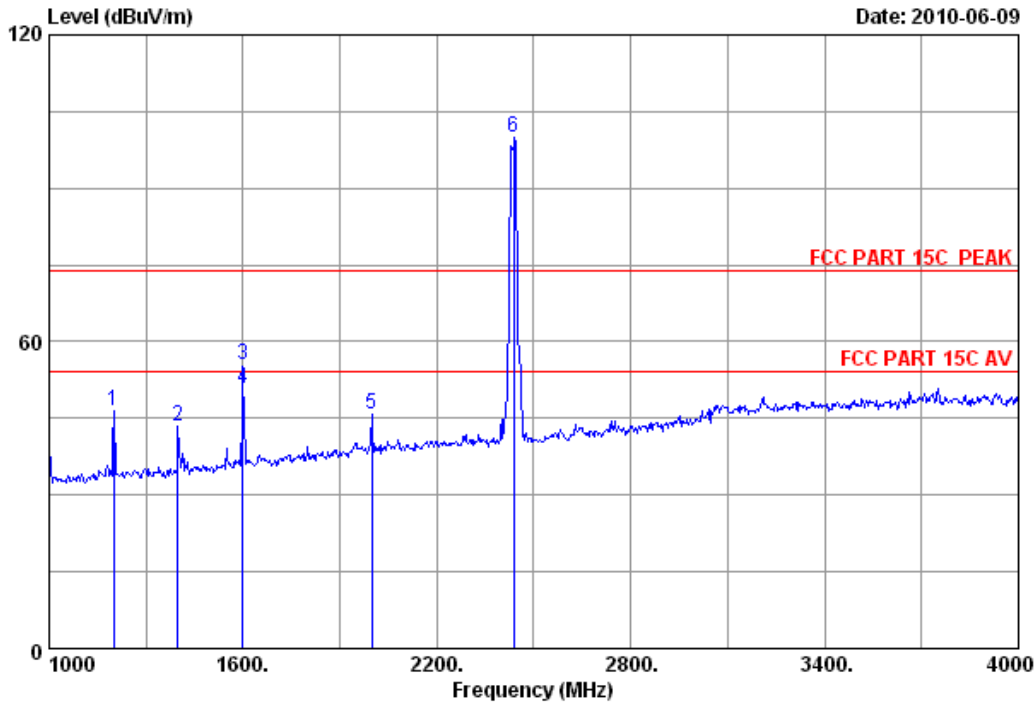
Remarks:

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



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Site no. : 3m Chamber Data no. : 26  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	51.58	46.40	74.00	27.60	Peak
2	1399.000	26.19	6.49	36.69	47.39	43.38	74.00	30.62	Peak
3	1600.000	26.96	6.98	36.43	57.94	55.45	74.00	18.55	Peak
4	1600.000	26.96	6.98	36.43	53.13	50.64	54.00	3.36	Average
5	1999.000	29.20	7.93	36.09	44.87	45.91	74.00	28.09	Peak
6	2437.000	29.47	8.77	36.06	97.74	99.92	74.00	-25.92	Peak

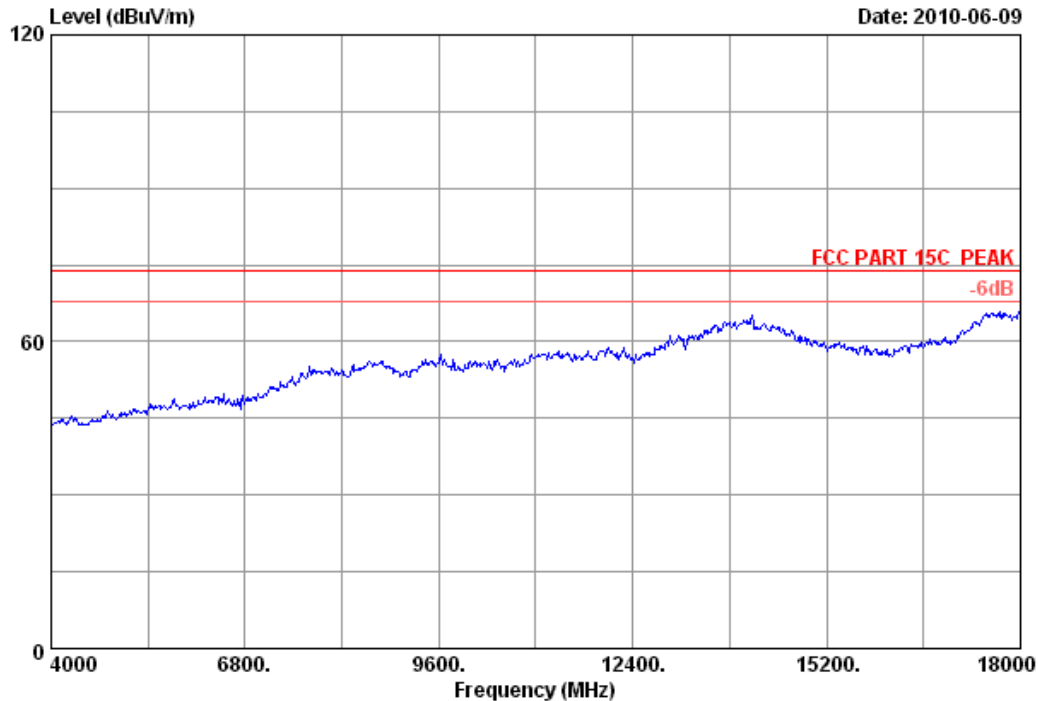
Remarks:

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



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Data: 27 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

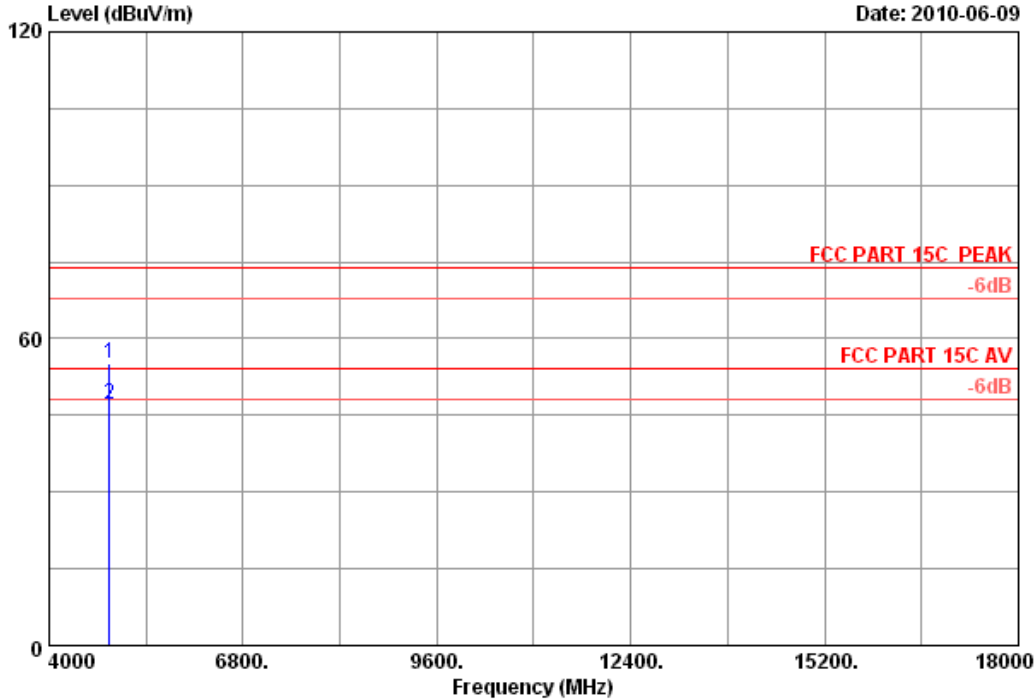


Site no.	: 3m Chamber	Data no.	: 27
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11g CH6 2437MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 28  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	43.68	55.17	74.00	18.83	Peak
2	4874.000	34.41	12.44	35.36	35.67	47.16	54.00	6.84	Average

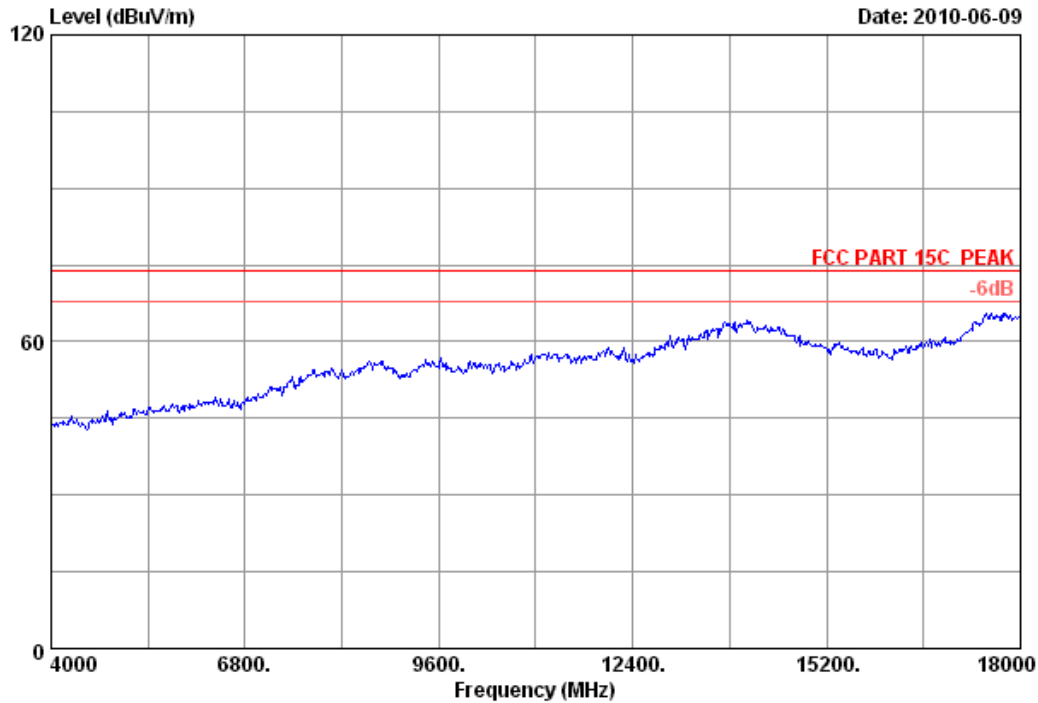
Remarks:

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



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Data: 29 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



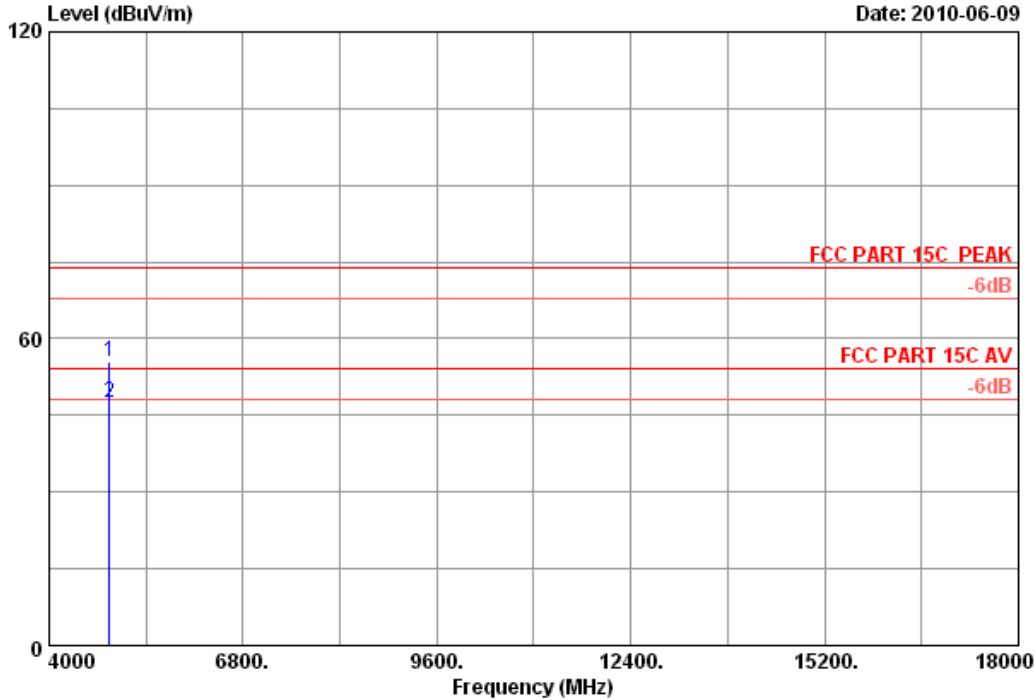
Site no.	: 3m Chamber	Data no.	: 29
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11g CH6 2437MHz Tx		
M/N	: TL-MR3220		





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Data: 30 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 30  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	44.14	55.63	74.00	18.37	Peak
2	4874.000	34.41	12.44	35.36	36.13	47.62	54.00	6.38	Average

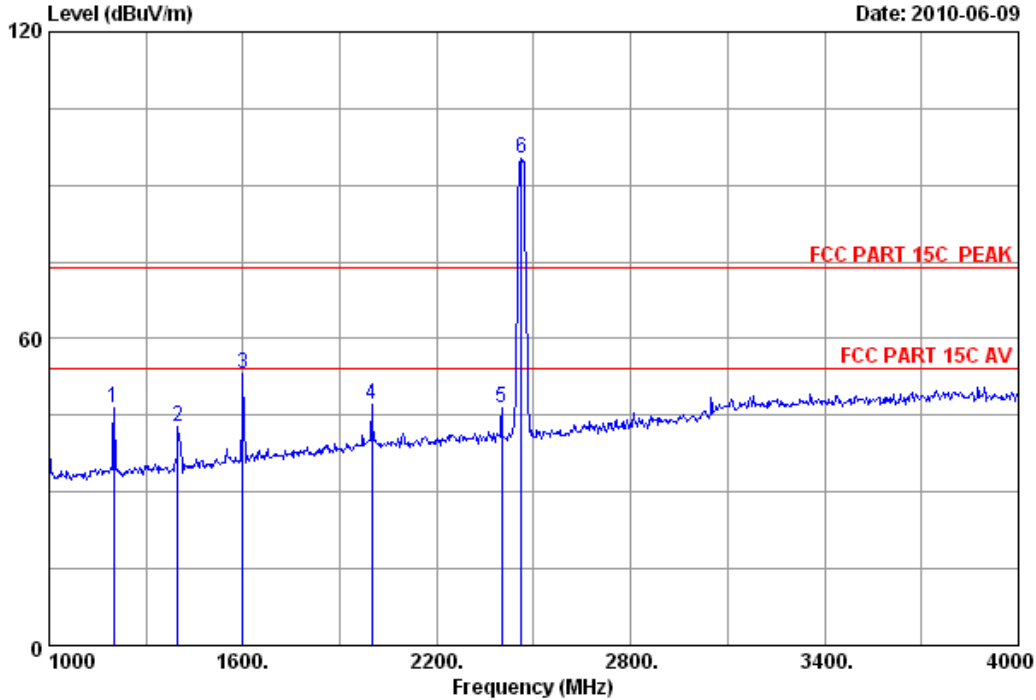
Remarks:

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



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Site no. : 3m Chamber Data no. : 35  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	51.74	46.56	74.00	27.44	Peak
2	1399.000	26.19	6.49	36.69	46.82	42.81	74.00	31.19	Peak
3	1600.000	26.96	6.98	36.43	55.60	53.11	74.00	20.89	Peak
4	1999.000	29.20	7.93	36.09	46.25	47.29	74.00	26.71	Peak
5	2401.000	29.44	8.72	36.09	44.23	46.30	74.00	27.70	Peak
6	2462.000	29.48	8.82	36.02	92.99	95.27	74.00	-21.27	Peak

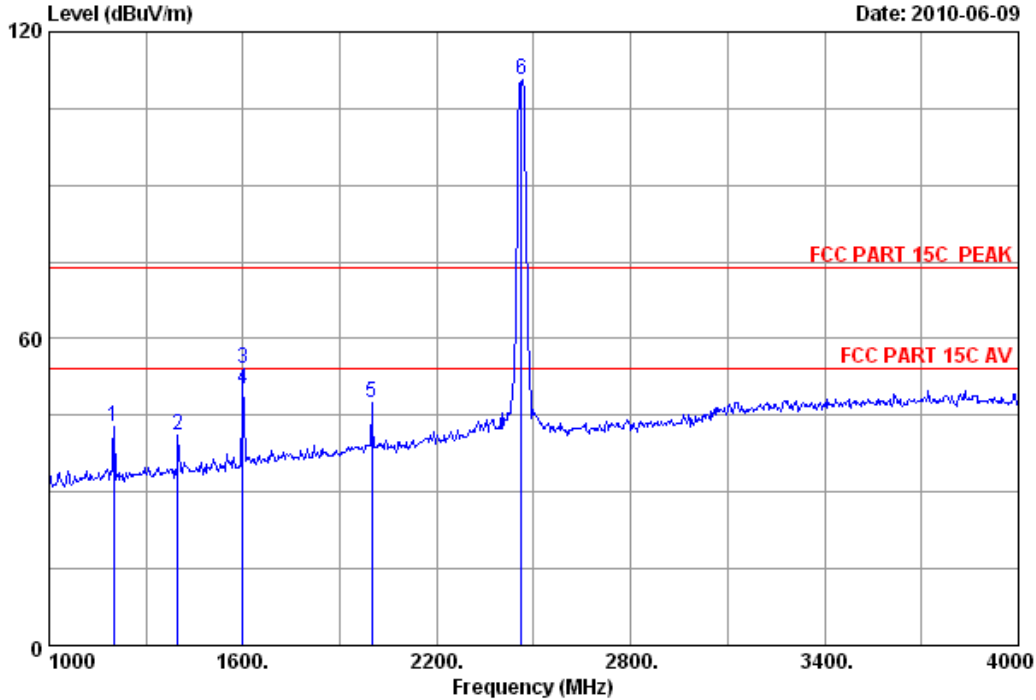
Remarks:

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



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Site no. : 3m Chamber Data no. : 36  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1201.000	25.81	5.98	36.97	47.87	42.69	74.00	31.31	Peak
2	1399.000	26.19	6.49	36.69	45.18	41.17	74.00	32.83	Peak
3	1600.000	26.96	6.98	36.43	56.72	54.23	74.00	19.77	Peak
4	1600.000	26.96	6.98	36.43	52.75	50.26	54.00	3.74	Average
5	1999.000	29.20	7.93	36.09	46.31	47.35	74.00	26.65	Peak
6	2462.000	29.48	8.82	36.02	108.40	110.68	74.00	-36.68	Peak

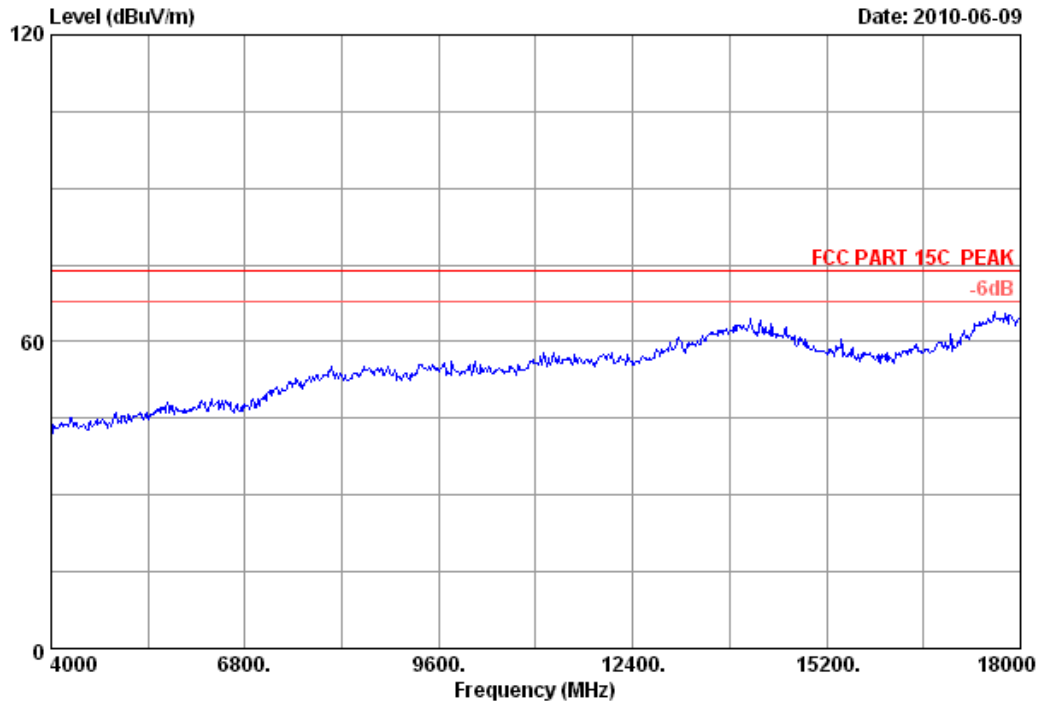
Remarks:

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



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Data: 31 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

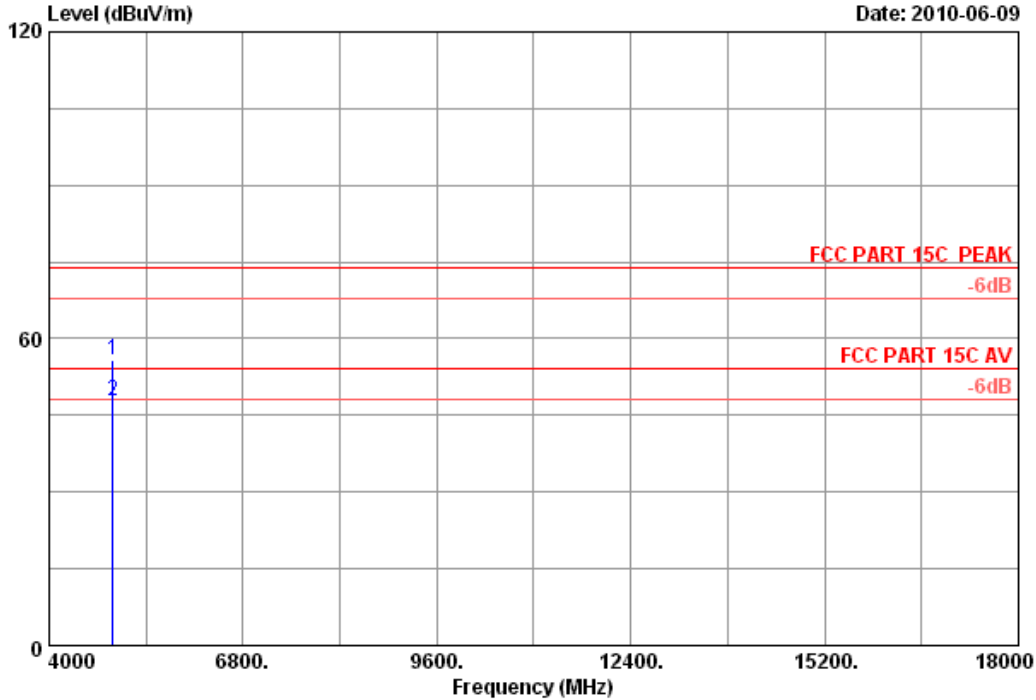


Site no.	: 3m Chamber	Data no.	: 31
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11g CH11 2462MHz Tx		
M/N	: TL-MR3220		



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Data: 32 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 32  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.50	35.34	44.15	55.80	74.00	18.20	Peak
2	4924.000	34.49	12.50	35.34	36.15	47.80	54.00	6.20	Average

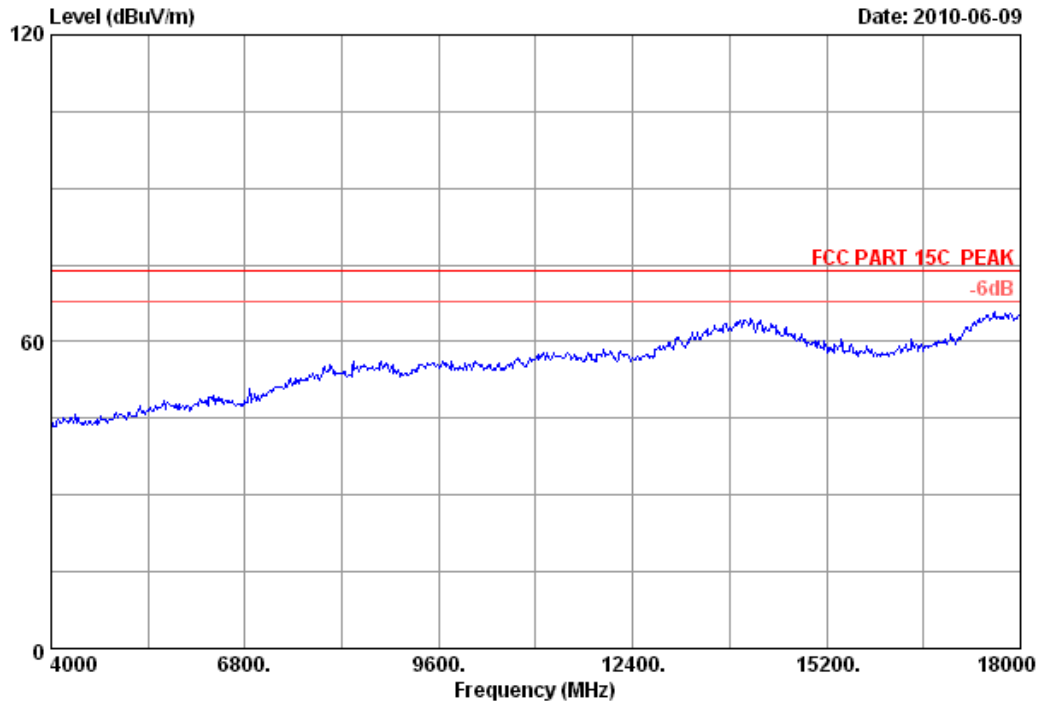
Remarks:

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



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Data: 33 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

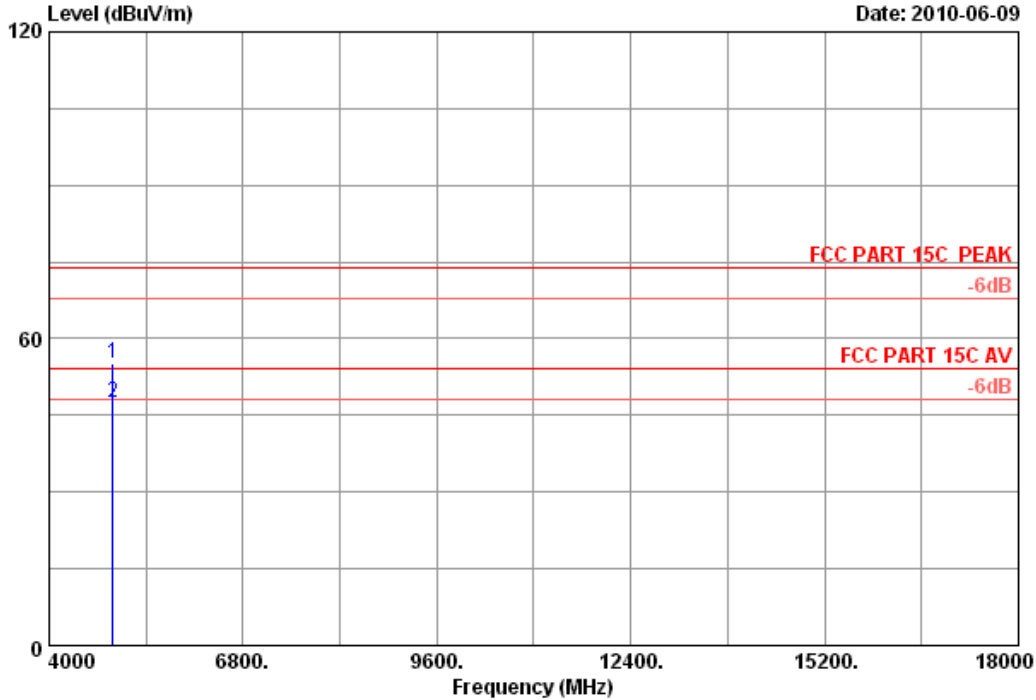


Site no.	: 3m Chamber	Data no.	: 33
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11g CH11 2462MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 34  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	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	4924.000	34.49	12.50	35.34	43.59	55.24	74.00	18.76	Peak
2	4924.000	34.49	12.50	35.34	35.84	47.49	54.00	6.51	Average

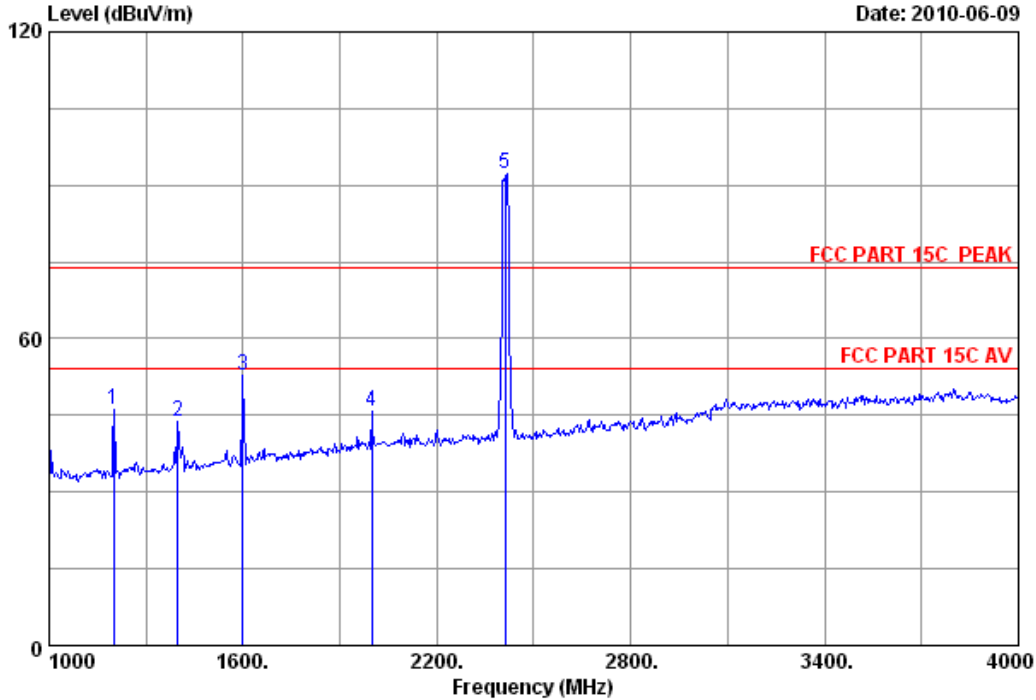
Remarks:

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



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Site no. : 3m Chamber Data no. : 37  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1201.000	25.81	5.98	36.97	51.30	46.12	74.00	27.88	Peak
2	1399.000	26.19	6.49	36.69	47.72	43.71	74.00	30.29	Peak
3	1600.000	26.96	6.98	36.43	55.33	52.84	74.00	21.16	Peak
4	1999.000	29.20	7.93	36.09	44.63	45.67	74.00	28.33	Peak
5	2412.000	29.45	8.72	35.95	89.88	92.10	74.00	-18.10	Peak

Remarks:

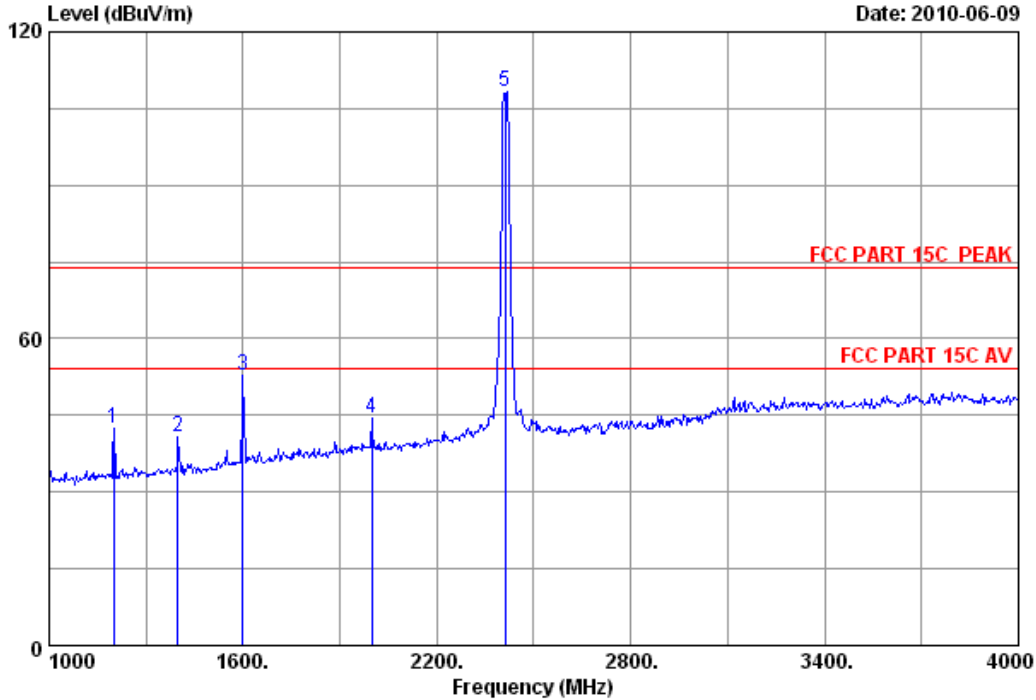
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Site no. : 3m Chamber Data no. : 38  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	47.51	42.33	74.00	31.67	Peak
2	1399.000	26.19	6.49	36.69	44.82	40.81	74.00	33.19	Peak
3	1600.000	26.96	6.98	36.43	55.20	52.71	74.00	21.29	Peak
4	1999.000	29.20	7.93	36.09	43.52	44.56	74.00	29.44	Peak
5	2412.000	29.45	8.72	35.95	106.21	108.43	74.00	-34.43	Peak

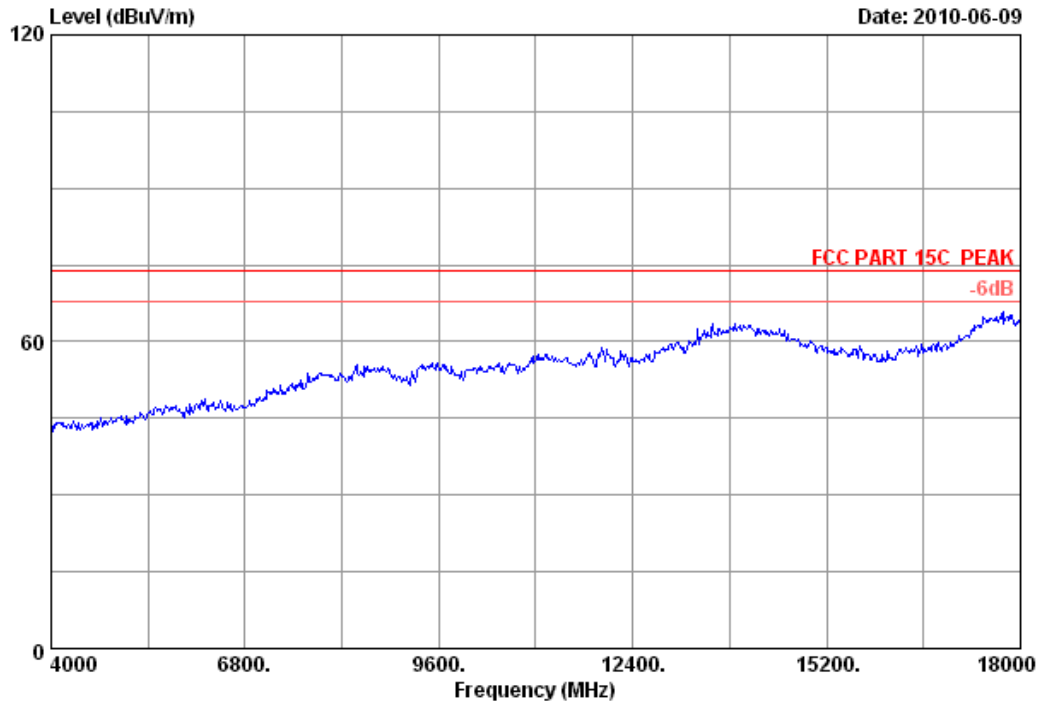
Remarks:

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



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Data: 39 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

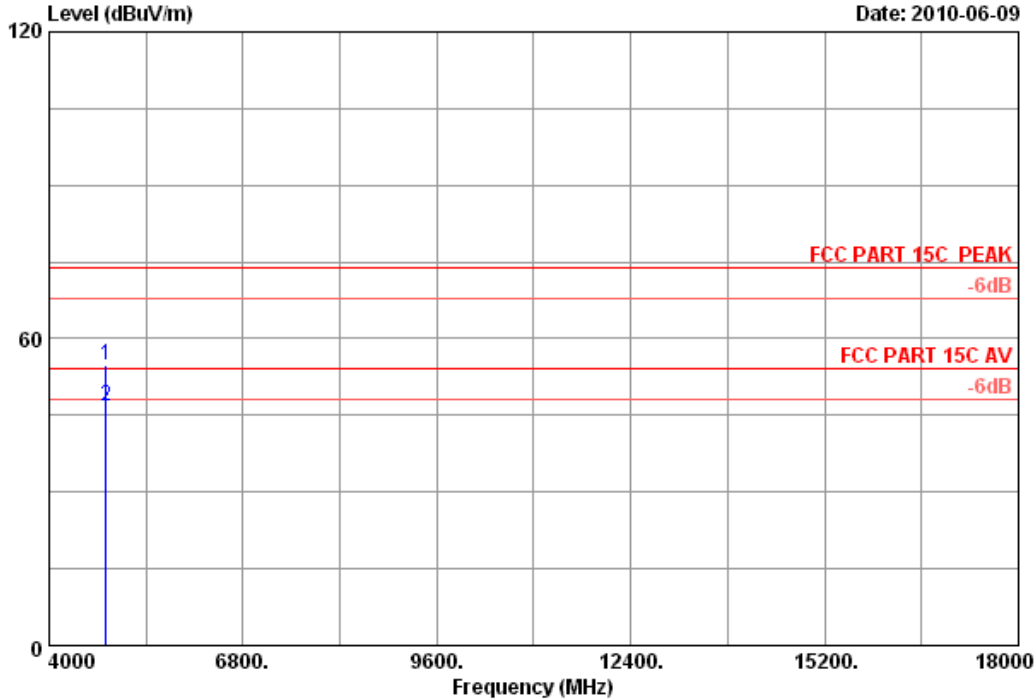


Site no.	: 3m Chamber	Data no.	: 39
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH1 2412MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 40  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	43.28	54.73	74.00	19.27	Peak
2	4824.000	34.32	12.38	35.25	35.46	46.91	54.00	7.09	Average

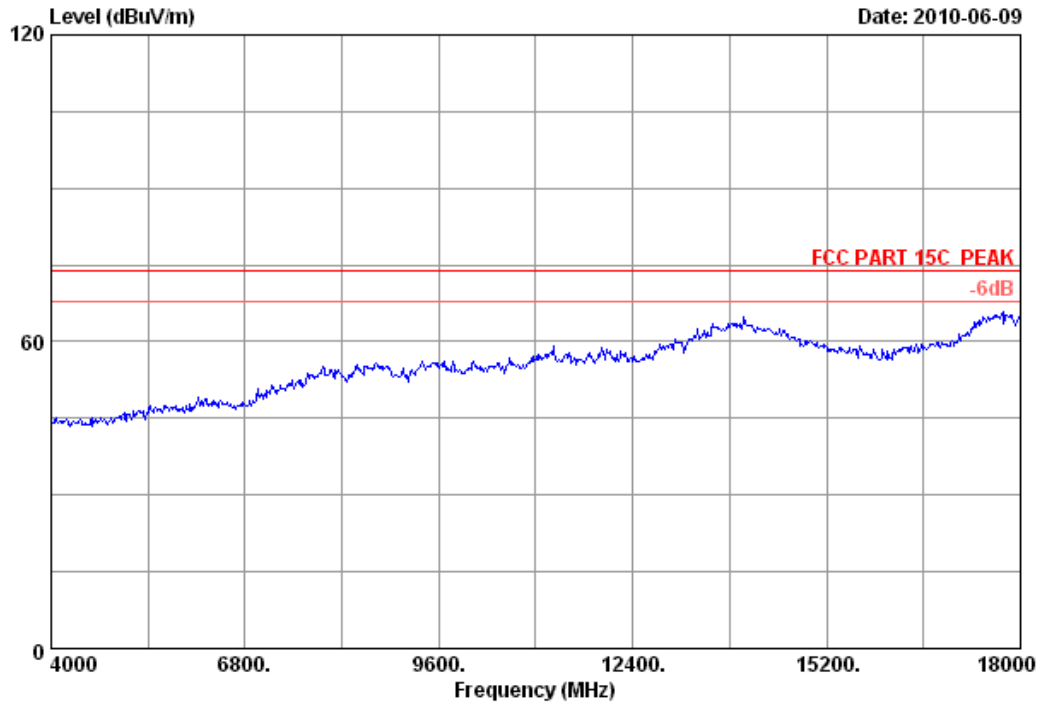
Remarks:

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



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Data: 41 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

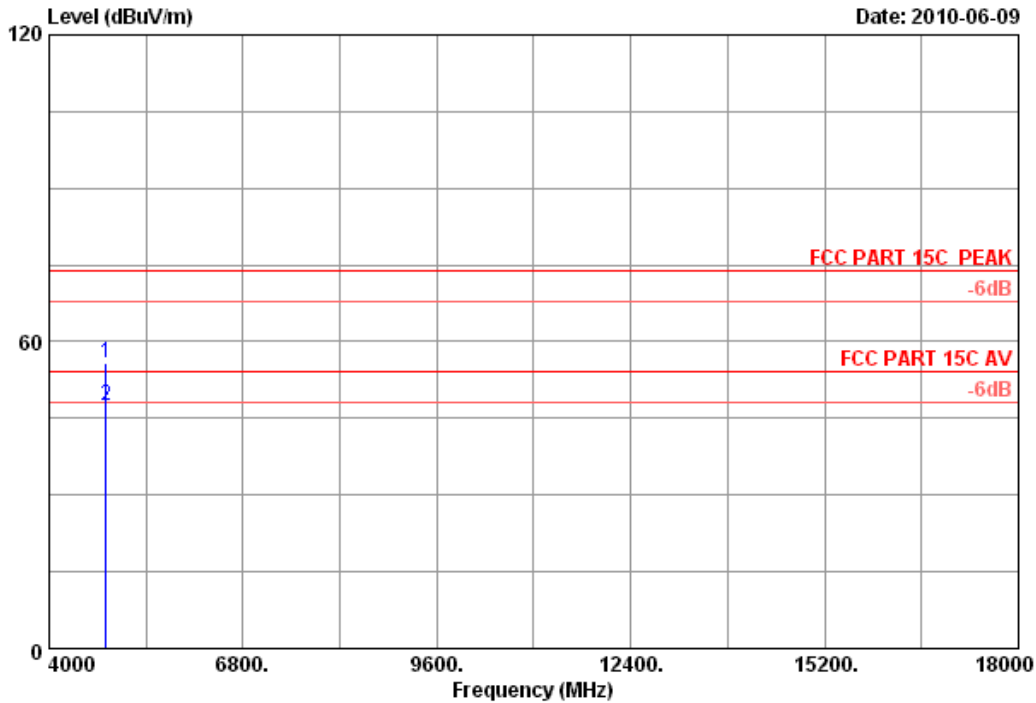


Site no.	: 3m Chamber	Data no.	: 41
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH1 2412MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 42  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4824.000	34.32	12.38	35.25	44.35	55.80	74.00	18.20	Peak
2	4824.000	34.32	12.38	35.25	36.15	47.60	54.00	6.40	Average

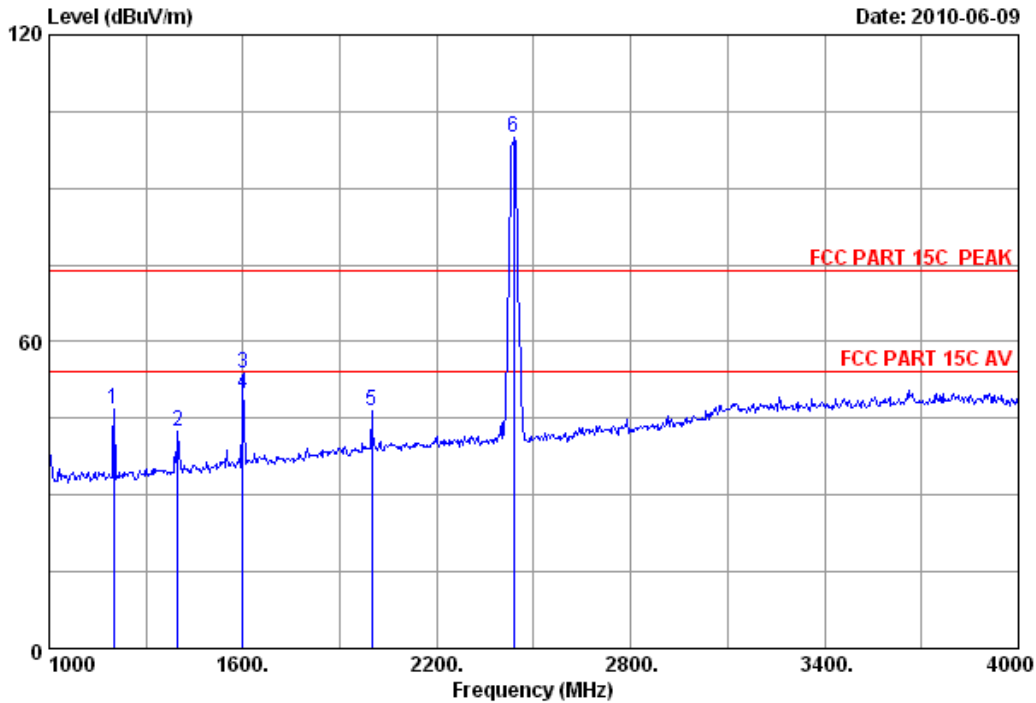
Remarks:

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



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Site no. : 3m Chamber Data no. : 47  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	51.85	46.67	74.00	27.33	Peak
2	1399.000	26.19	6.49	36.69	46.57	42.56	74.00	31.44	Peak
3	1600.000	26.96	6.98	36.43	56.24	53.75	74.00	20.25	Peak
4	1600.000	26.96	6.98	36.43	52.14	49.65	54.00	4.35	Average
5	1999.000	29.20	7.93	36.09	45.27	46.31	74.00	27.69	Peak
6	2437.000	29.47	8.77	36.06	97.80	99.98	74.00	-25.98	Peak

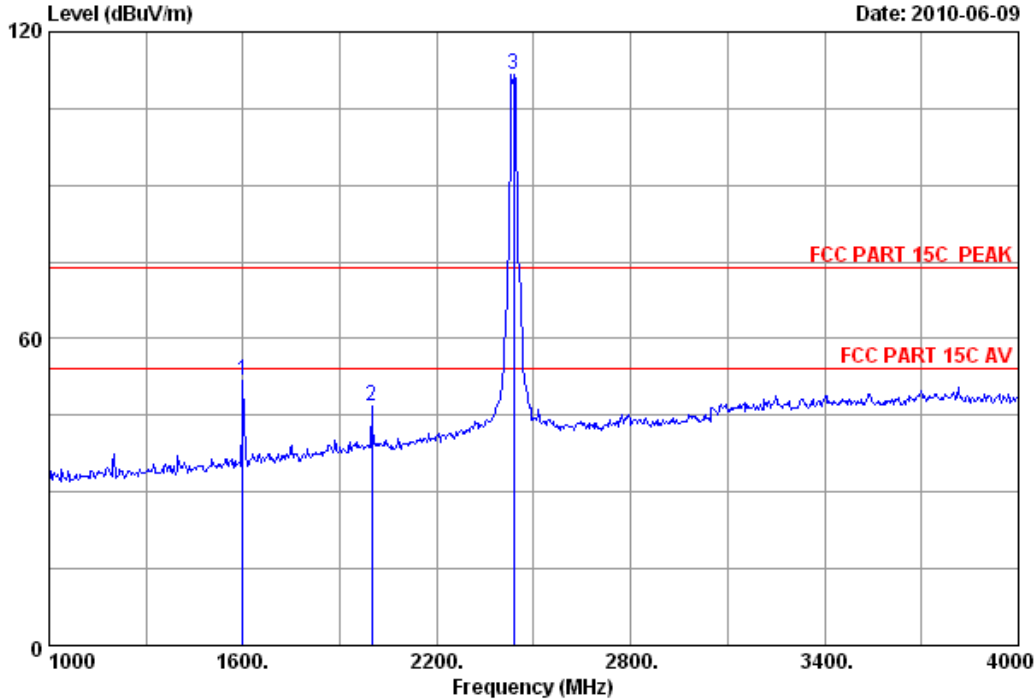
Remarks:

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



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Site no. : 3m Chamber Data no. : 48  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH6 2437MHz Tx  
 M/N : TL-MR3220

	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	26.96	6.98	36.43	54.33	51.84	74.00	22.16	Peak
2	29.20	7.93	36.09	45.91	46.95	74.00	27.05	Peak
3	29.47	8.77	36.06	109.51	111.69	74.00	-37.69	Peak

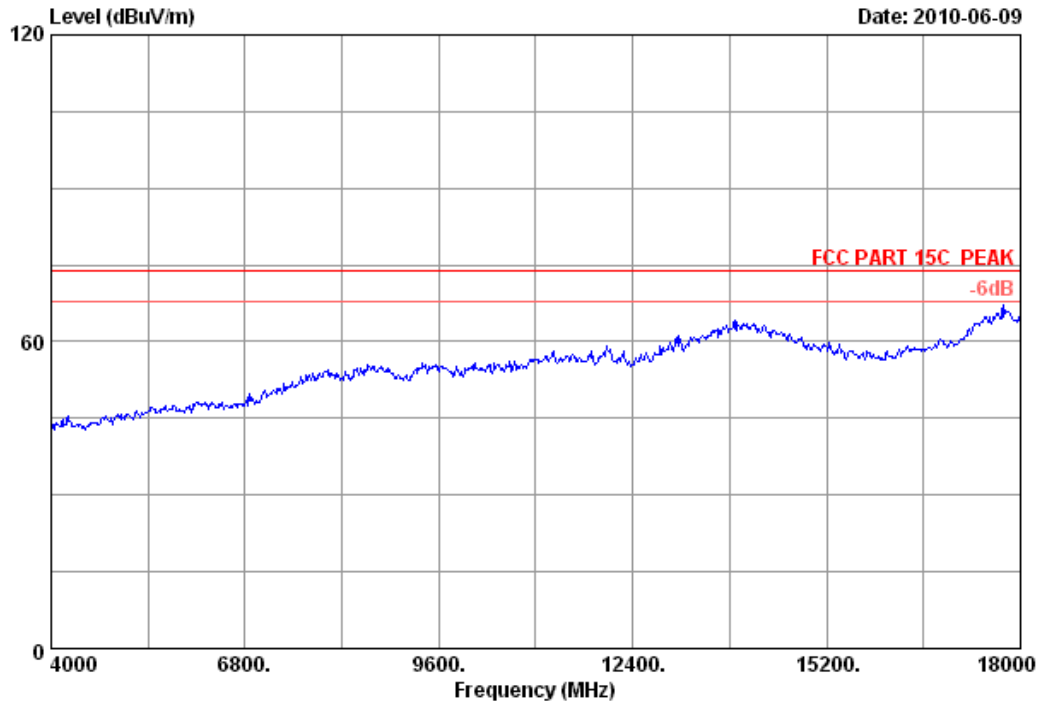
Remarks:

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



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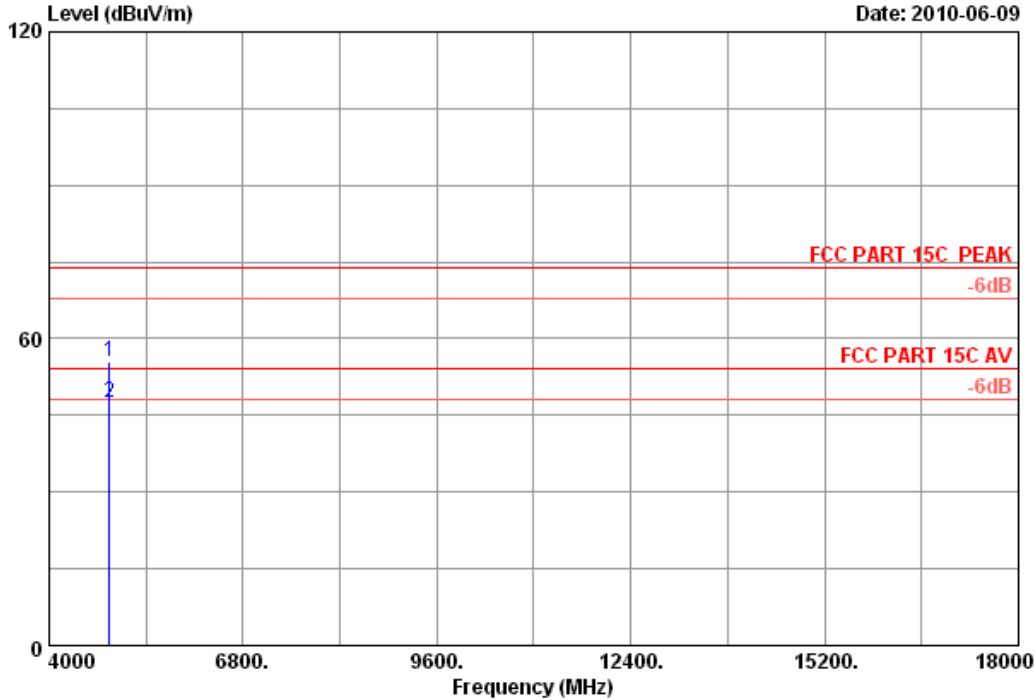
Site no.	: 3m Chamber	Data no.	: 43
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH6 2437MHz Tx		
M/N	: TL-MR3220		





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Data: 44 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 44  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	44.15	55.64	74.00	18.36	Peak
2	4874.000	34.41	12.44	35.36	36.13	47.62	54.00	6.38	Average

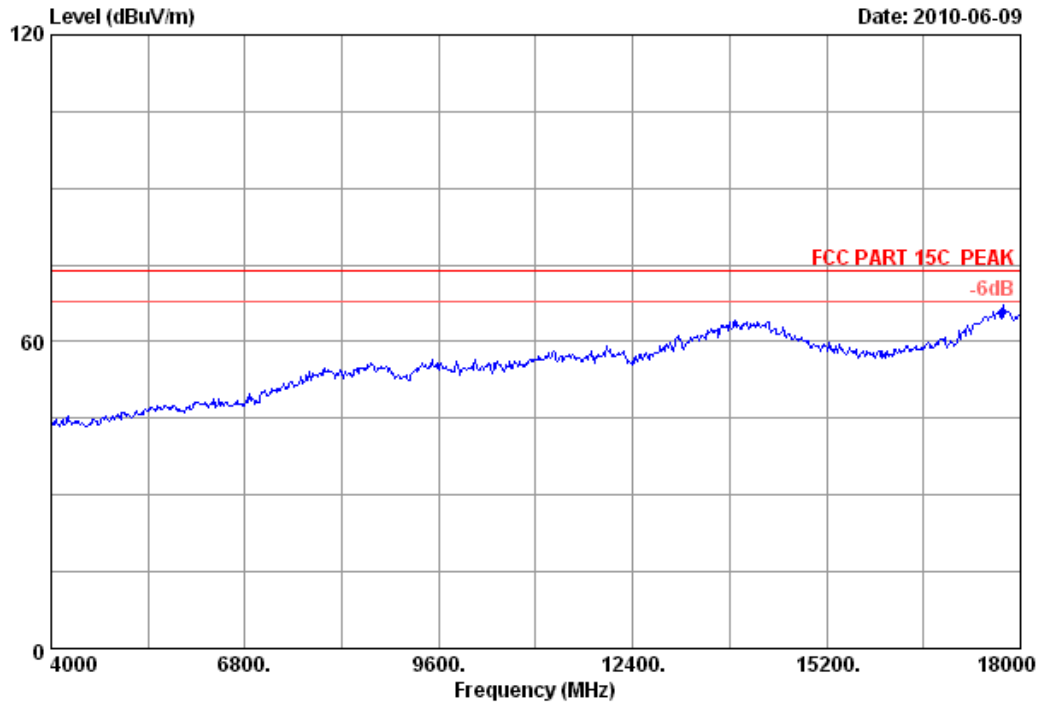
Remarks:

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



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Data: 45 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

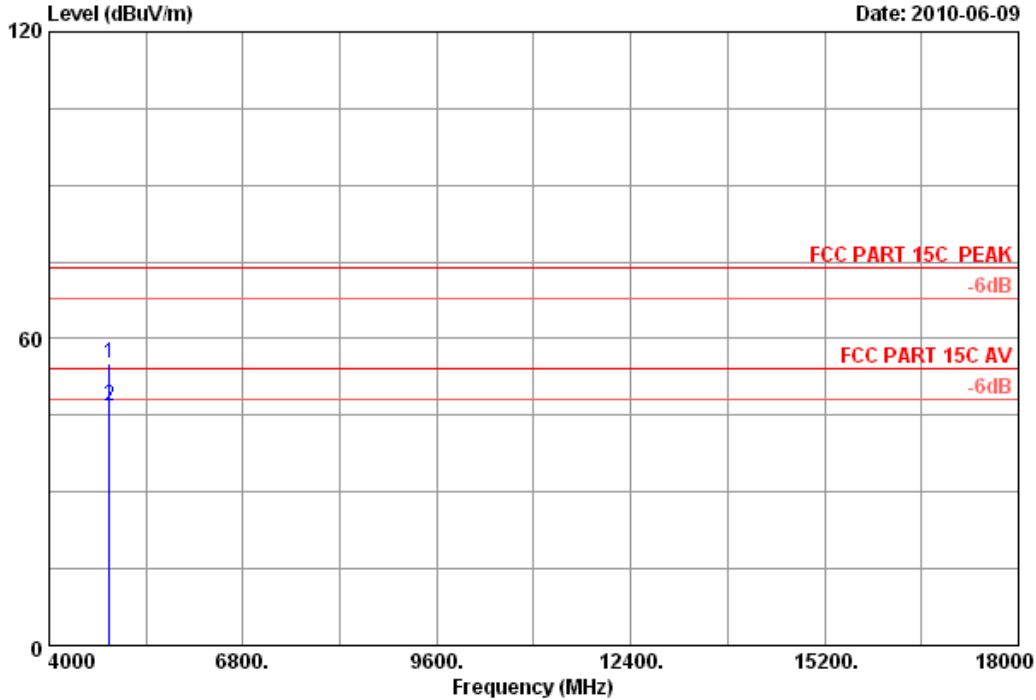


Site no.	: 3m Chamber	Data no.	: 45
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH6 2437MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 46  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH6 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	43.58	55.07	74.00	18.93	Peak
2	4874.000	34.41	12.44	35.36	35.47	46.96	54.00	7.04	Average

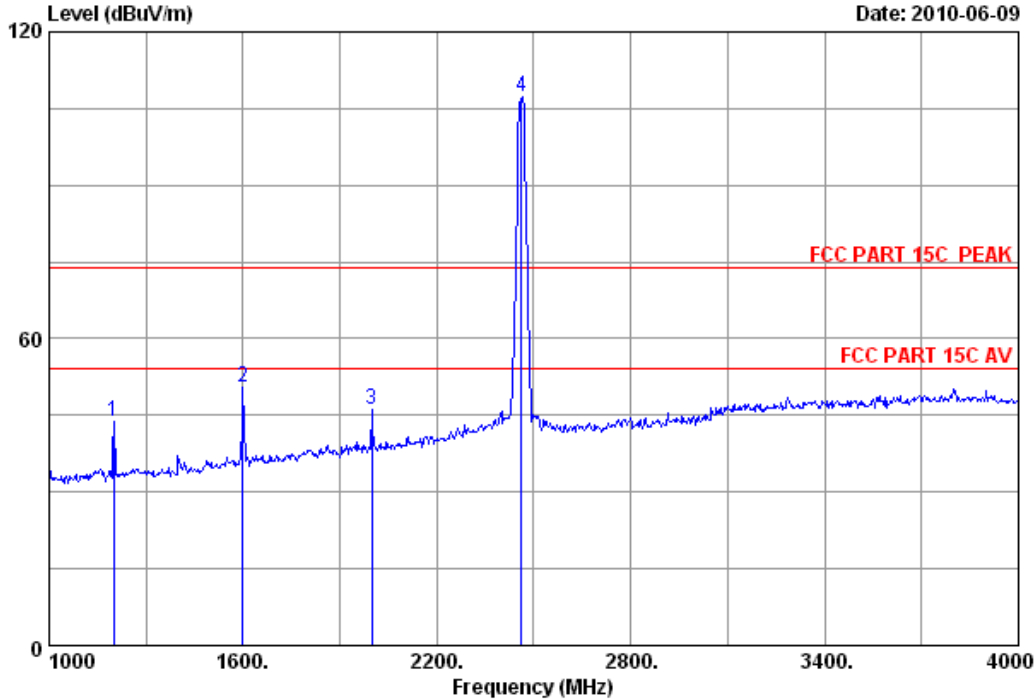
Remarks:

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



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Site no. : 3m Chamber Data no. : 49  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	48.82	43.64	74.00	30.36	Peak
2	1600.000	26.96	6.98	36.43	53.09	50.60	74.00	23.40	Peak
3	1999.000	29.20	7.93	36.09	45.08	46.12	74.00	27.88	Peak
4	2462.000	29.48	8.82	36.02	104.98	107.26	74.00	-33.26	Peak

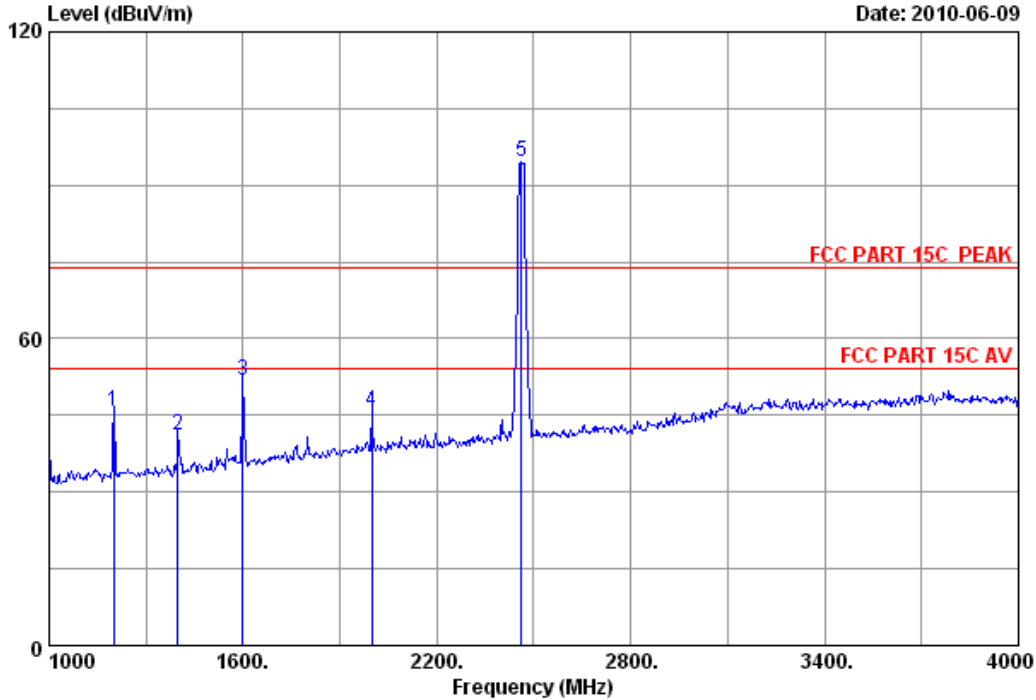
Remarks:

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



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Site no. : 3m Chamber Data no. : 50  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	50.93	45.75	74.00	28.25	Peak
2	1399.000	26.19	6.49	36.69	44.96	40.95	74.00	33.05	Peak
3	1600.000	26.96	6.98	36.43	54.21	51.72	74.00	22.28	Peak
4	1999.000	29.20	7.93	36.09	44.72	45.76	74.00	28.24	Peak
5	2462.000	29.48	8.82	36.02	92.20	94.48	74.00	-20.48	Peak

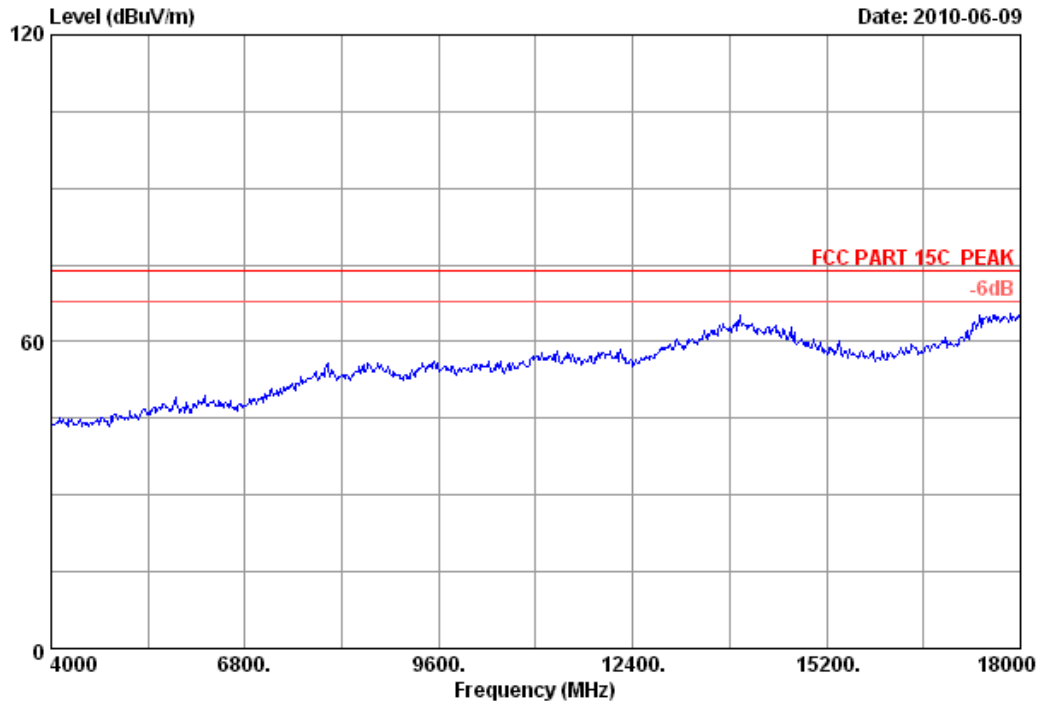
Remarks:

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



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Data: 51 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

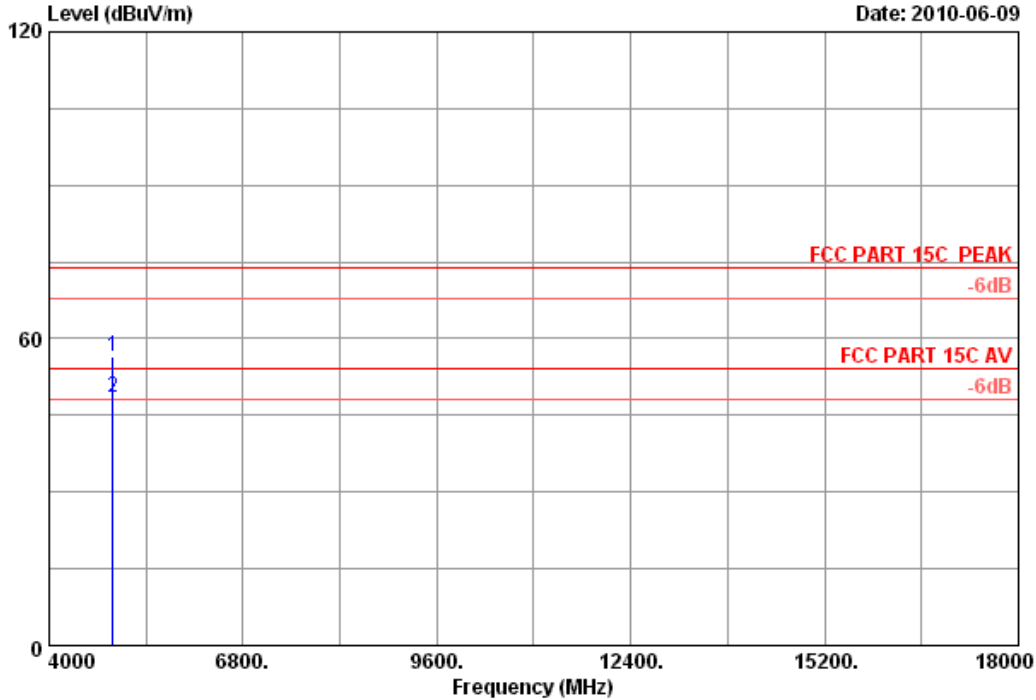


Site no.	: 3m Chamber	Data no.	: 51
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH11 2462MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 52  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.50	35.34	44.69	56.34	74.00	17.66	Peak
2	4924.000	34.49	12.50	35.34	36.85	48.50	54.00	5.50	Average

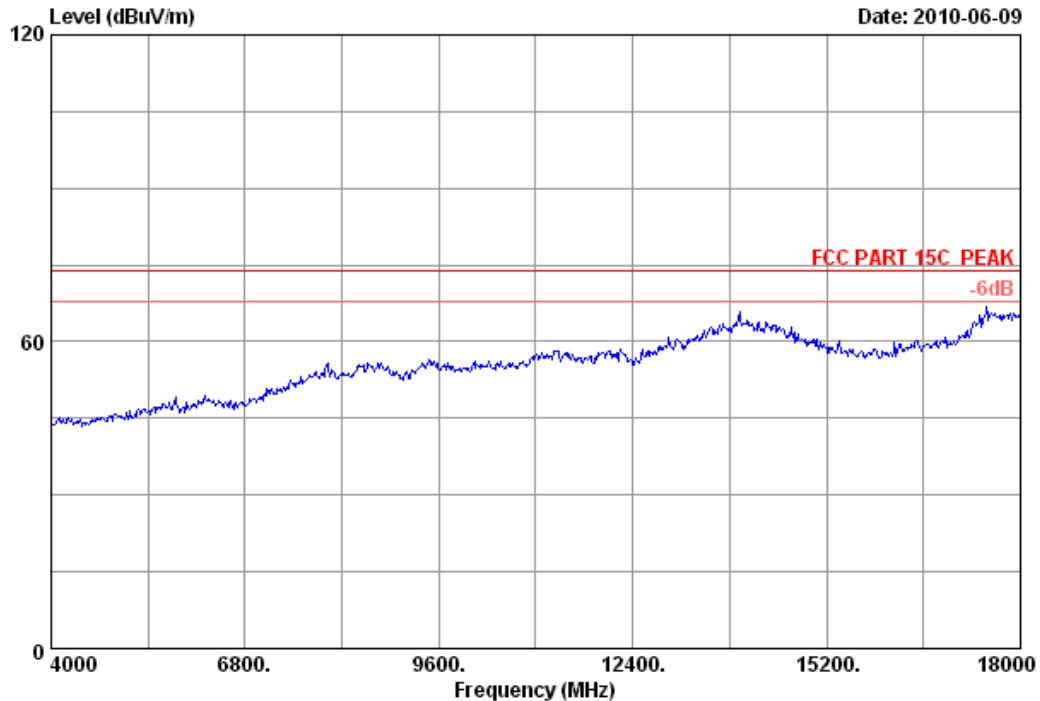
Remarks:

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



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Data: 53 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



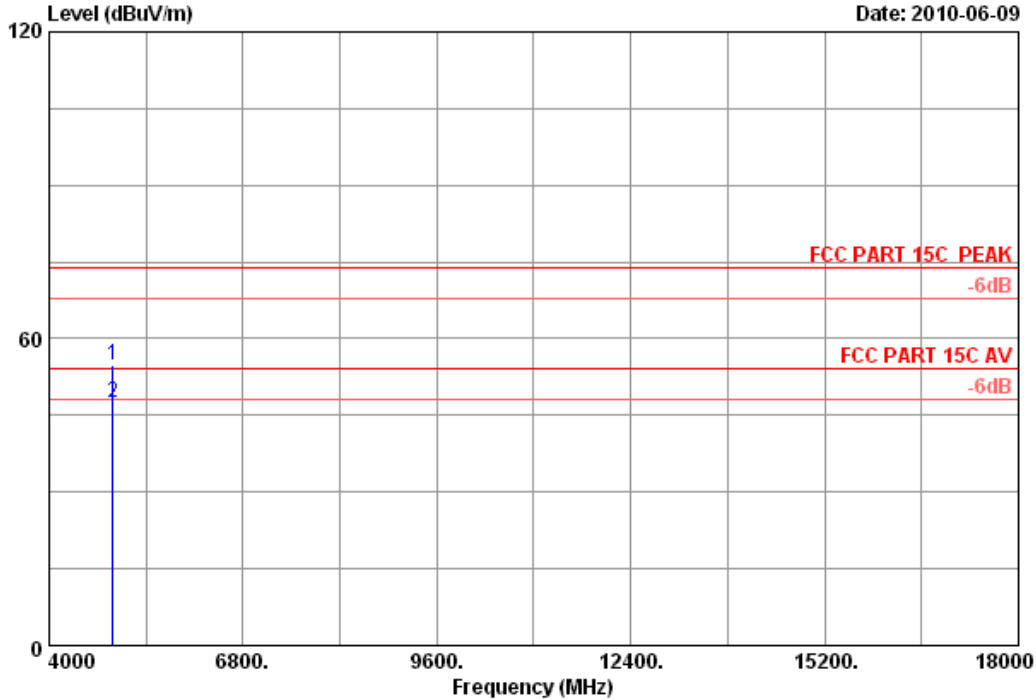
Site no.	: 3m Chamber	Data no.	: 53
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT20 CH11 2462MHz Tx		
M/N	: TL-MR3220		





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Site no. : 3m Chamber Data no. : 54  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4924.000	34.49	12.50	35.34	43.26	54.91	74.00	19.09	Peak
2	4924.000	34.49	12.50	35.34	35.98	47.63	54.00	6.37	Average

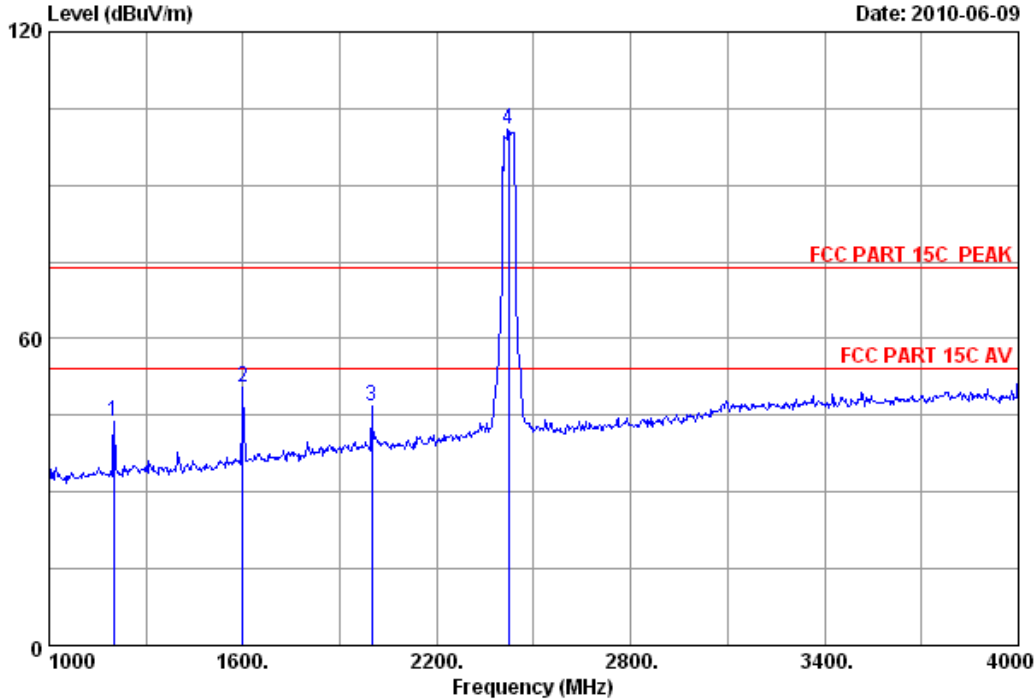
Remarks:

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



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Site no. : 3m Chamber Data no. : 59  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	49.11	43.93	74.00	30.07	Peak
2	1600.000	26.96	6.98	36.43	52.87	50.38	74.00	23.62	Peak
3	1999.000	29.20	7.93	36.09	45.61	46.65	74.00	27.35	Peak
4	2422.000	29.46	8.77	36.01	98.59	100.81	74.00	-26.81	Peak

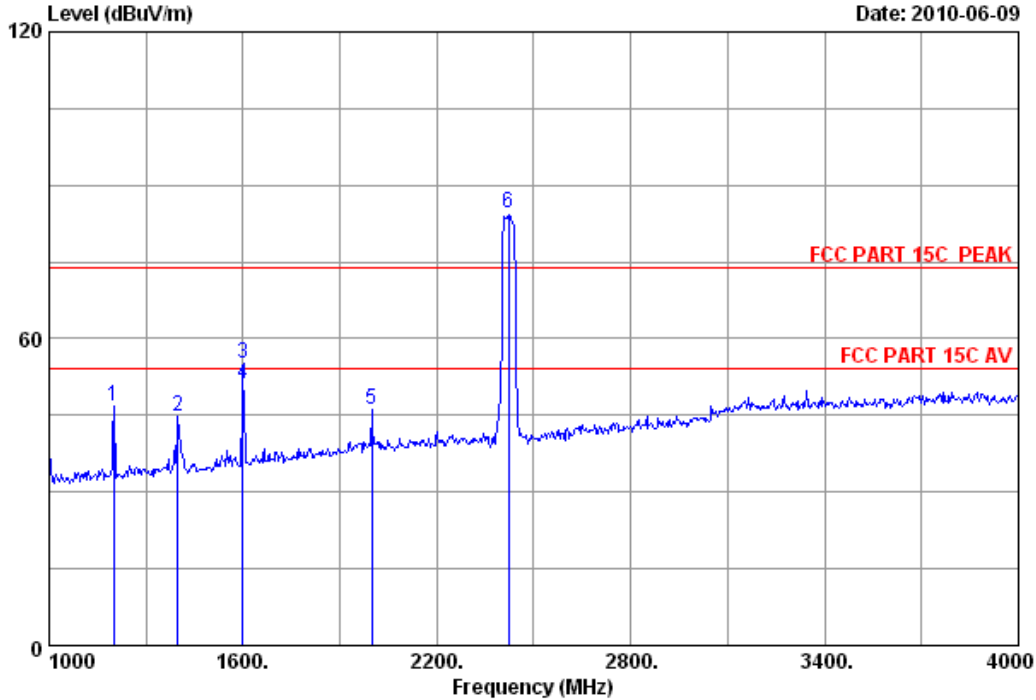
Remarks:

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



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Site no. : 3m Chamber Data no. : 60  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1201.000	25.81	5.98	36.97	52.01	46.83	74.00	27.17	Peak
2	1399.000	26.19	6.49	36.69	48.90	44.89	74.00	29.11	Peak
3	1600.000	26.96	6.98	36.43	57.71	55.22	74.00	18.78	Peak
4	1600.000	26.96	6.98	36.43	53.49	51.00	54.00	3.00	Average
5	1999.000	29.20	7.93	36.09	45.10	46.14	74.00	27.86	Peak
6	2422.000	29.46	8.77	36.01	82.33	84.55	74.00	-10.55	Peak

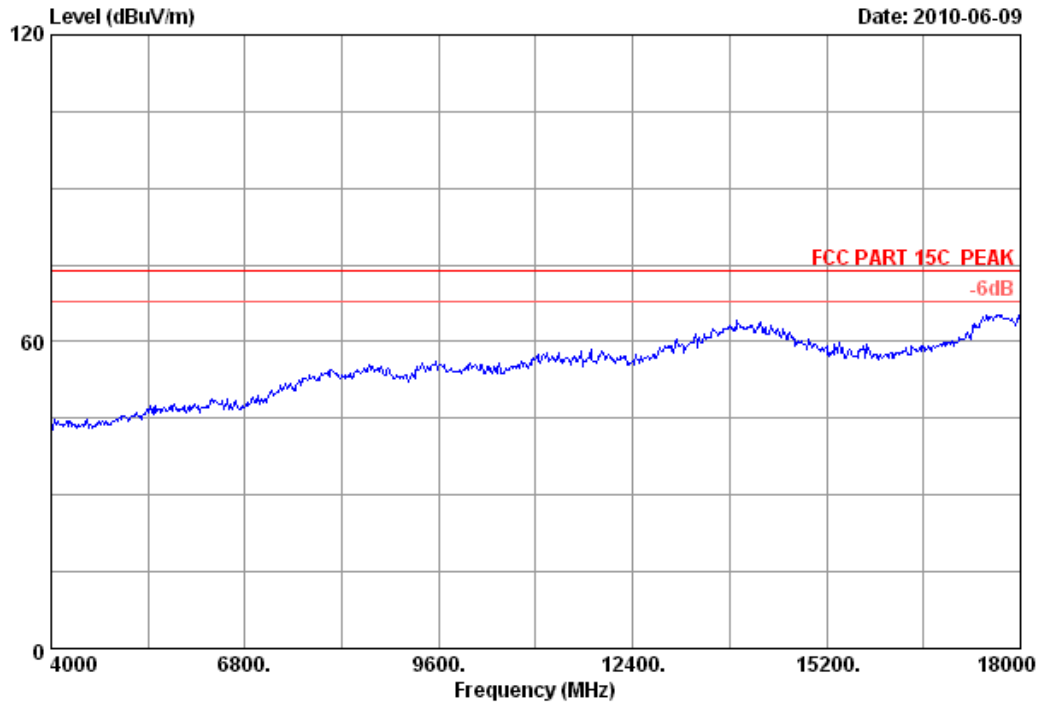
Remarks:

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



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Data: 55 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

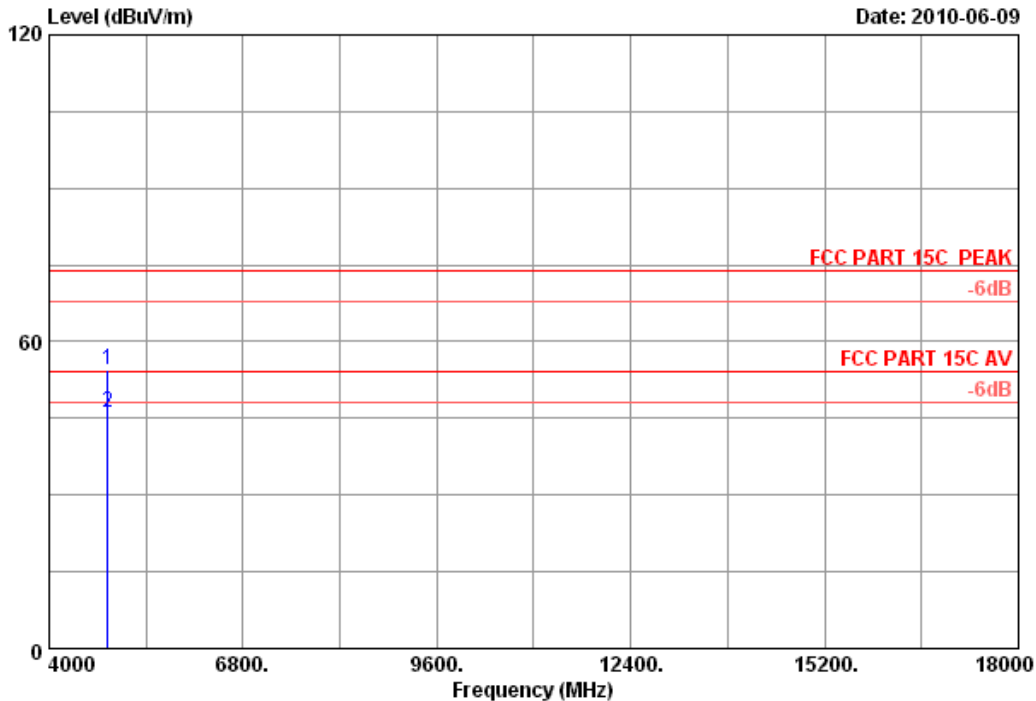


Site no.	: 3m Chamber	Data no.	: 55
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH1 2422MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 56  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4844.000	34.35	12.38	35.25	43.01	54.49	74.00	19.51	Peak
2	4844.000	34.35	12.38	35.25	34.58	46.06	54.00	7.94	Average

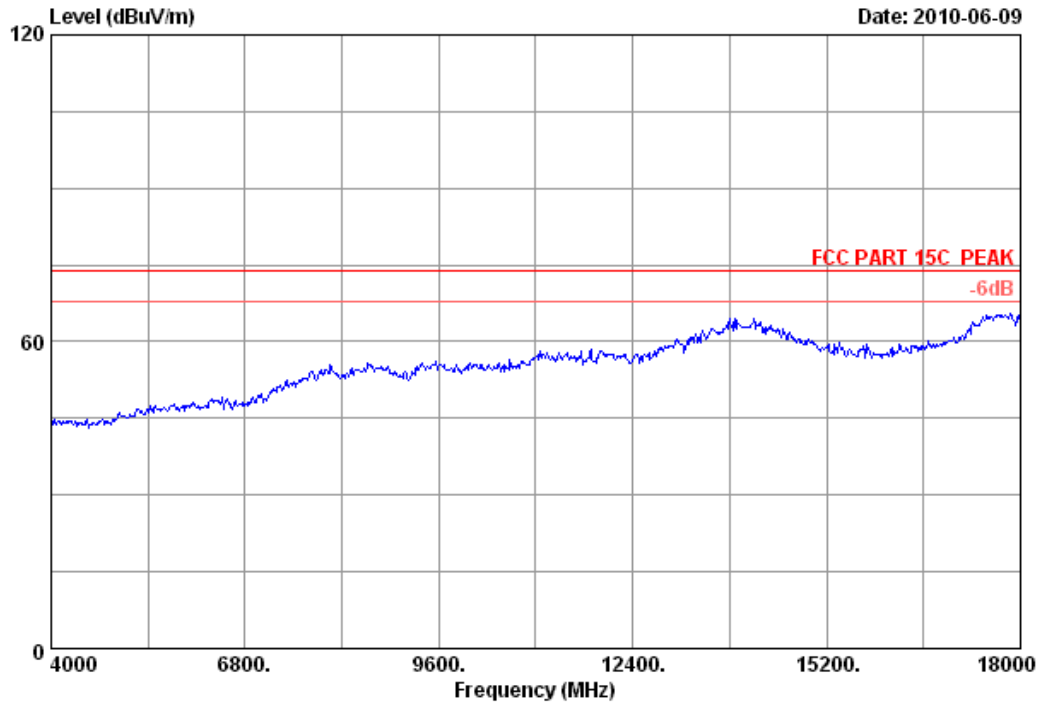
Remarks:

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



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Data: 57 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

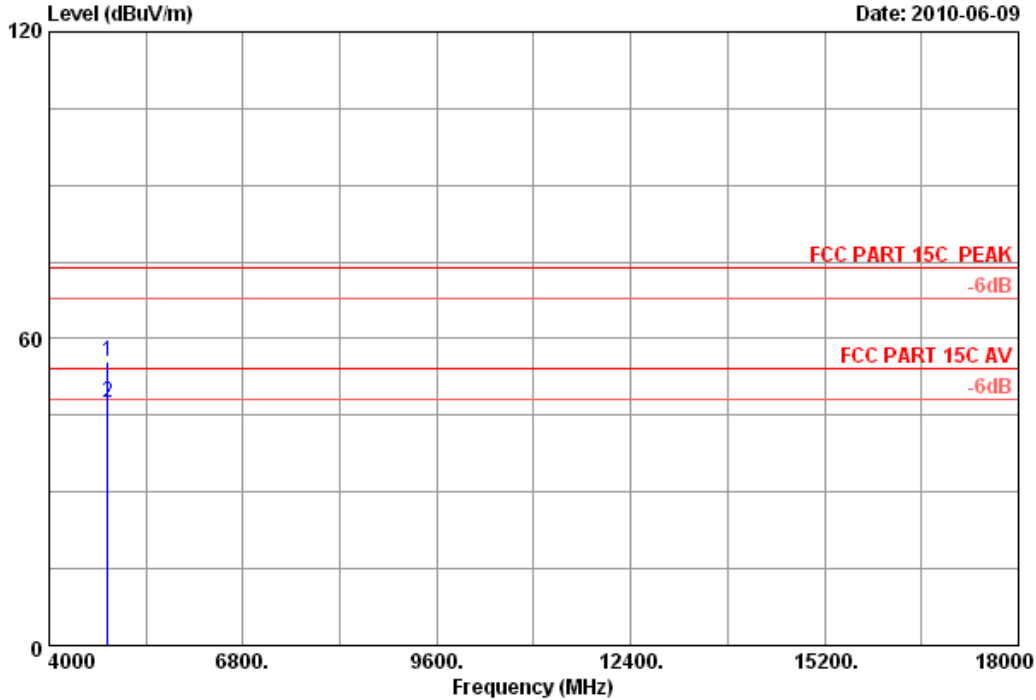


Site no.	: 3m Chamber	Data no.	: 57
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH1 2422MHz Tx		
M/N	: TL-MR3220		



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Site no. : 3m Chamber Data no. : 58  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4844.000	34.35	12.38	35.25	43.96	55.44	74.00	18.56	Peak
2	4844.000	34.35	12.38	35.25	35.84	47.32	54.00	6.68	Average

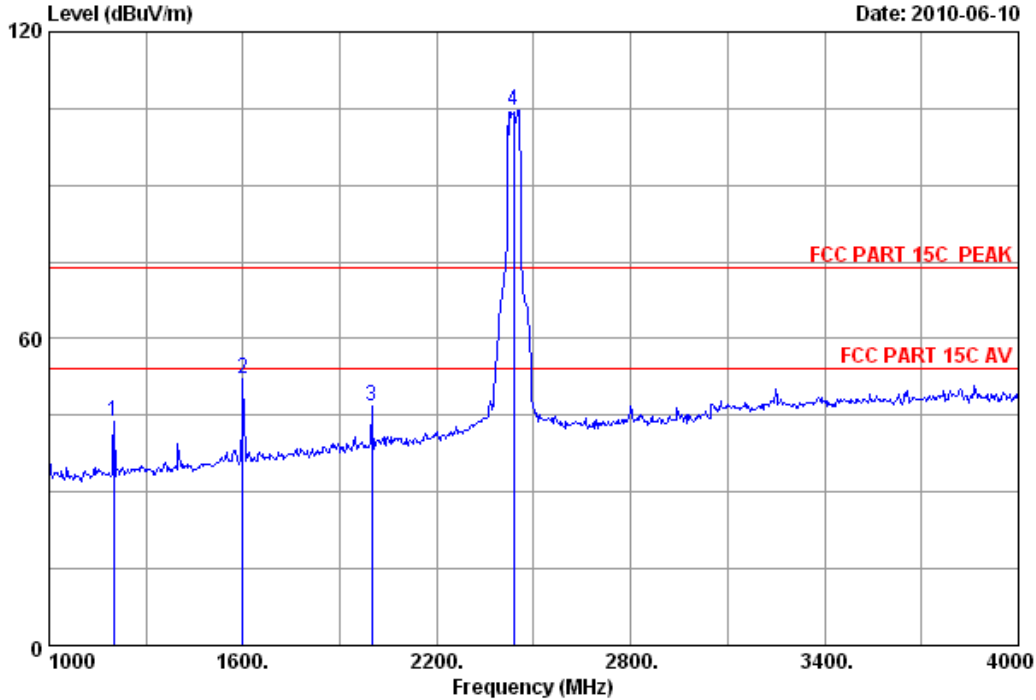
Remarks:

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



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Site no. : 3m Chamber Data no. : 61  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH4 2437MHz Tx  
 M/N : TL-MR3220

	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	1201.000	25.81	5.98	36.97	48.90	43.72	74.00	30.28	Peak
2	1600.000	26.96	6.98	36.43	54.78	52.29	74.00	21.71	Peak
3	1999.000	29.20	7.93	36.09	45.74	46.78	74.00	27.22	Peak
4	2437.000	29.47	8.77	36.06	102.61	104.79	74.00	-30.79	Peak

Remarks:

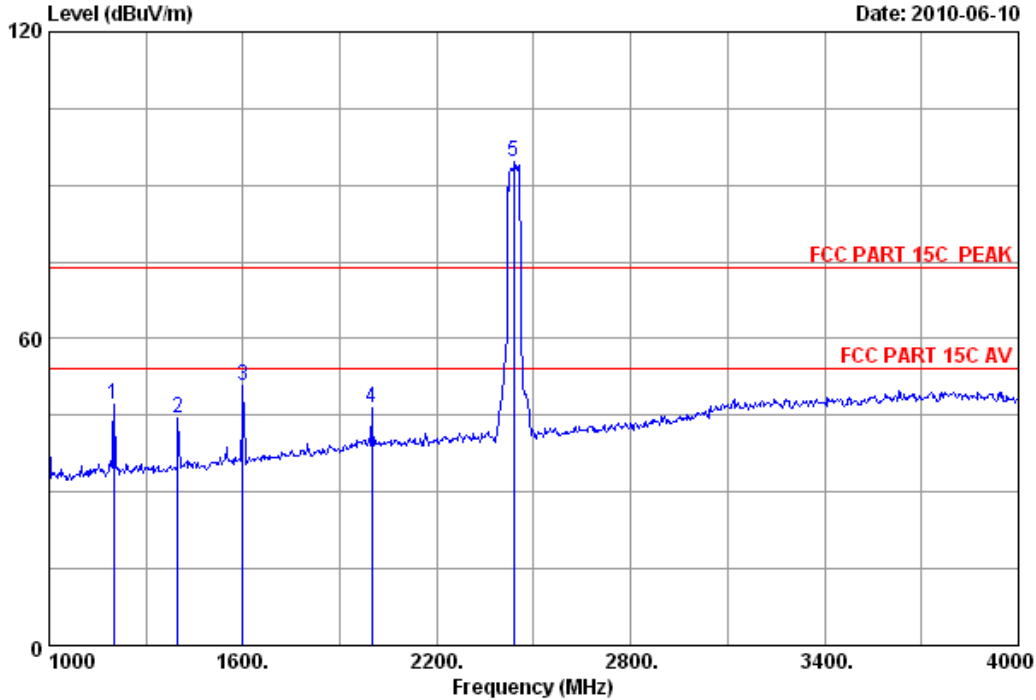
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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 Postcode:518057

Data: 62 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 62  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH4 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	52.18	47.00	74.00	27.00	Peak
2	1399.000	26.19	6.49	36.69	48.44	44.43	74.00	29.57	Peak
3	1600.000	26.96	6.98	36.43	53.34	50.85	74.00	23.15	Peak
4	1999.000	29.20	7.93	36.09	45.36	46.40	74.00	27.60	Peak
5	2437.000	29.47	8.77	36.06	92.37	94.55	74.00	-20.55	Peak

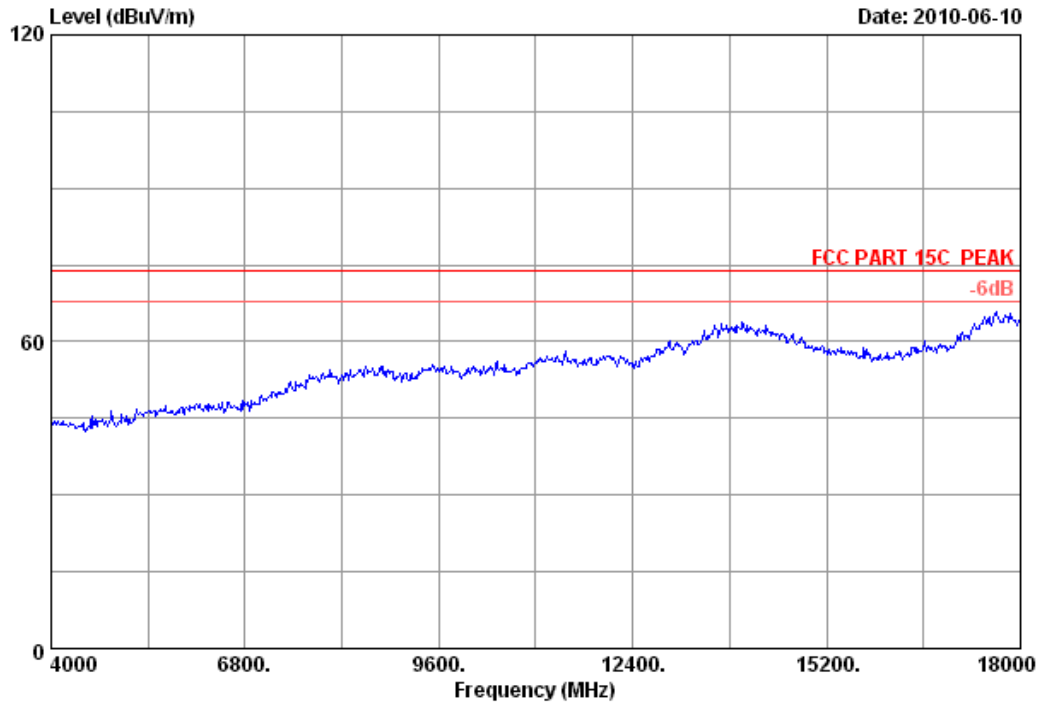
Remarks:

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



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Data: 63 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

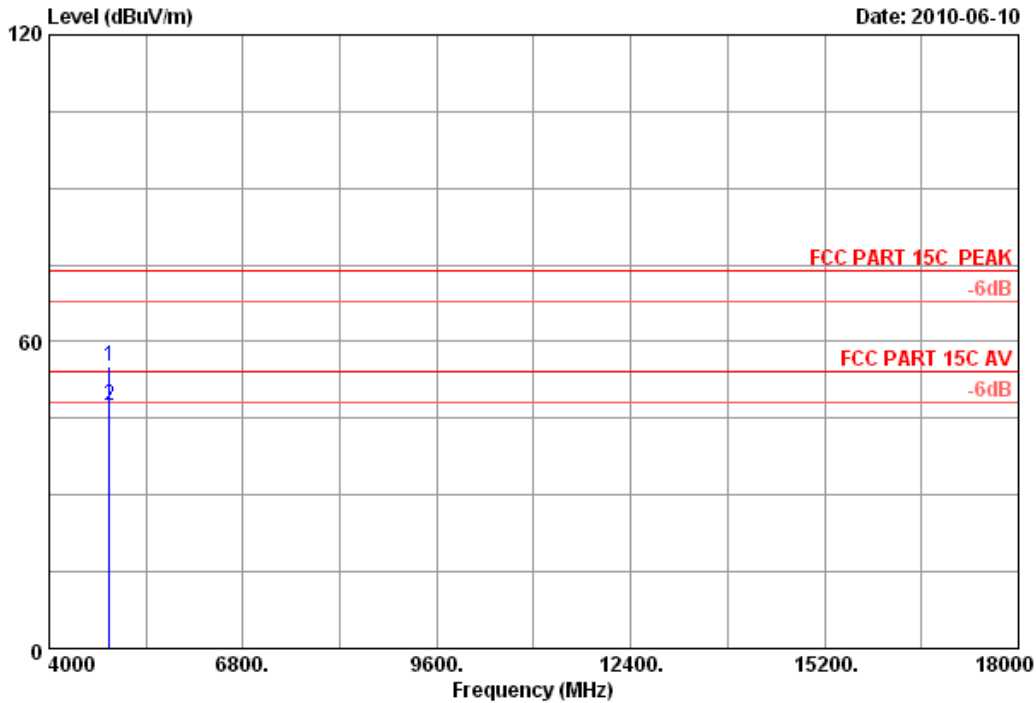


Site no.	: 3m Chamber	Data no.	: 63
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH4 2437MHz Tx		
M/N	: TL-MR3220		



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Data: 64 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 64  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH4 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	43.68	55.17	74.00	18.83	Peak
2	4874.000	34.41	12.44	35.36	35.83	47.32	54.00	6.68	Average

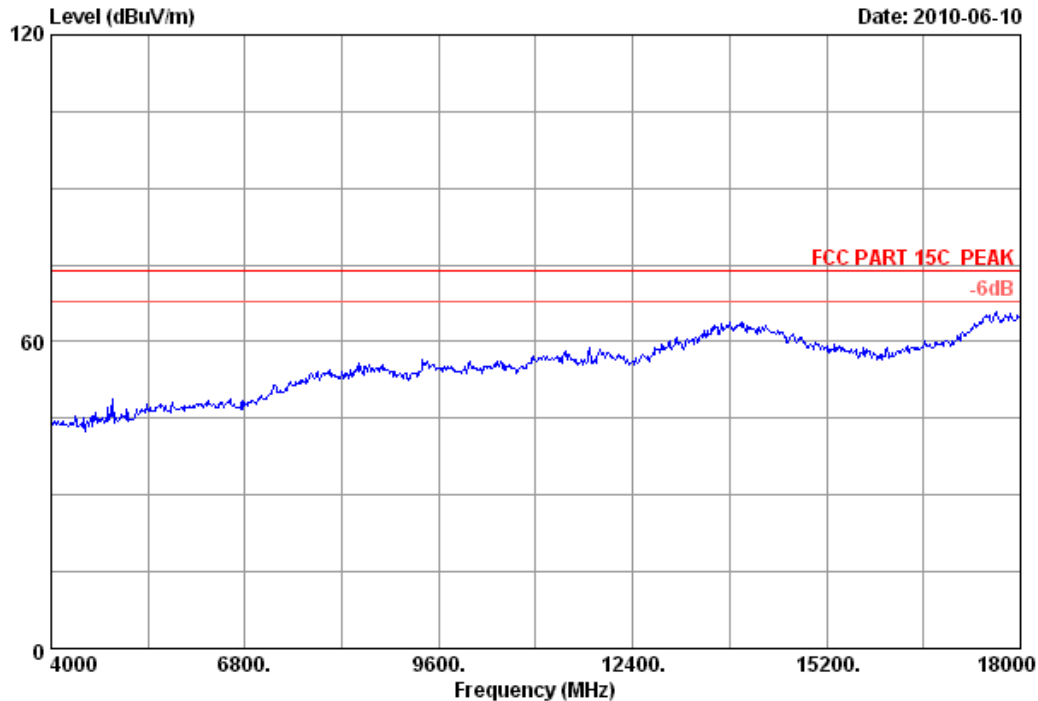
Remarks:

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



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Data: 65 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

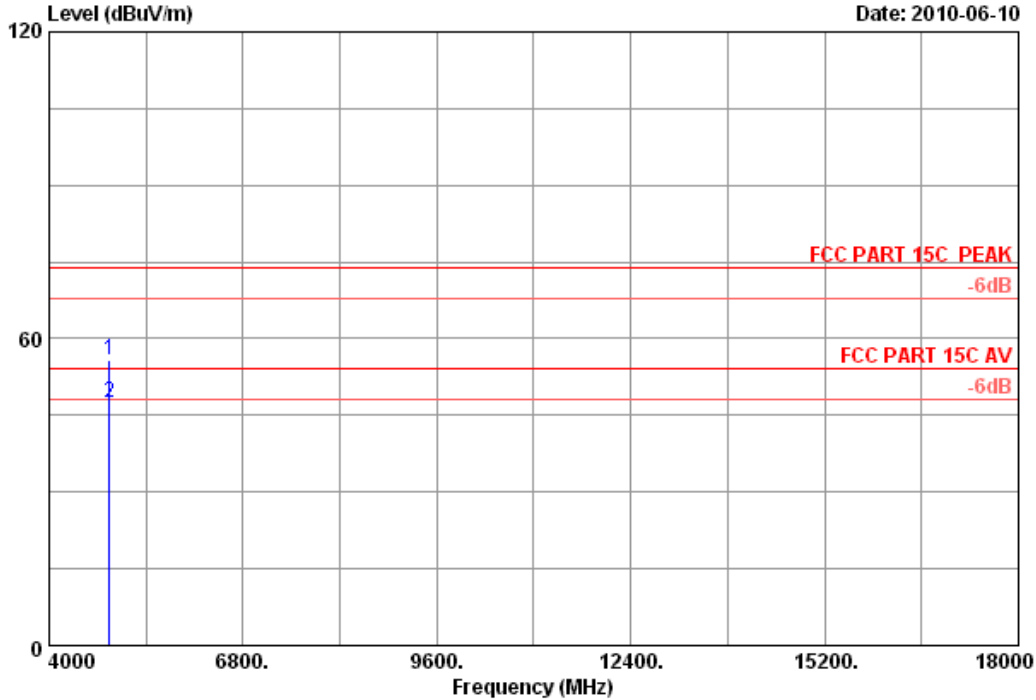


Site no.	: 3m Chamber	Data no.	: 65
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH4 2437MHz Tx		
M/N	: TL-MR3220		



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Data: 66 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 66  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH4 2437MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4874.000	34.41	12.44	35.36	44.17	55.66	74.00	18.34	Peak
2	4874.000	34.41	12.44	35.36	36.11	47.60	54.00	6.40	Average

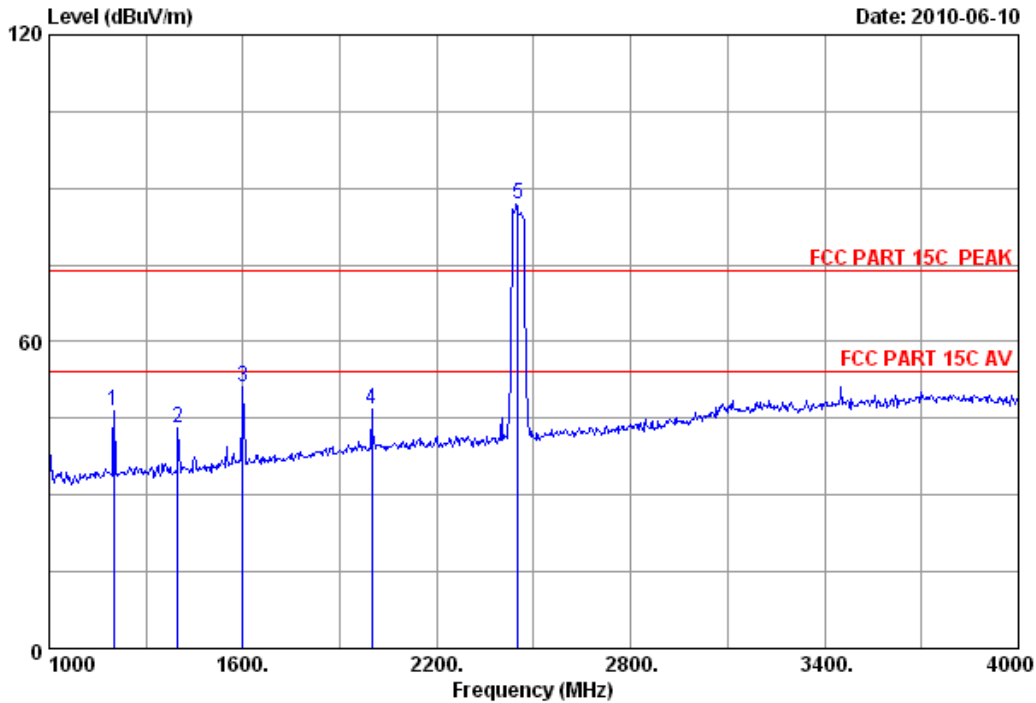
Remarks:

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



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Data: 71 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 71  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1201.000	25.81	5.98	36.97	51.71	46.53	74.00	27.47	Peak
2	1399.000	26.19	6.49	36.69	47.15	43.14	74.00	30.86	Peak
3	1600.000	26.96	6.98	36.43	53.53	51.04	74.00	22.96	Peak
4	1999.000	29.20	7.93	36.09	45.60	46.64	74.00	27.36	Peak
5	2452.000	29.47	8.82	36.06	84.61	86.84	74.00	-12.84	Peak

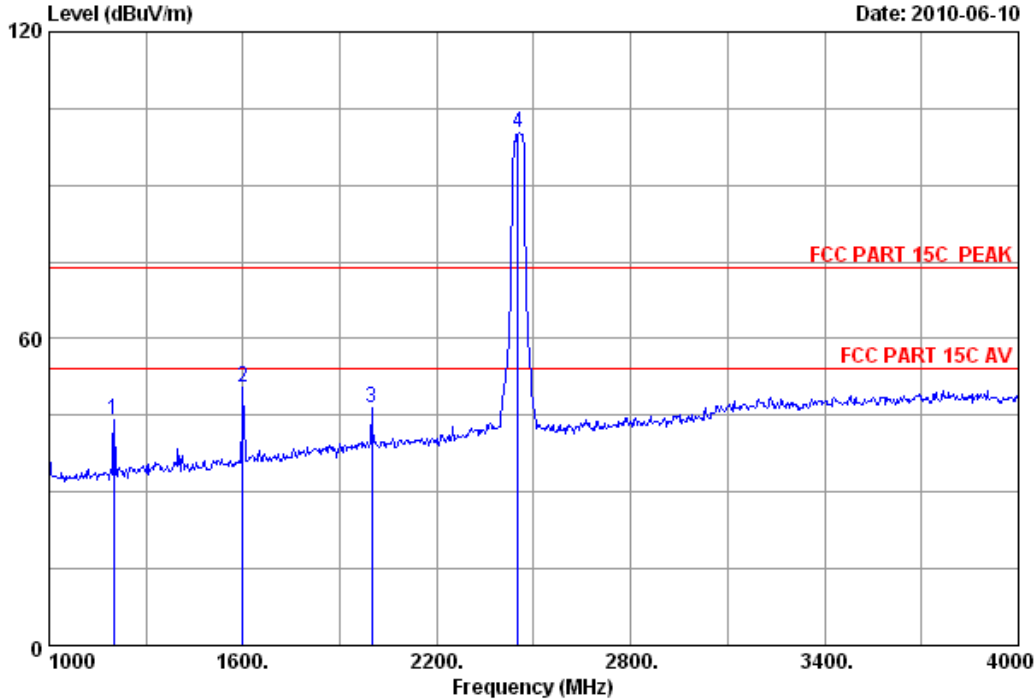
Remarks:

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



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Data: 72 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 72  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23\*C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1201.000	25.81	5.98	36.97	49.27	44.09	74.00	29.91	Peak
2	1600.000	26.96	6.98	36.43	53.01	50.52	74.00	23.48	Peak
3	1999.000	29.20	7.93	36.09	45.51	46.55	74.00	27.45	Peak
4	2452.000	29.47	8.82	36.06	97.90	100.13	74.00	-26.13	Peak

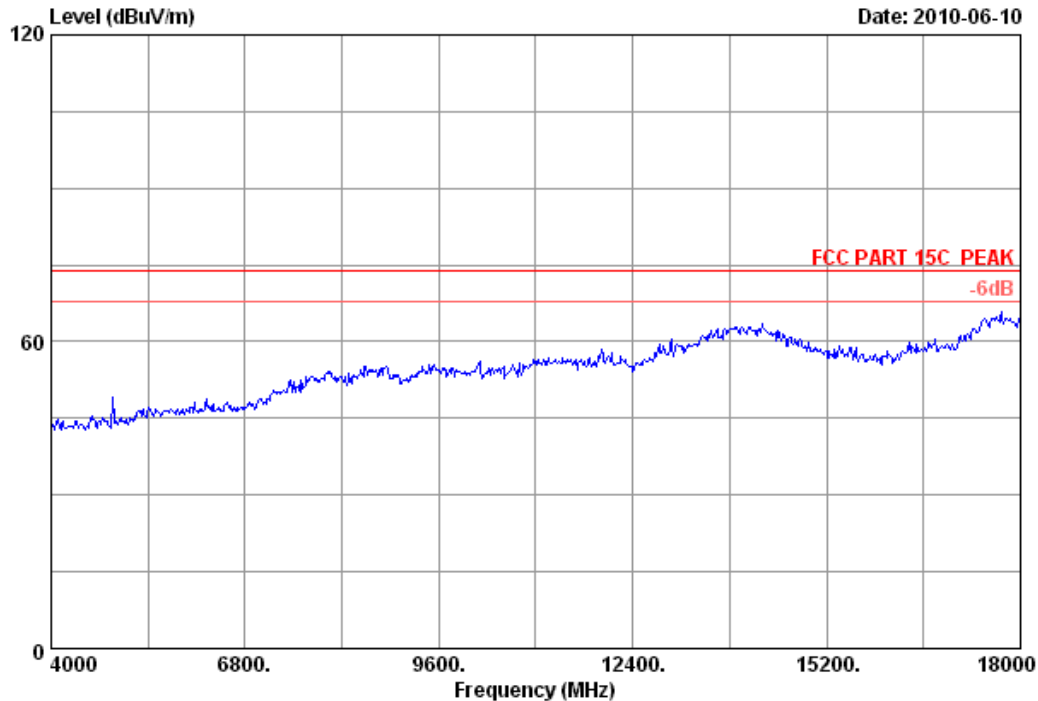
Remarks:

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



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Data: 67 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



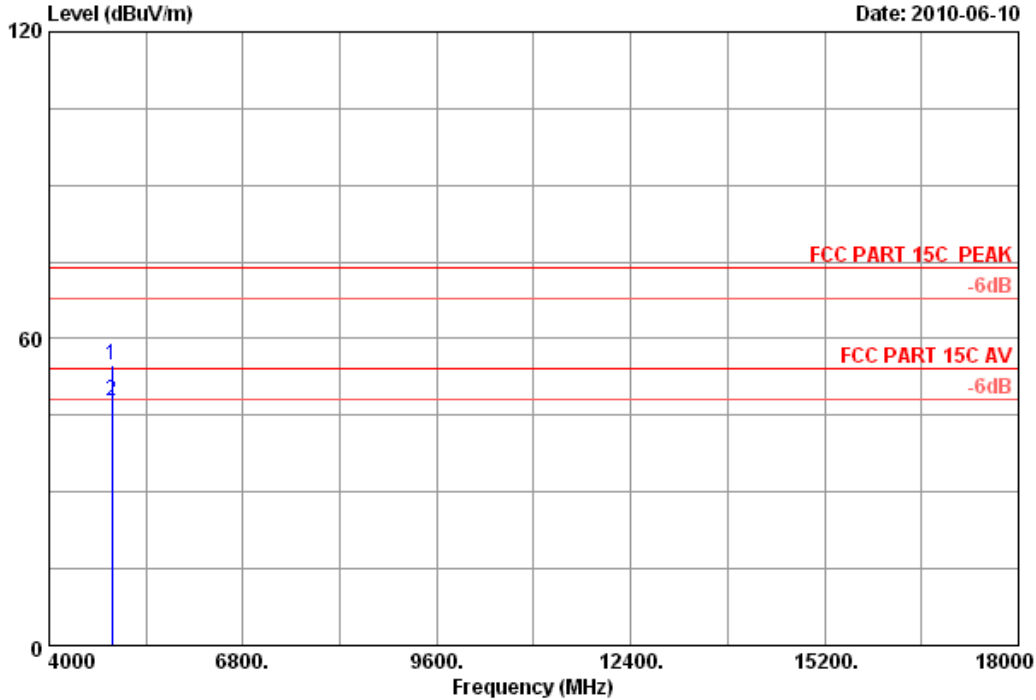
Site no.	: 3m Chamber	Data no.	: 67
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH7 2452MHz Tx		
M/N	: TL-MR3220		





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Data: 68 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 68  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4904.000	34.46	12.47	35.27	43.07	54.73	74.00	19.27	Peak
2	4904.000	34.46	12.47	35.27	36.01	47.67	54.00	6.33	Average

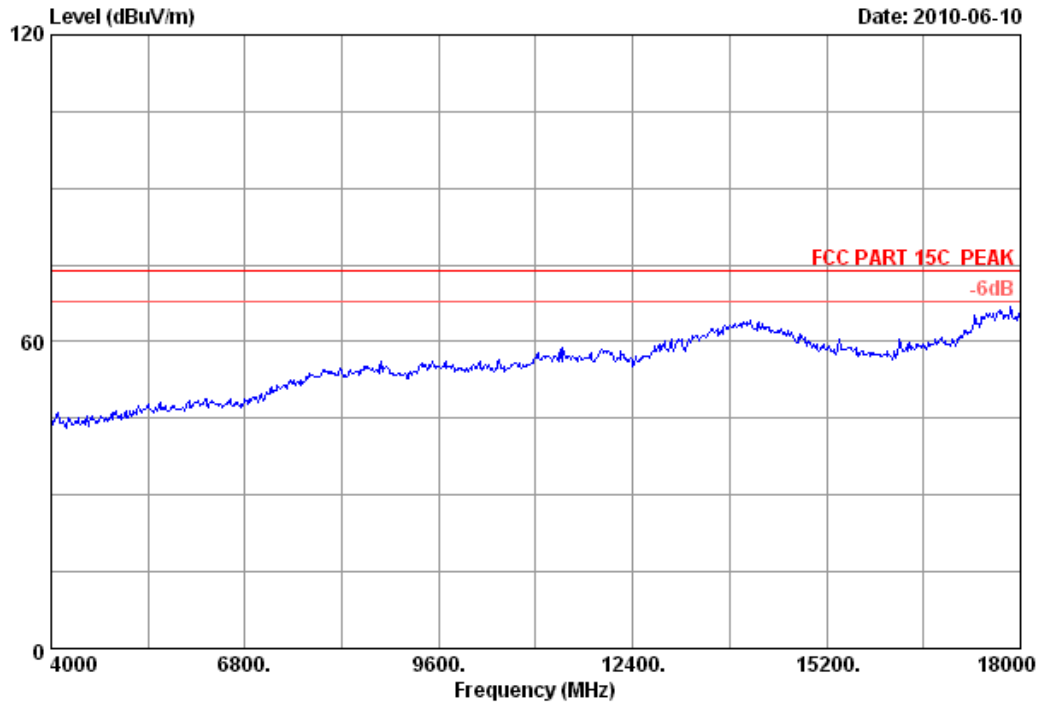
Remarks:

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



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Postcode:518057

Data: 69 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

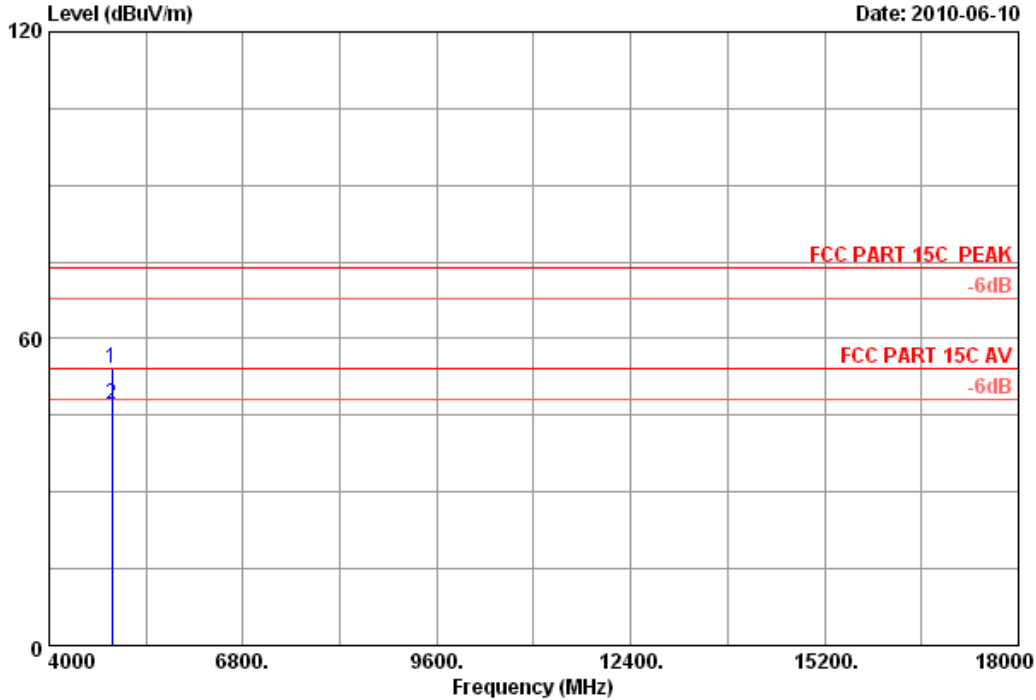


Site no.	: 3m Chamber	Data no.	: 69
Dis. / Ant.	: 3m 3115(0911)	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Sunny-lu
EUT	: 3G/3.75G Wireless Lite N Router		
Power	: DC 12V From Adapter Input AC 120V/60Hz		
Test mode	: IEEE802.11n HT40 CH7 2452MHz Tx		
M/N	: TL-MR3220		



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Data: 70 File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 70  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4904.000	34.46	12.47	35.27	42.58	54.24	74.00	19.76	Peak
2	4904.000	34.46	12.47	35.27	35.48	47.14	54.00	6.86	Average

Remarks:

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

## 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.08,10	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08,10	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,10	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

- 1, Connected the EUT's antenna port to spectrum analyzer by 20dB attenuator.
- 2, Measure all the conducted emissions from antenna port by spectrum analyzer as below set:

RBW=100KHz; VBW=300KHz; Detector: Peak; Sweep time: Auto

Note: The cable loss and attenuator loss were offset into spectrum analyzer as an amplitude offset.

## 5.4. Test result

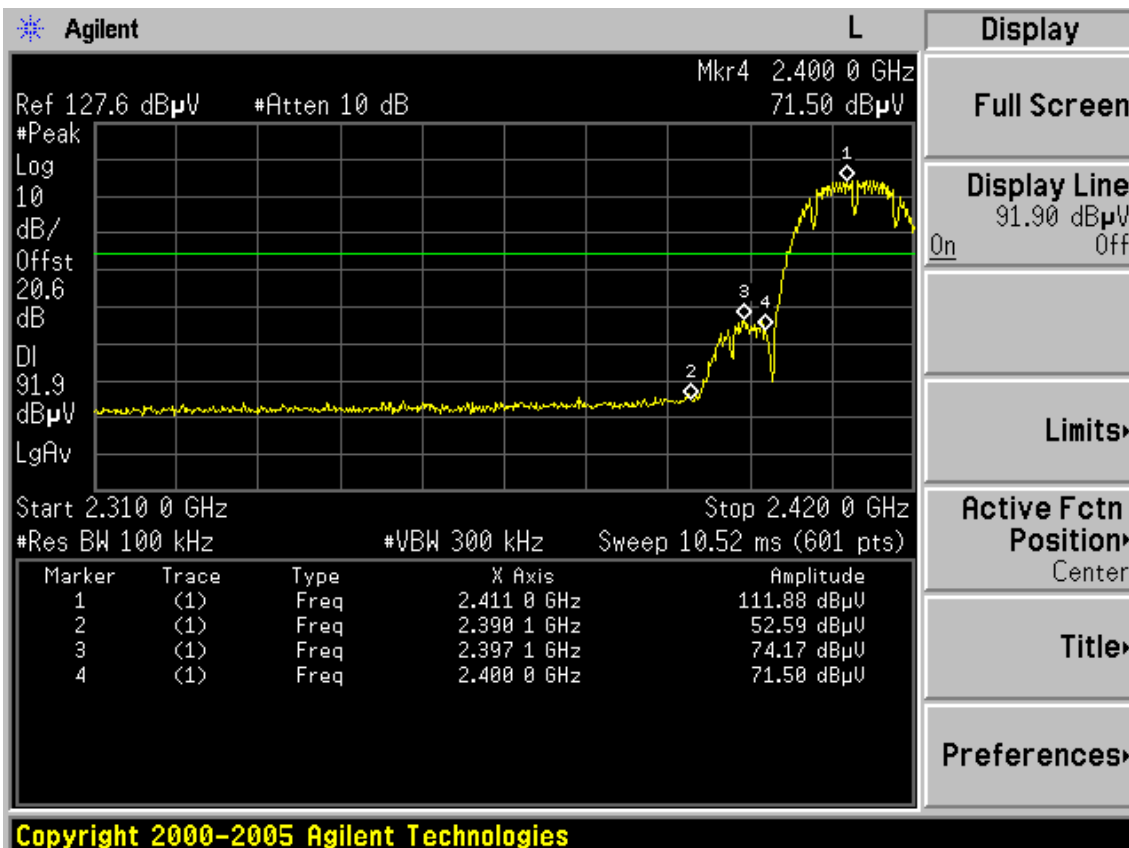
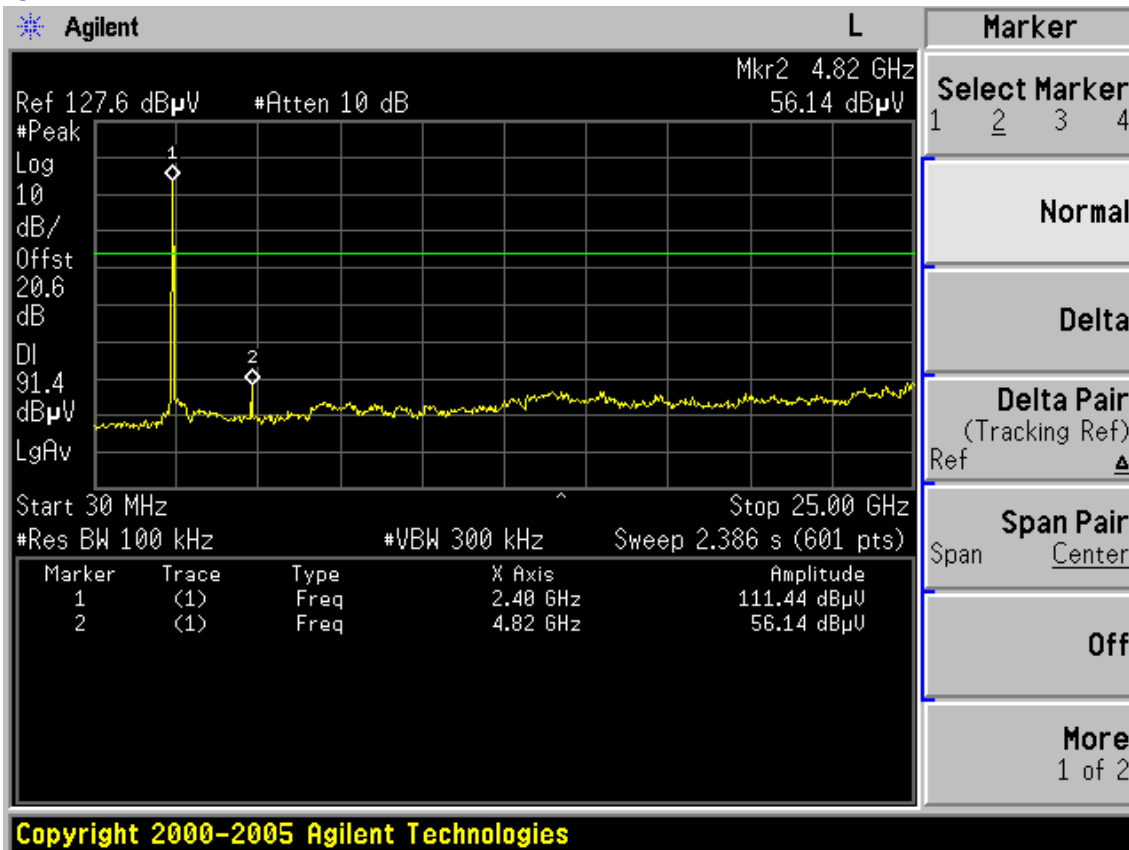
EUT: 3G/3.75G Wireless Lite N Router		
M/N: TL-MR3220		
Test date:2010-06-09	Pressure: 100.6kpa	Humidity: 56 %
Tested by: Sunny-Lu	Test site: RF site	Temperature : 25°C

Cable loss: 0.6dB		Attenuator loss: 20dB	Antenna Gain: 5.0dBi
Test Mode	CH	Result	
11b	CH1	PASS	
	CH6	PASS	
	CH11	PASS	
11g	CH1	PASS	
	CH6	PASS	
	CH11	PASS	
11n HT20	CH1	PASS	
	CH6	PASS	
	CH11	PASS	
11n HT40	CH1	PASS	
	CH4	PASS	
	CH7	PASS	
Note: See below original test data.			

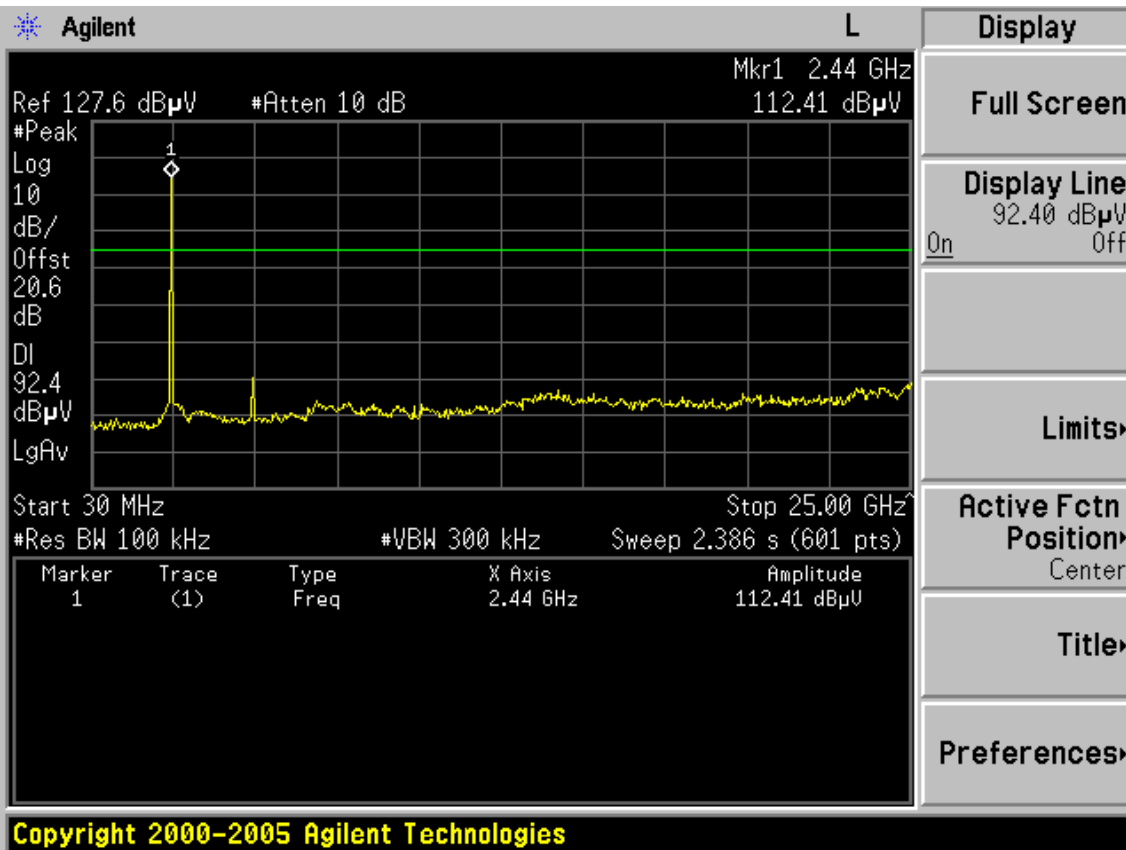
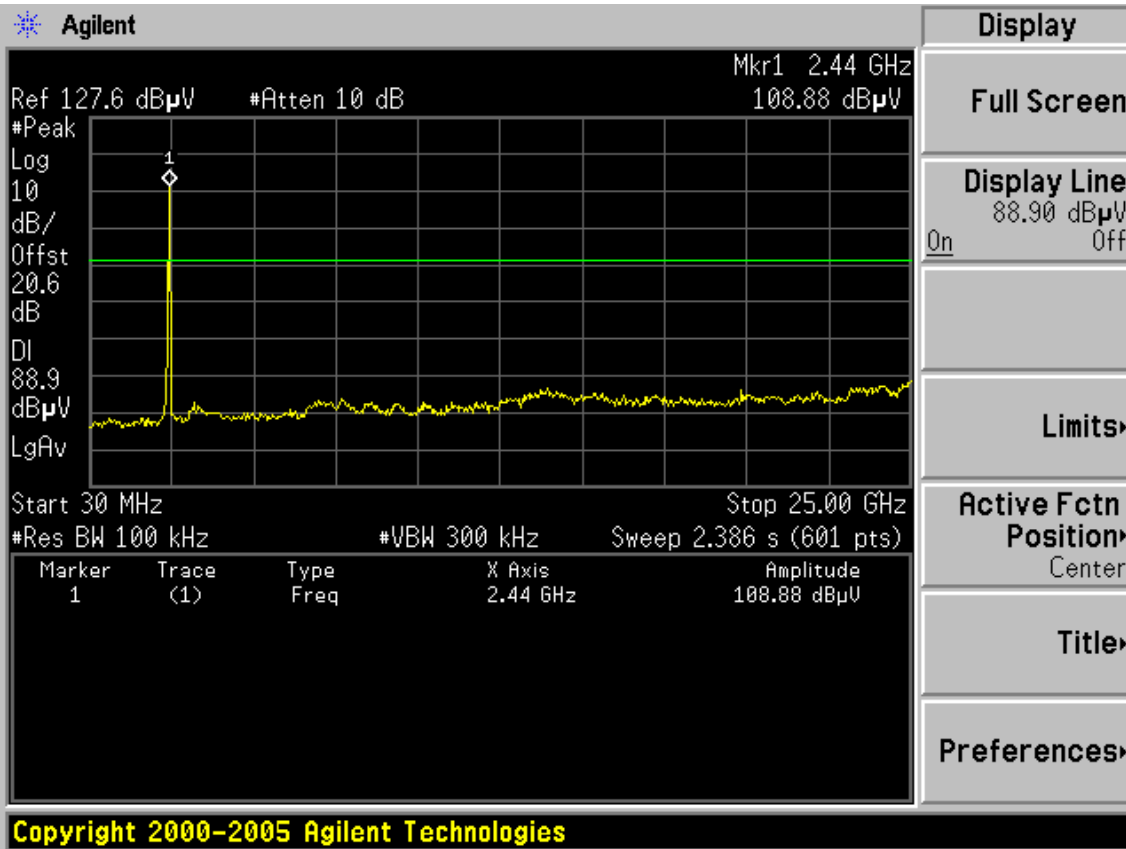
**Conducted emission test data:**

Test Mode: IEEE 802.11b TX

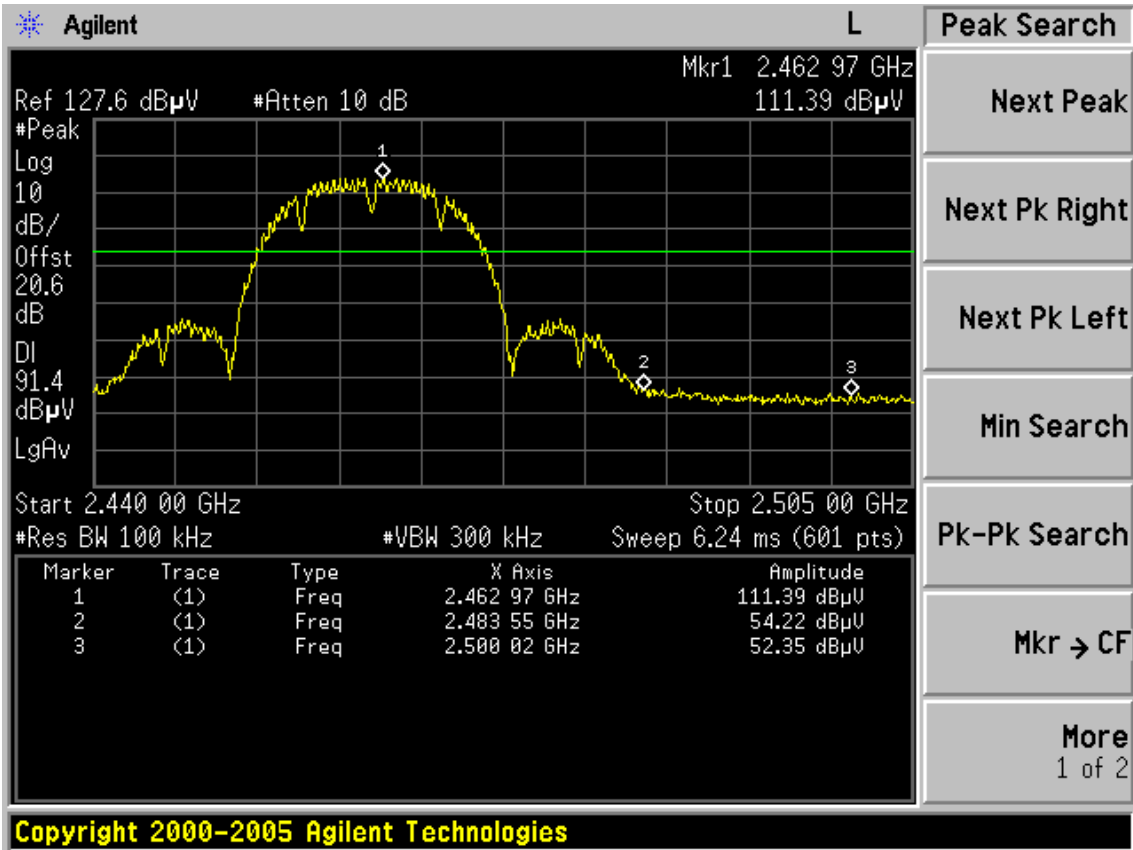
CH 1



CH 6

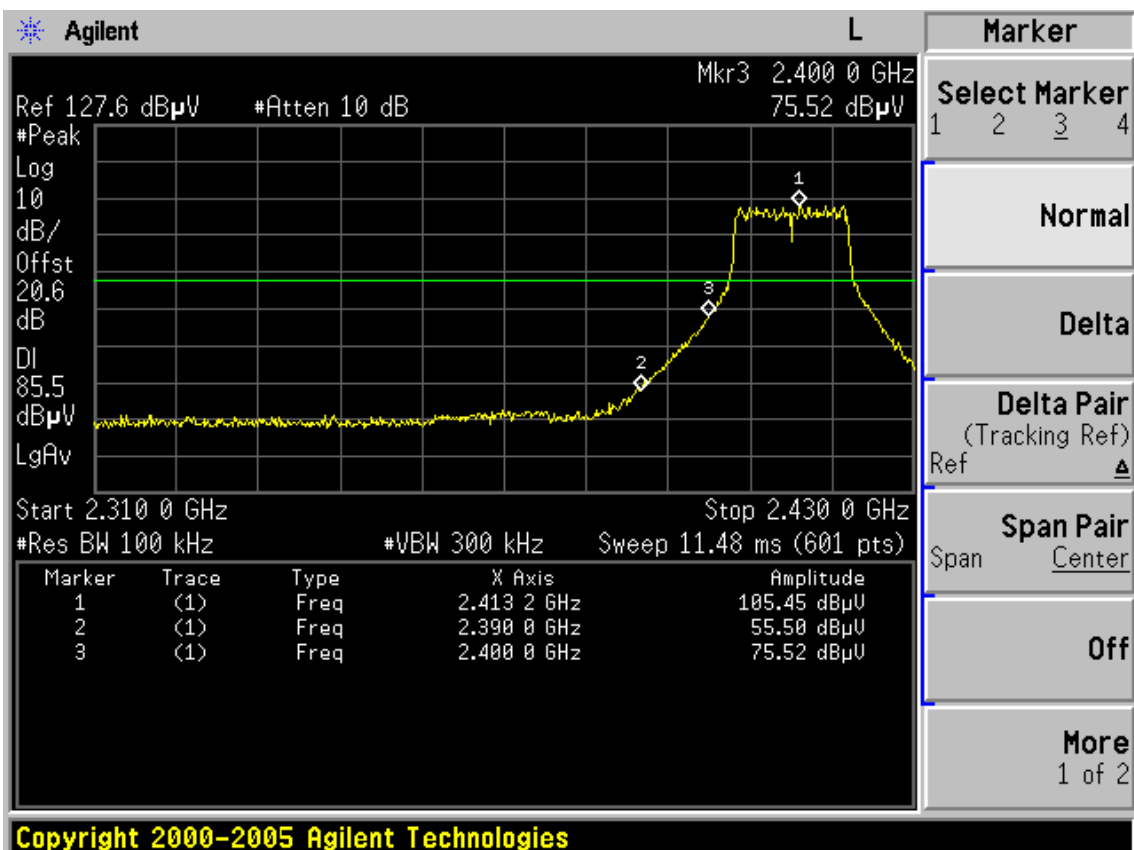
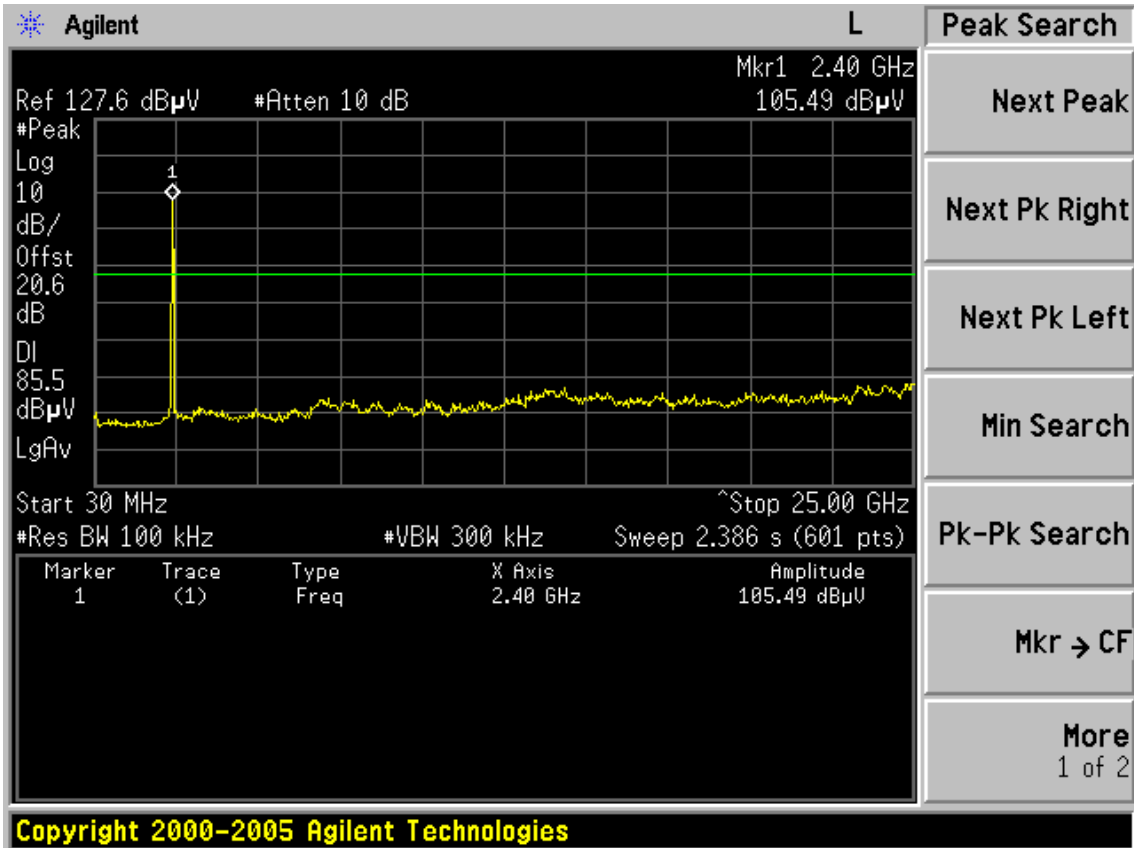


CH 11

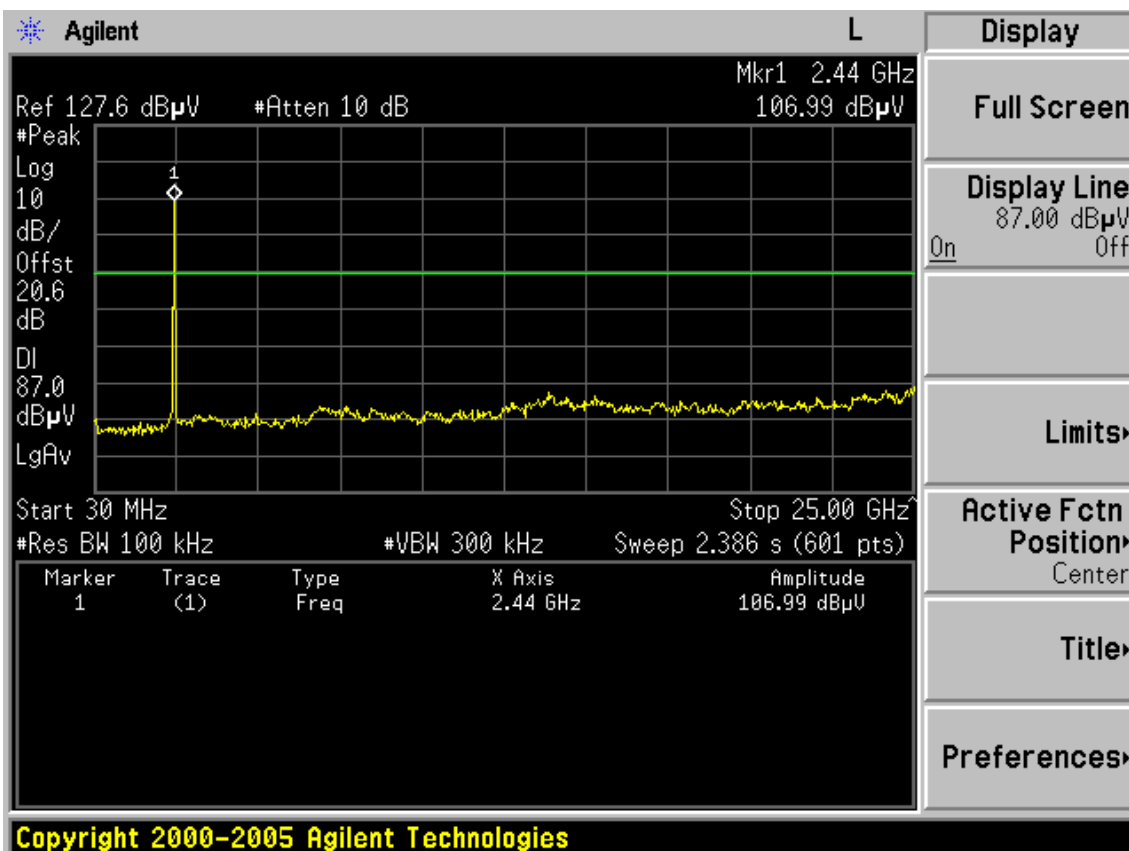
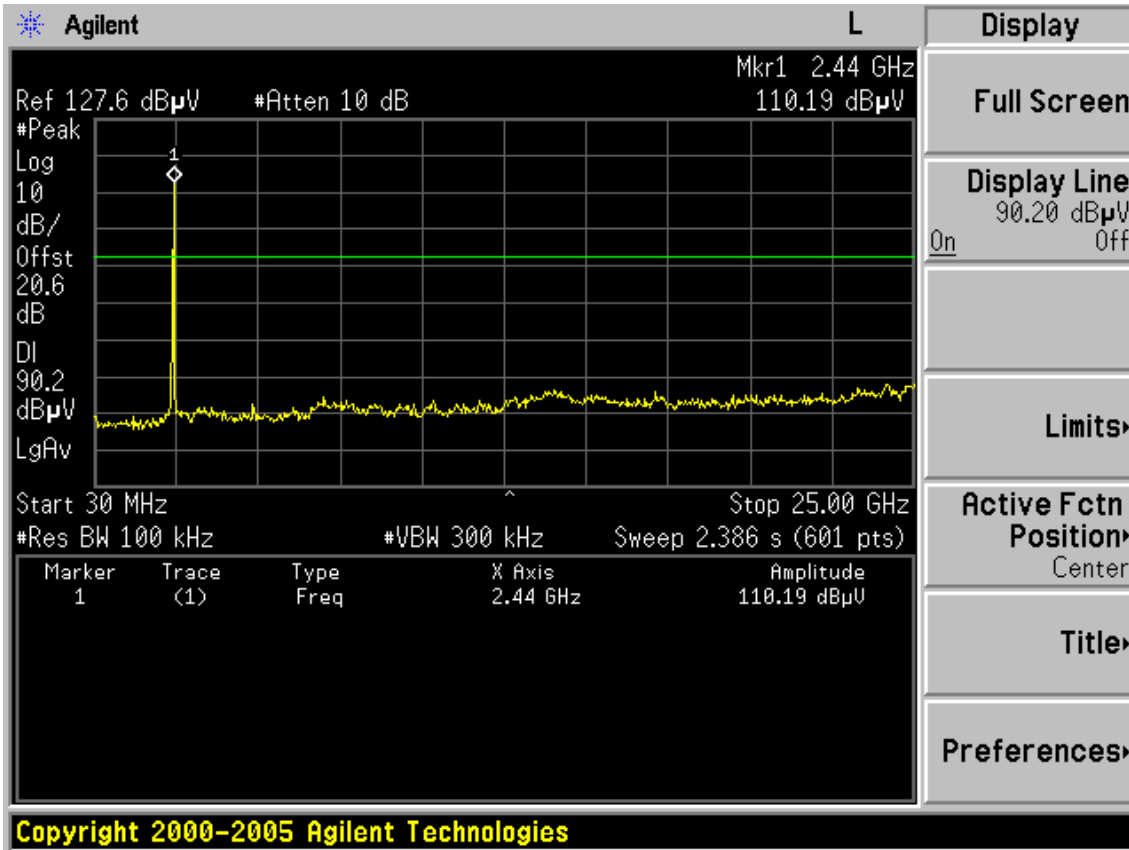




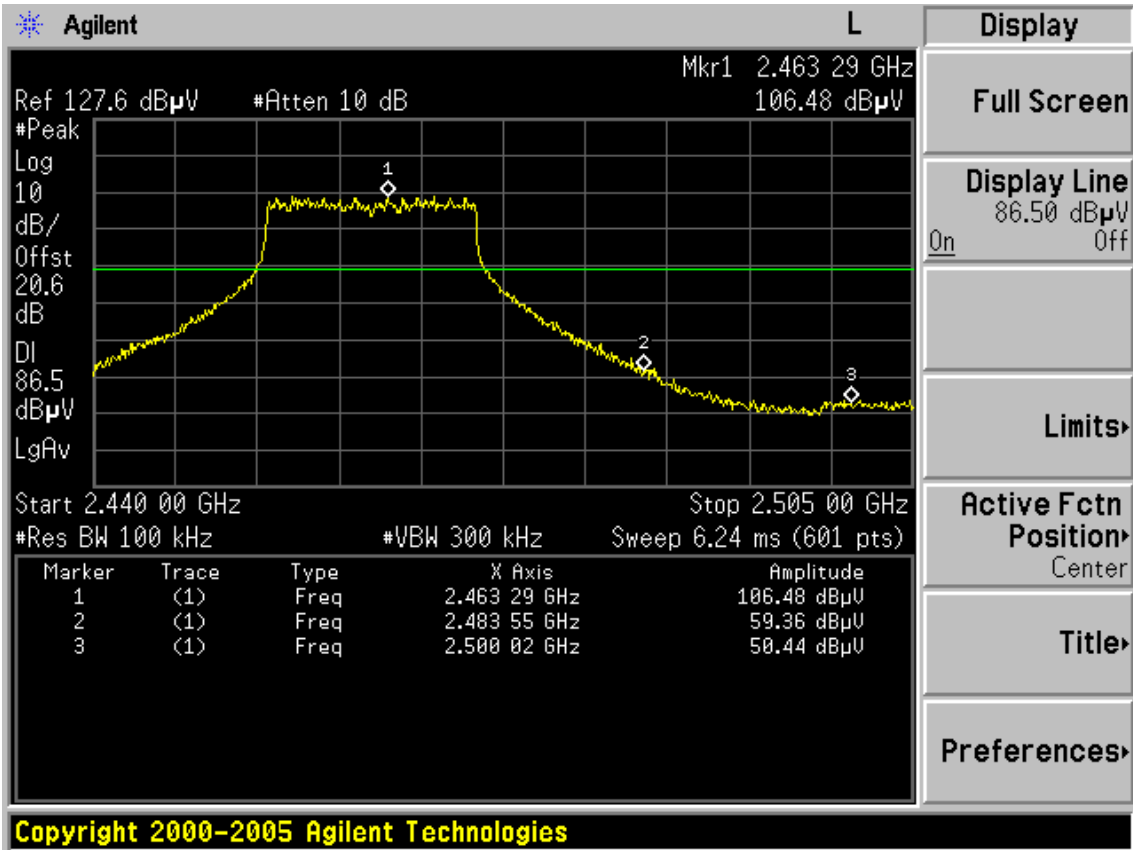
Test Mode: IEEE 802.11g TX  
CH 1



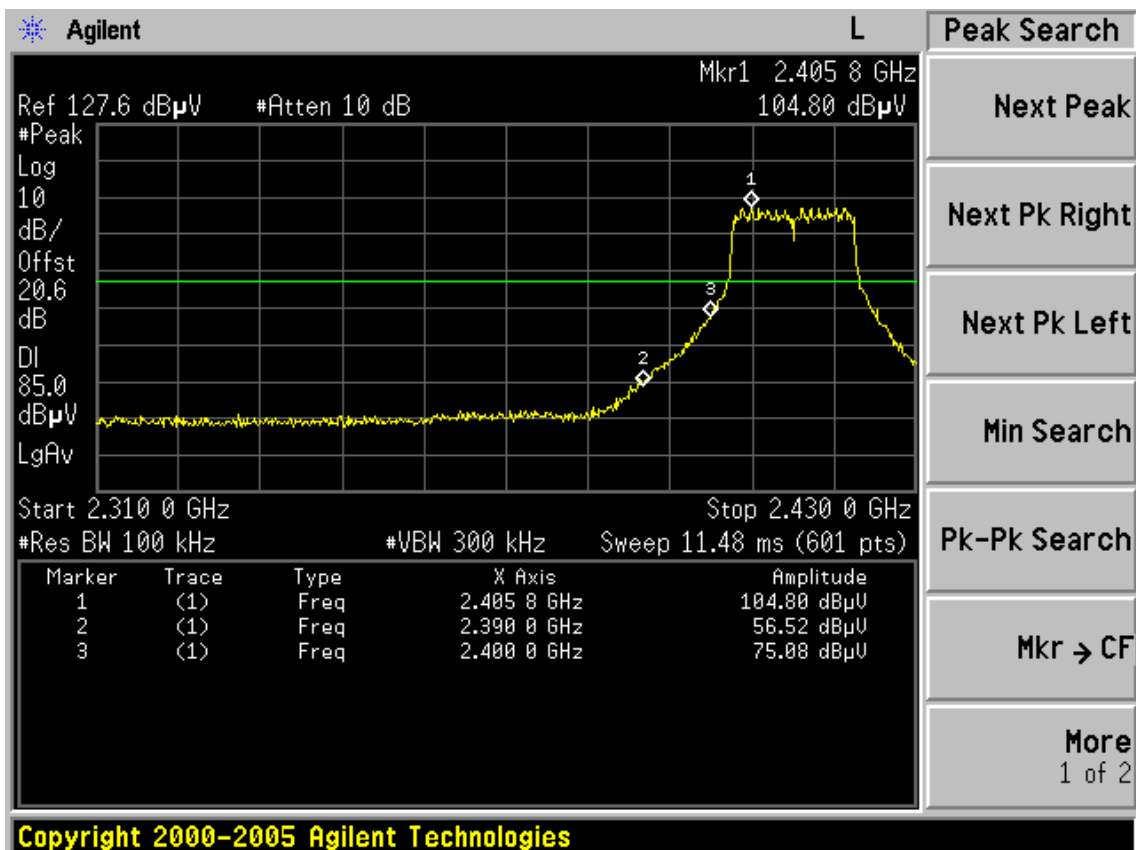
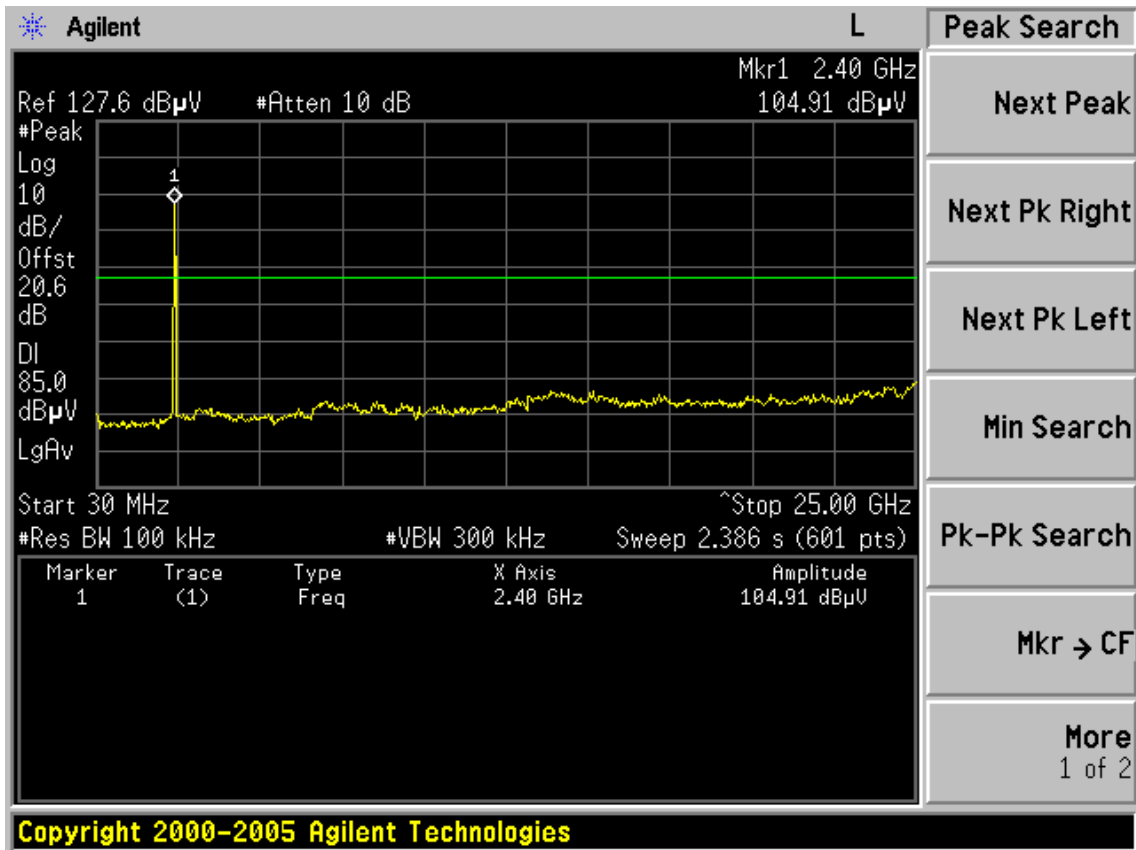
CH 6



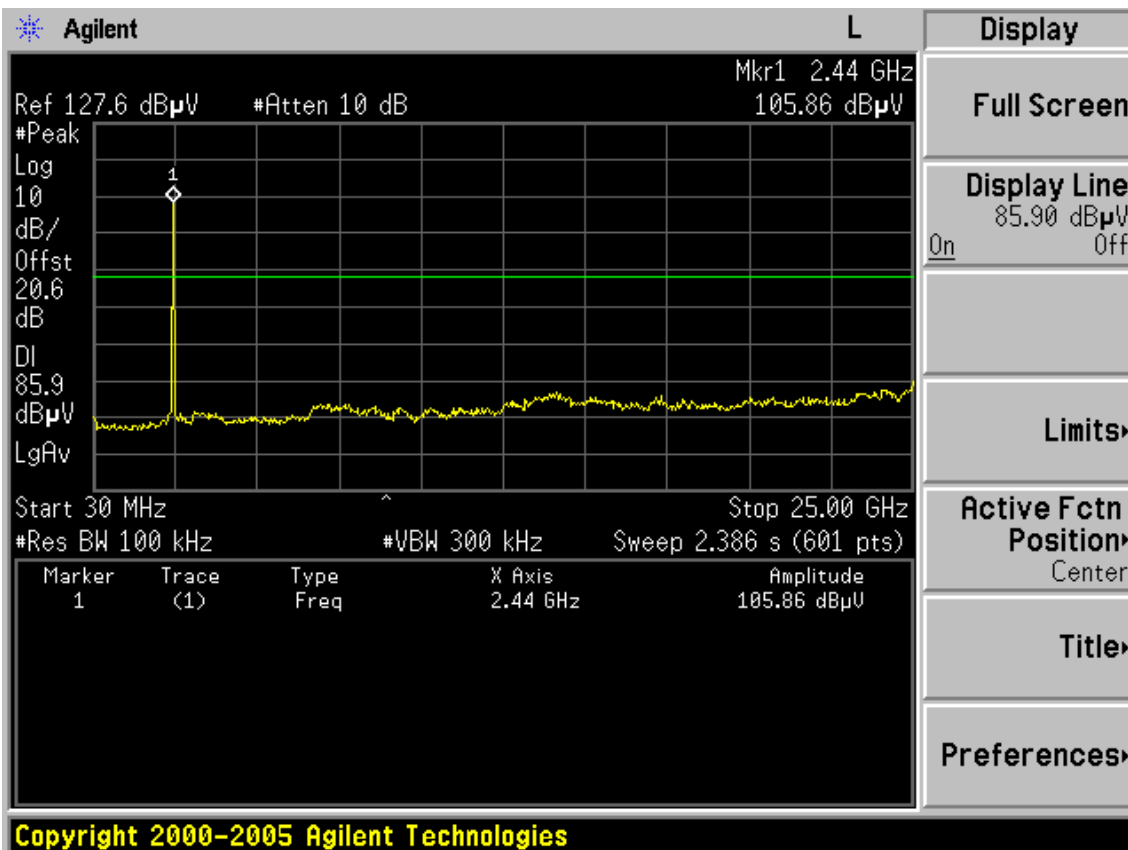
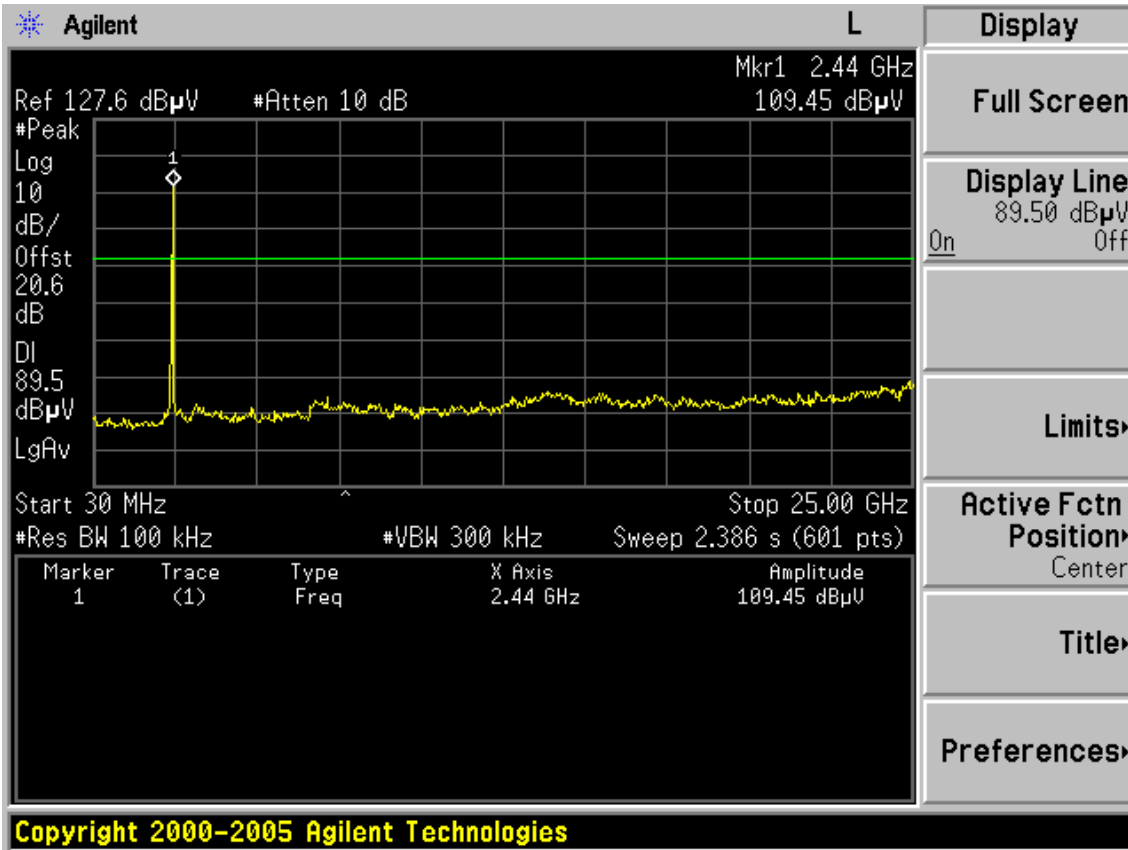
CH 11



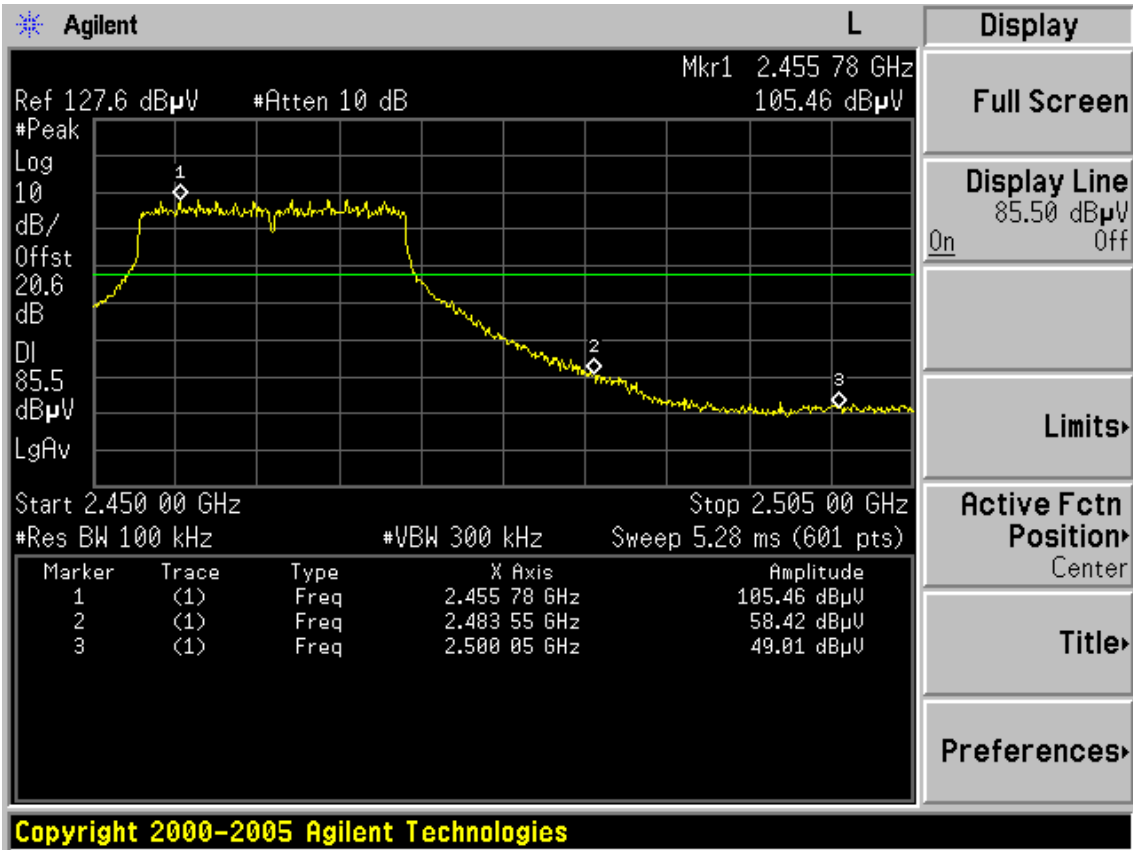
Test Mode: IEEE 802.11n HT20  
CH 1



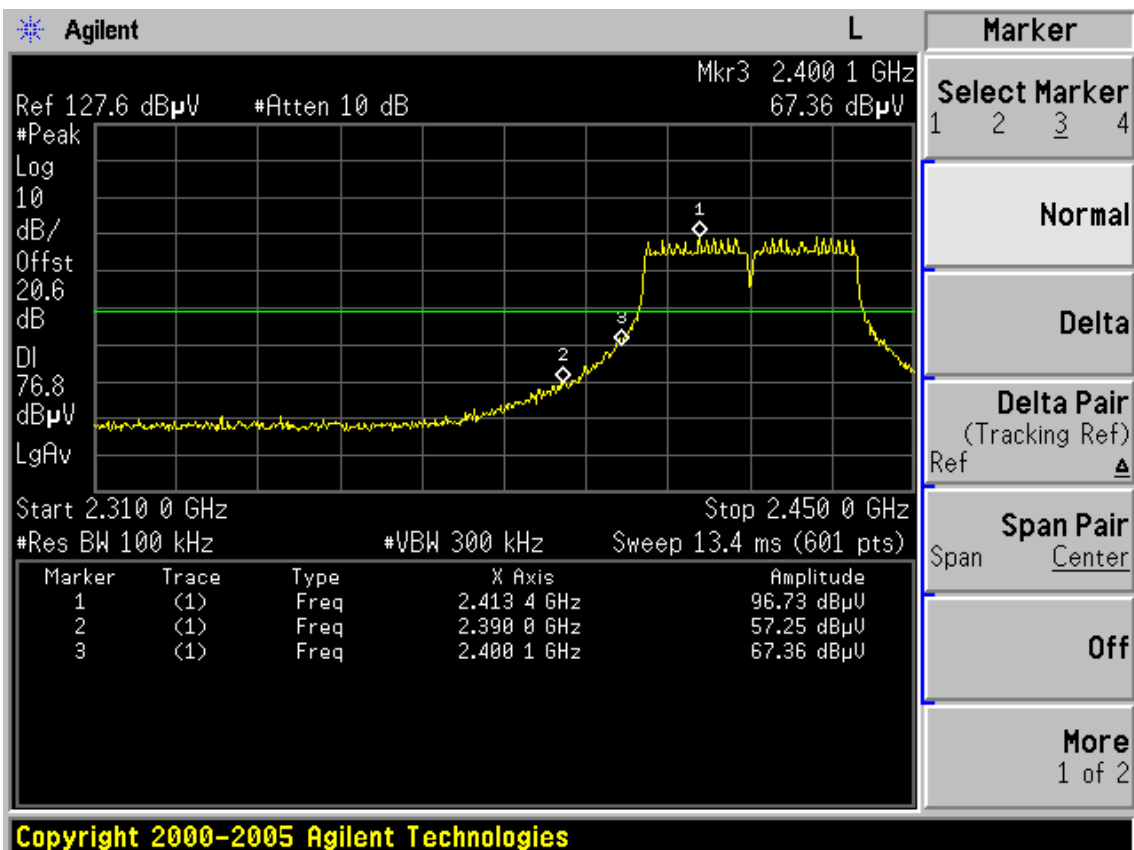
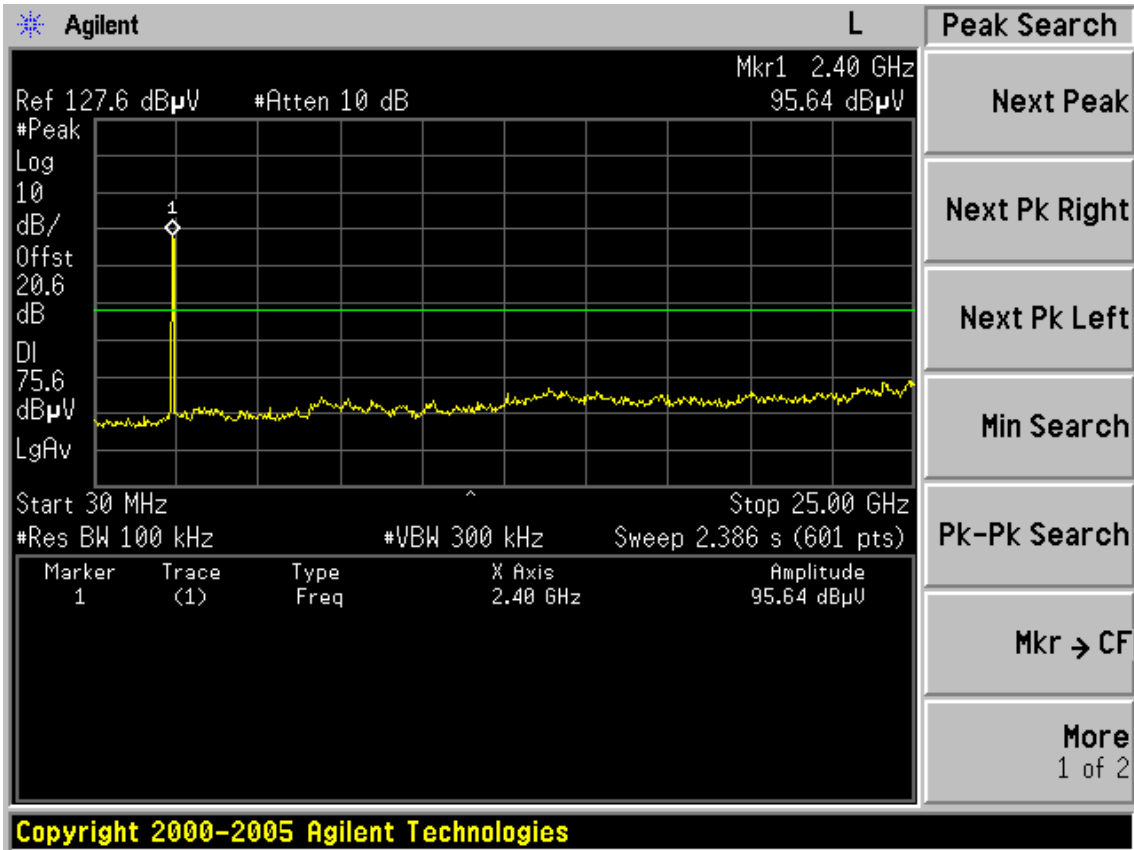
CH 6



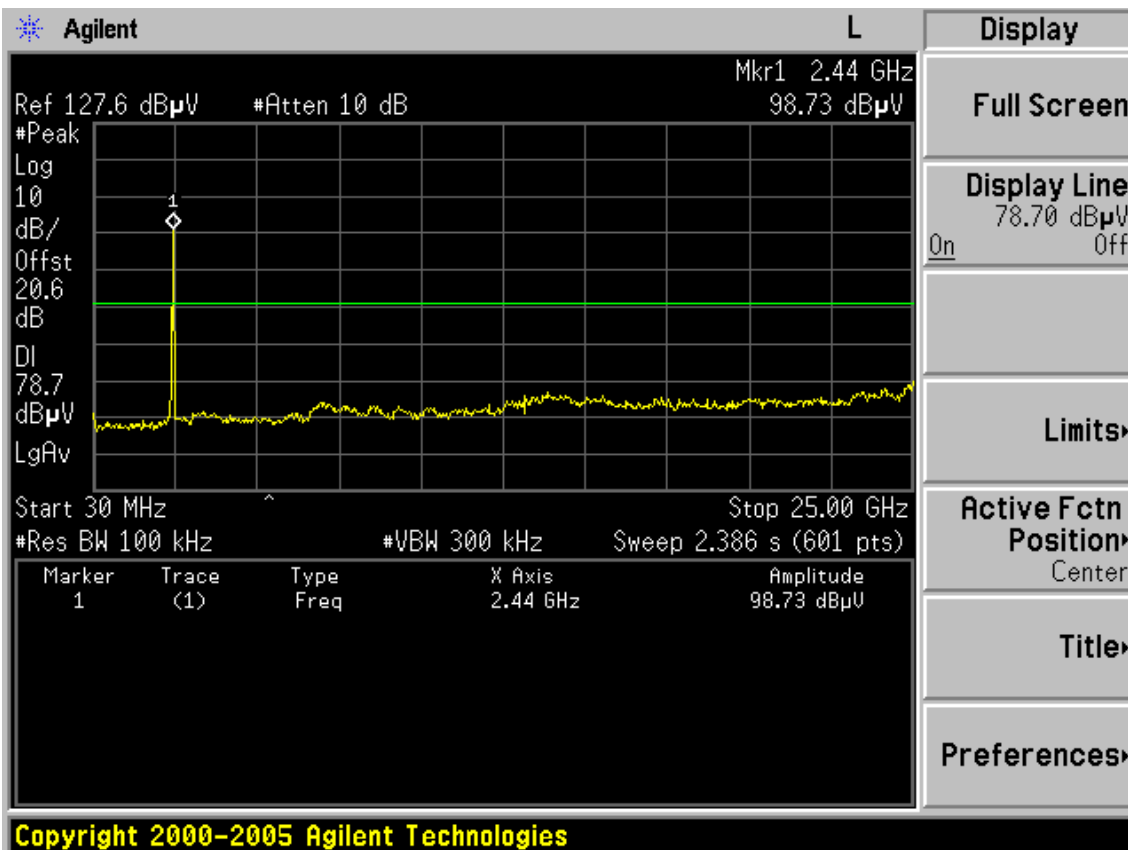
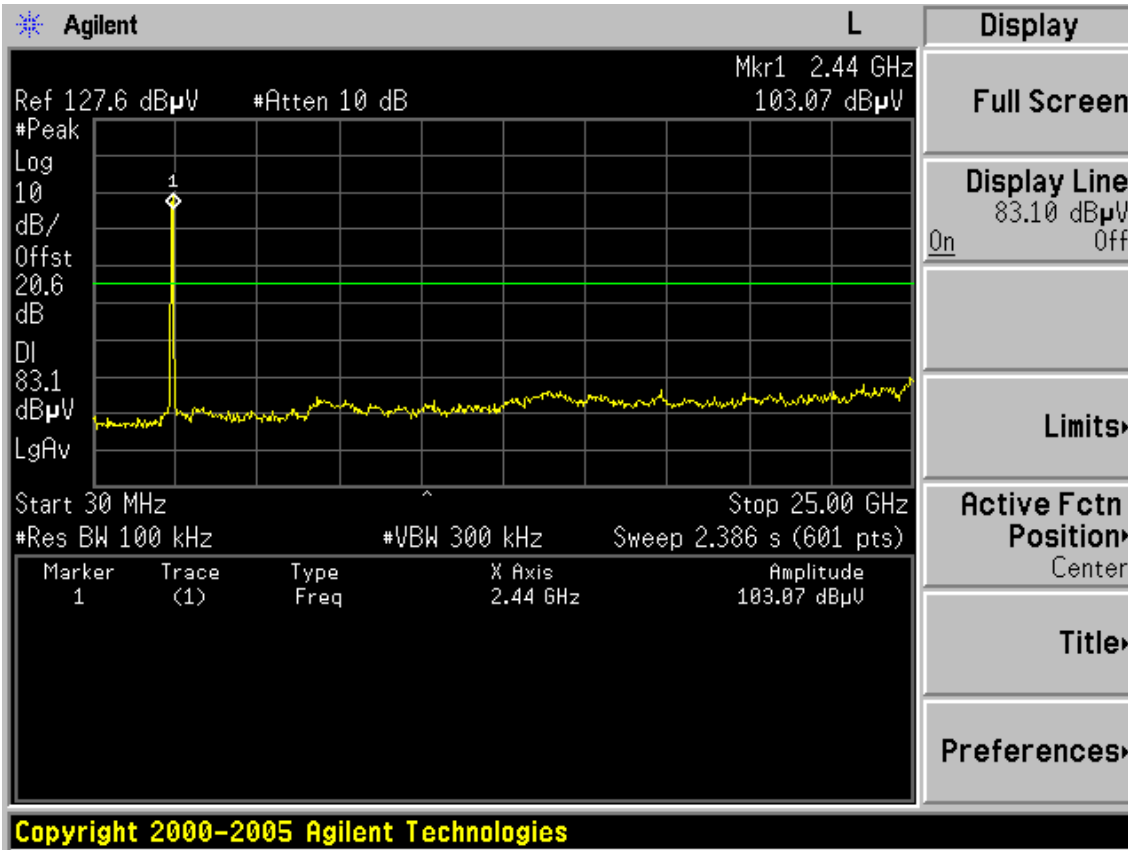
CH 11



Test Mode: IEEE 802.11n HT40  
CH 1

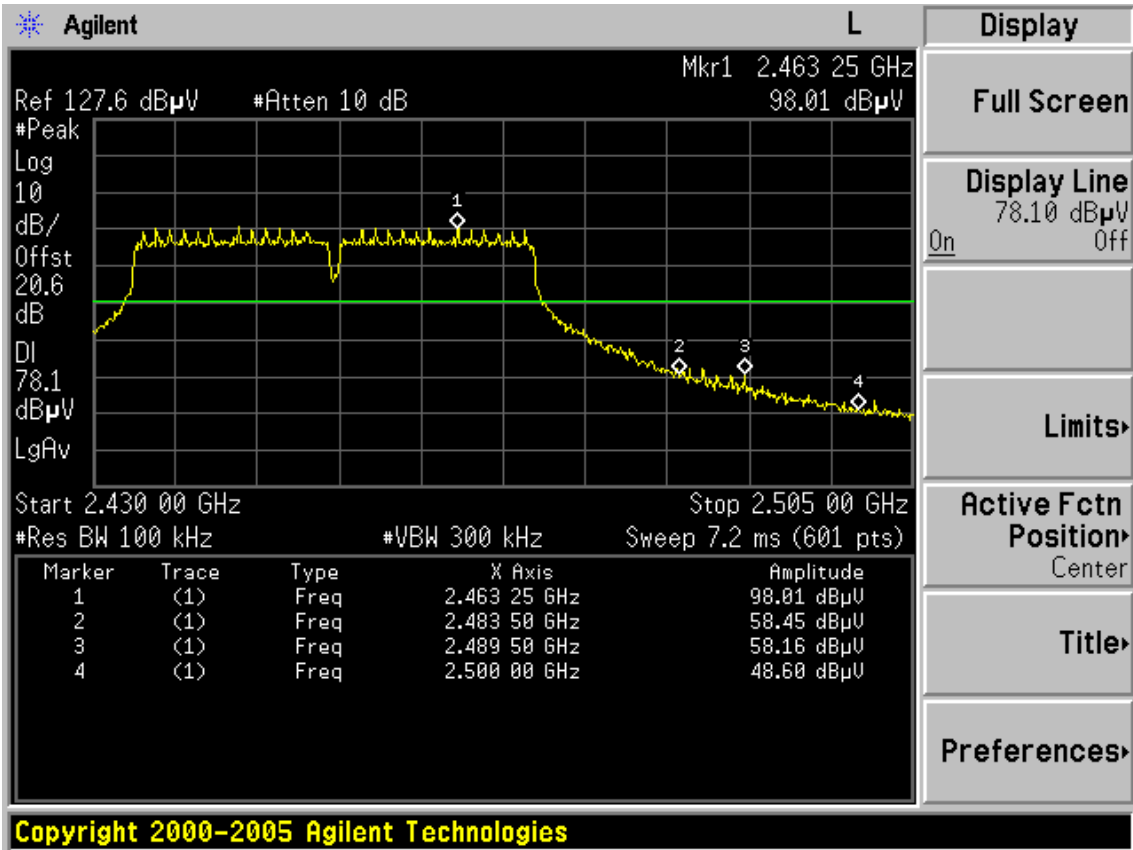


CH 4





CH 7



## 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, 10	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 09	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.08, 10	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX 102	28620/2	May.08, 10	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX 102	271471/4	May.08, 10	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX 102	29086/2	May.08, 10	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=1MHz; VBW=3MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

### 6.4. Test Results

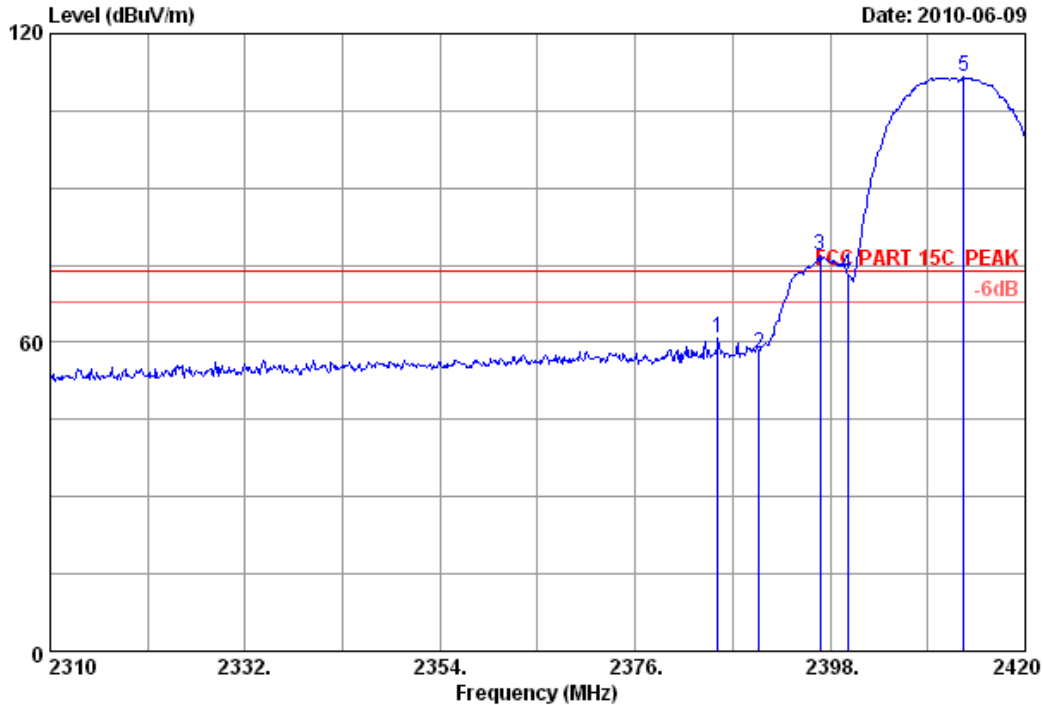
Pass (The testing data was attached in the next pages.)

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



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Data: 73 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 73  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant. 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	2385.350	29.43	8.67	36.00	58.88	60.98	74.00	13.02	Peak
2	2390.000	29.44	8.67	36.09	55.96	57.98	74.00	16.02	Peak
3	2396.900	29.44	8.72	36.09	74.65	76.72	74.00	-2.72	Peak
4	2400.000	29.44	8.72	36.09	71.14	73.21	74.00	0.79	Peak
5	2413.070	29.45	8.72	35.95	109.29	111.51	74.00	-37.51	Peak

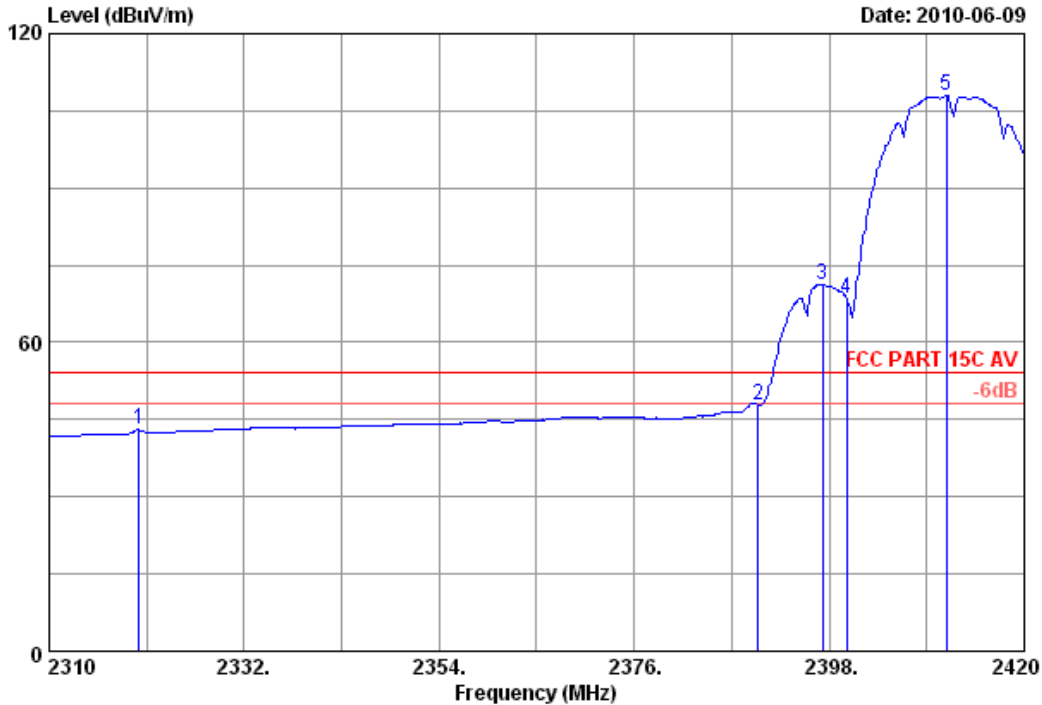
Remarks:

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



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Data: 74 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 74  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	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	2320.120	29.40	8.52	36.06	41.12	42.98	54.00	11.02	Average
2	2390.000	29.44	8.67	36.09	45.81	47.83	54.00	6.17	Average
3	2397.230	29.44	8.72	36.09	69.23	71.30	54.00	-17.30	Average
4	2400.000	29.44	8.72	36.09	66.44	68.51	54.00	-14.51	Average
5	2411.200	29.45	8.72	35.95	105.71	107.93	54.00	-53.93	Average

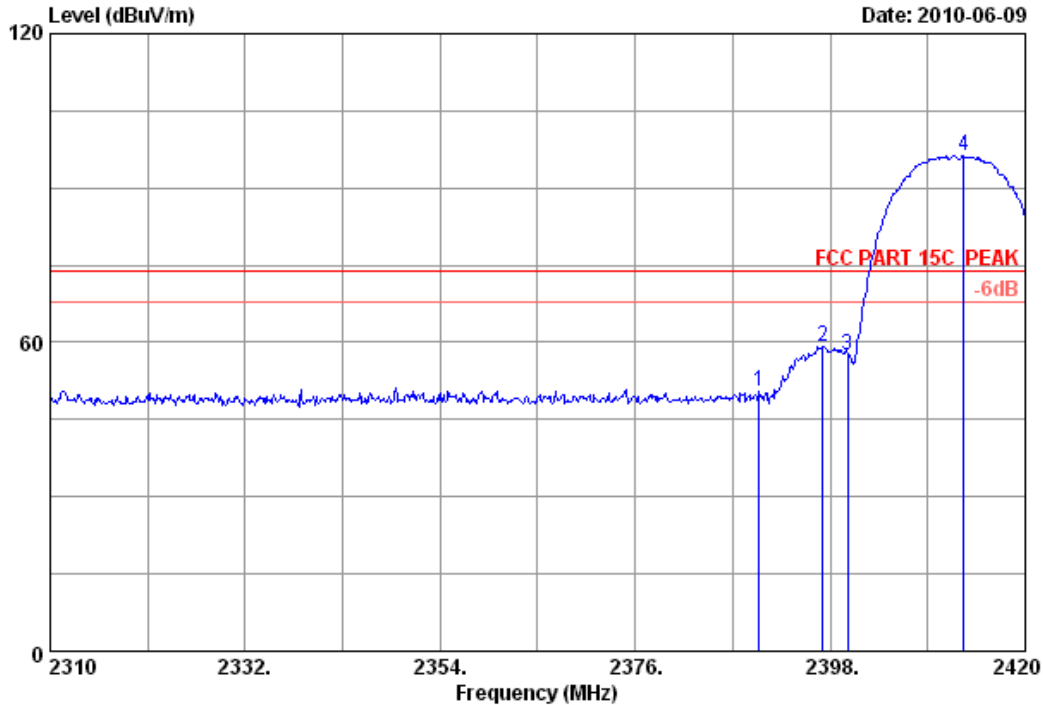
Remarks:

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



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Data: 75 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 75  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2390.000	29.44	8.67	36.09	48.50	50.52	74.00	23.48	Peak
2	2397.120	29.44	8.72	36.09	57.25	59.32	74.00	14.68	Peak
3	2400.000	29.44	8.72	36.09	55.42	57.49	74.00	16.51	Peak
4	2413.070	29.45	8.72	35.95	93.99	96.21	74.00	-22.21	Peak

Remarks:

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

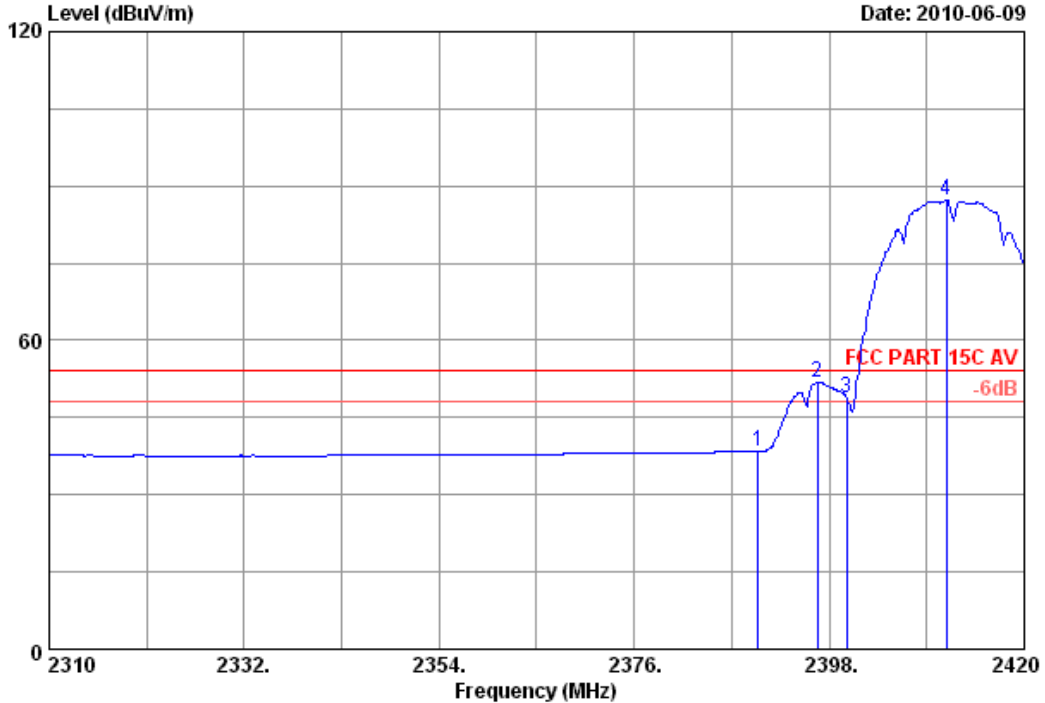


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Data: 76

File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 76  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2390.000	29.44	8.67	36.09	36.39	38.41	54.00	15.59	Average	
2 2396.680	29.44	8.72	36.09	49.81	51.88	54.00	2.12	Average	
3 2400.000	29.44	8.72	36.09	46.78	48.85	54.00	5.15	Average	
4 2411.200	29.45	8.72	35.95	85.03	87.25	54.00	-33.25	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.

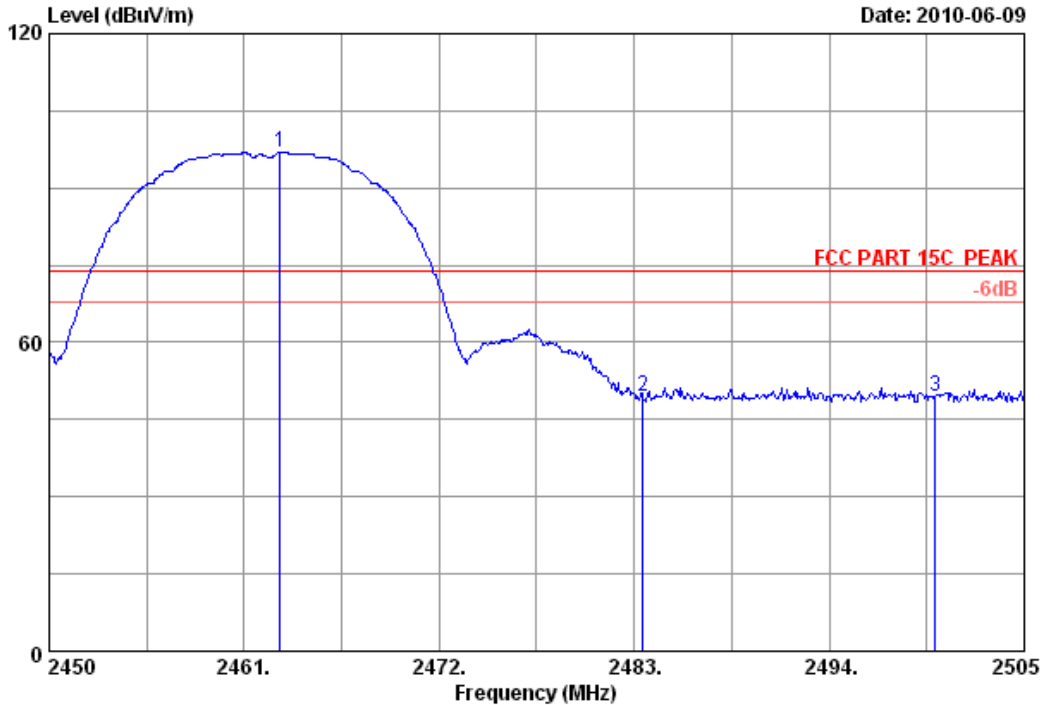


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Data: 77

File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 77  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)		
1 2463.035	29.48	8.82	36.02	94.69	96.97	74.00	-22.97	Peak	
2 2483.500	29.49	8.87	35.97	47.06	49.45	74.00	24.55	Peak	
3 2500.000	29.50	8.92	36.00	47.14	49.56	74.00	24.44	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.

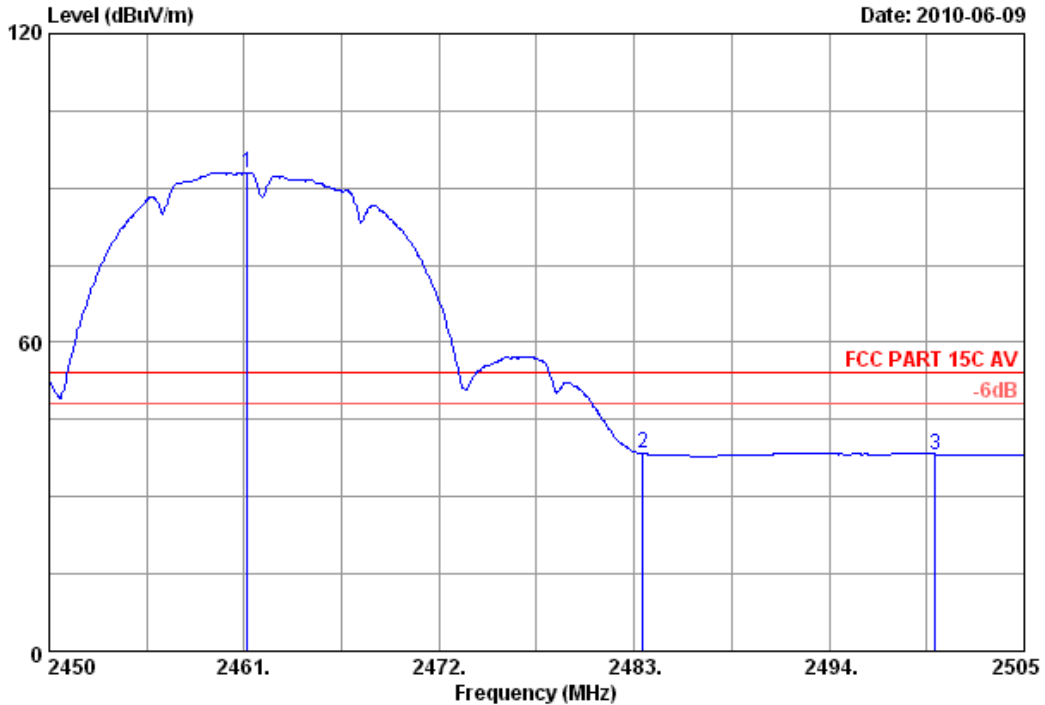


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Data: 78

File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 78  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2461.165	29.48	8.82	36.02	90.79	93.07	54.00	-39.07	Average	
2 2483.500	29.49	8.87	35.97	35.96	38.35	54.00	15.65	Average	
3 2500.000	29.50	8.92	36.00	35.85	38.27	54.00	15.73	Average	

Remarks:

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



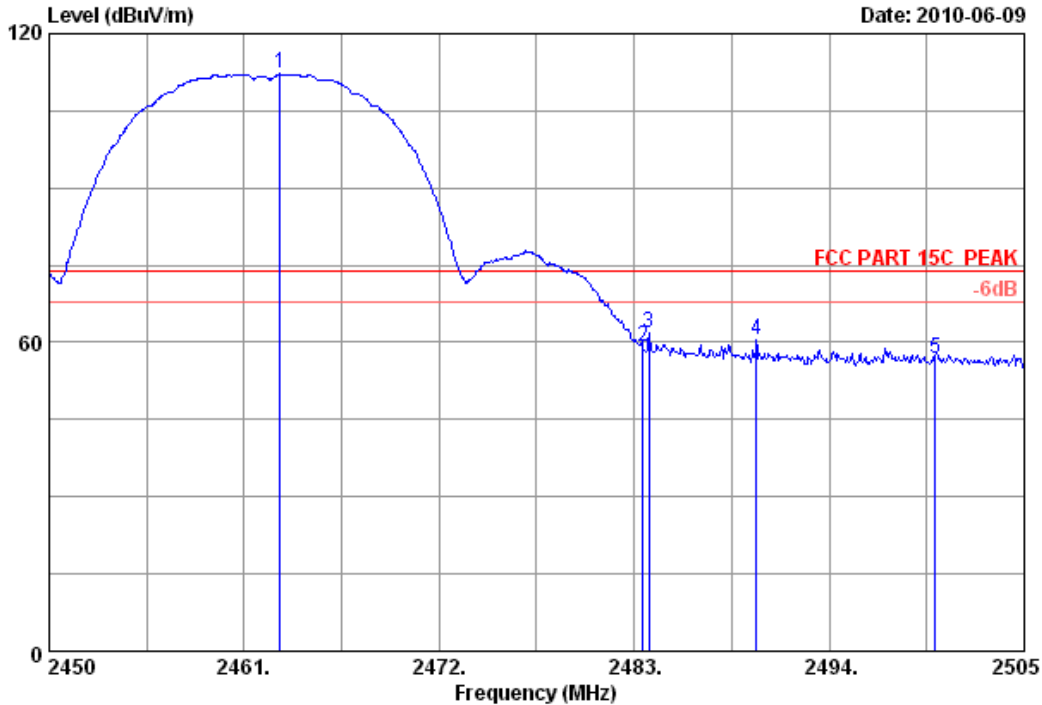


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Data: 79

File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 79  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	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	2463.035	29.48	8.82	36.02	109.90	112.18	74.00	-38.18	Peak
2	2483.500	29.49	8.87	35.97	56.89	59.28	74.00	14.72	Peak
3	2483.825	29.49	8.87	35.97	59.57	61.96	74.00	12.04	Peak
4	2489.875	29.50	8.87	36.00	58.29	60.66	74.00	13.34	Peak
5	2500.000	29.50	8.92	36.00	54.49	56.91	74.00	17.09	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.

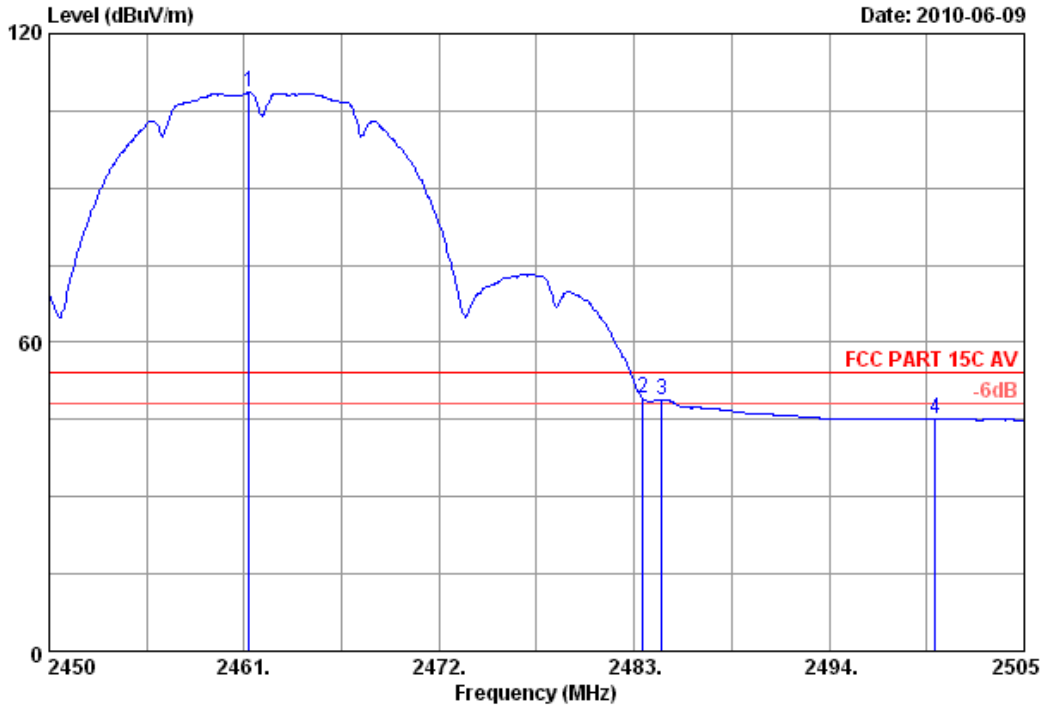


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Data: 80

File: E:\2010 report data\T\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 80  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11b CH11 2462MHz Tx  
 M/N : TL-MR3220

	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	2461.275	29.48	8.82	36.02	106.23	108.51	54.00	-54.51	Average
2	2483.500	29.49	8.87	35.97	46.70	49.09	54.00	4.91	Average
3	2484.540	29.49	8.87	35.97	46.53	48.92	54.00	5.08	Average
4	2500.000	29.50	8.92	36.00	42.78	45.20	54.00	8.80	Average

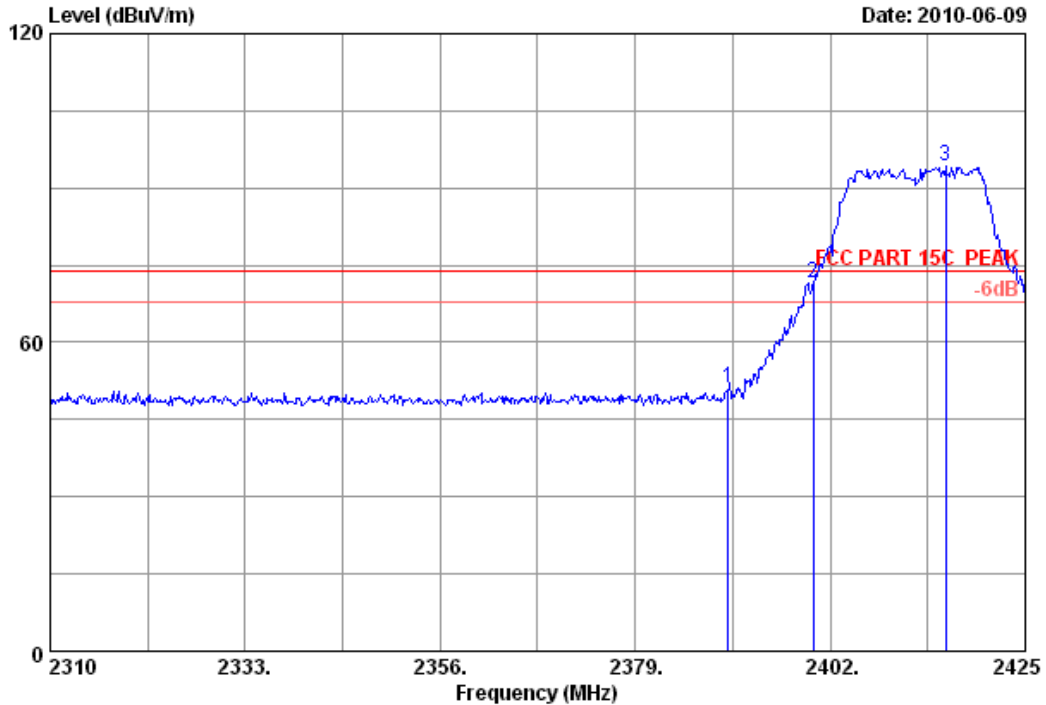
Remarks:

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



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Data: 81 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 81  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	Freq. (MHz)	Ant. Cable Amp.			Emission				
		Factor (dB/m)	loss (dB)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	29.44	8.67	36.09	49.20	51.22	74.00	22.78	Peak
2	2400.000	29.44	8.72	36.09	69.33	71.40	74.00	2.60	Peak
3	2415.570	29.45	8.72	35.95	92.02	94.24	74.00	-20.24	Peak

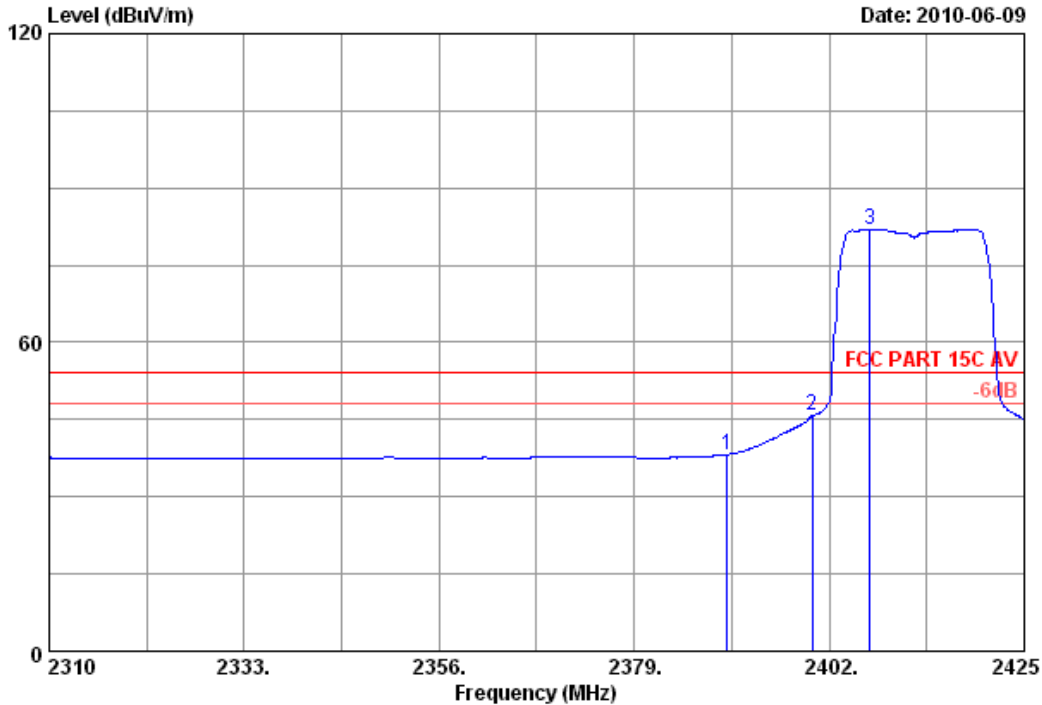
Remarks:

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



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Data: 82 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 82  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	29.44	8.67	36.09	36.19	38.21	54.00	15.79	Average	
2	29.44	8.72	36.09	43.82	45.89	54.00	8.11	Average	
3	29.45	8.72	35.95	79.74	81.96	54.00	-27.96	Average	

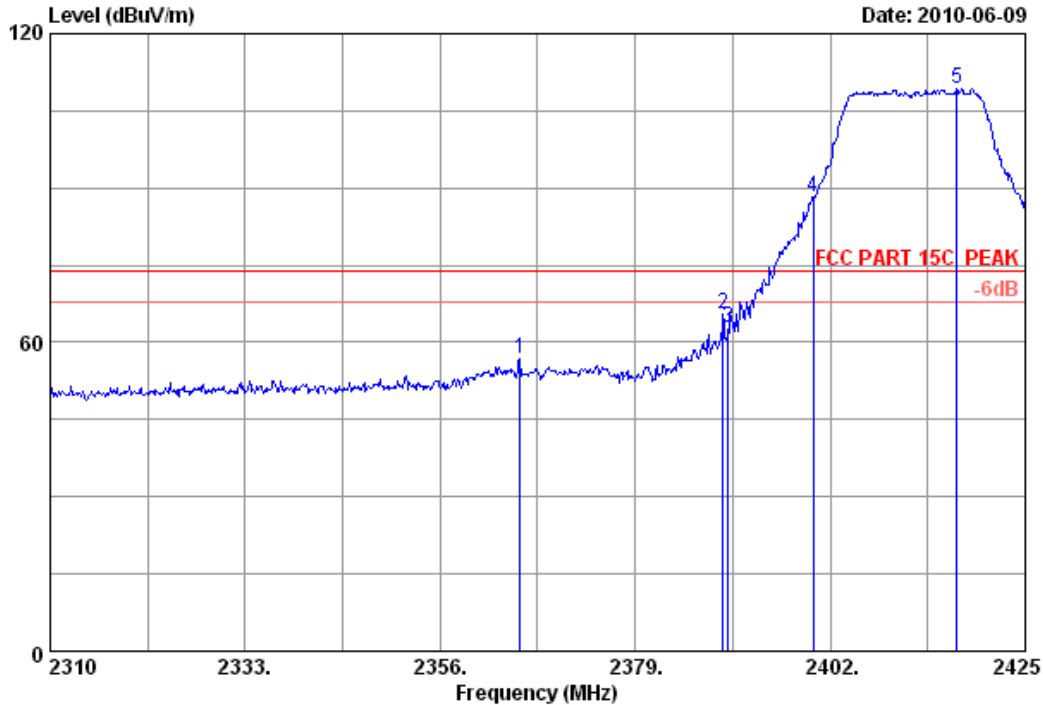
Remarks:

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



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Data: 83 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 83  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	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	2365.430	29.42	8.62	35.91	54.70	56.83	74.00	17.17	Peak
2	2389.350	29.44	8.67	36.09	63.58	65.60	74.00	8.40	Peak
3	2390.000	29.44	8.67	36.09	60.95	62.97	74.00	11.03	Peak
4	2400.000	29.44	8.72	36.09	86.27	88.34	74.00	-14.34	Peak
5	2416.950	29.45	8.72	35.95	107.24	109.46	74.00	-35.46	Peak

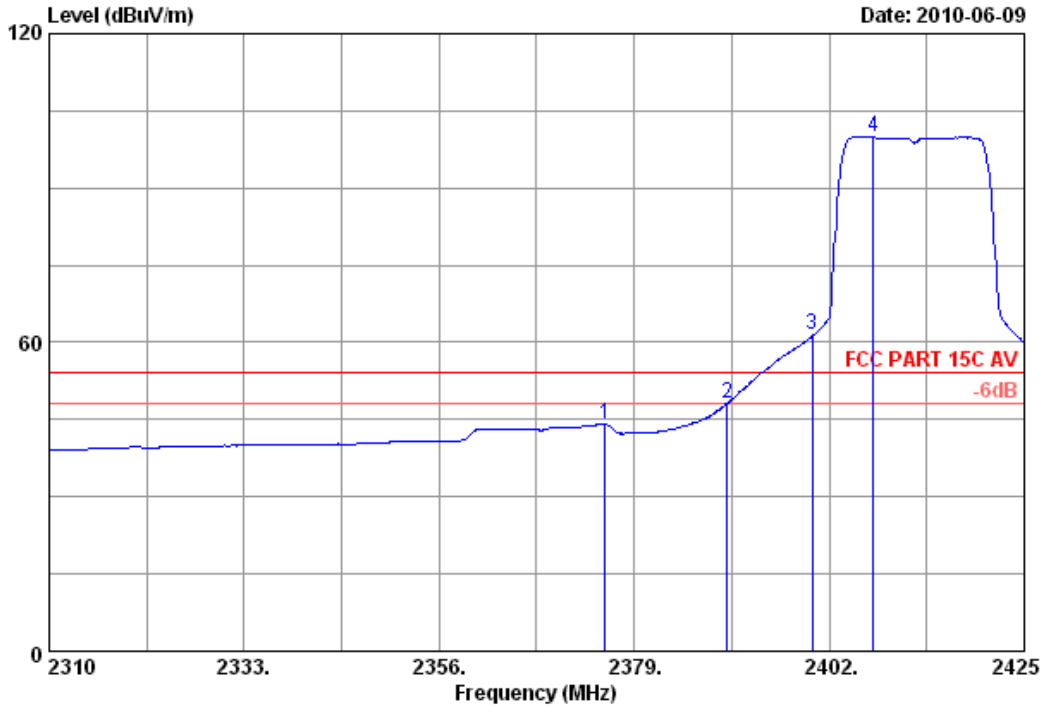
Remarks:

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



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Site no. : 3m Chamber Data no. : 84  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2375.550	29.43	8.67	36.00	41.95	44.05	54.00	9.95	Average
2	2390.000	29.44	8.67	36.09	46.22	48.24	54.00	5.76	Average
3	2400.000	29.44	8.72	36.09	59.28	61.35	54.00	-7.35	Average
4	2407.175	29.45	8.72	35.95	97.64	99.86	54.00	-45.86	Average

Remarks:

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

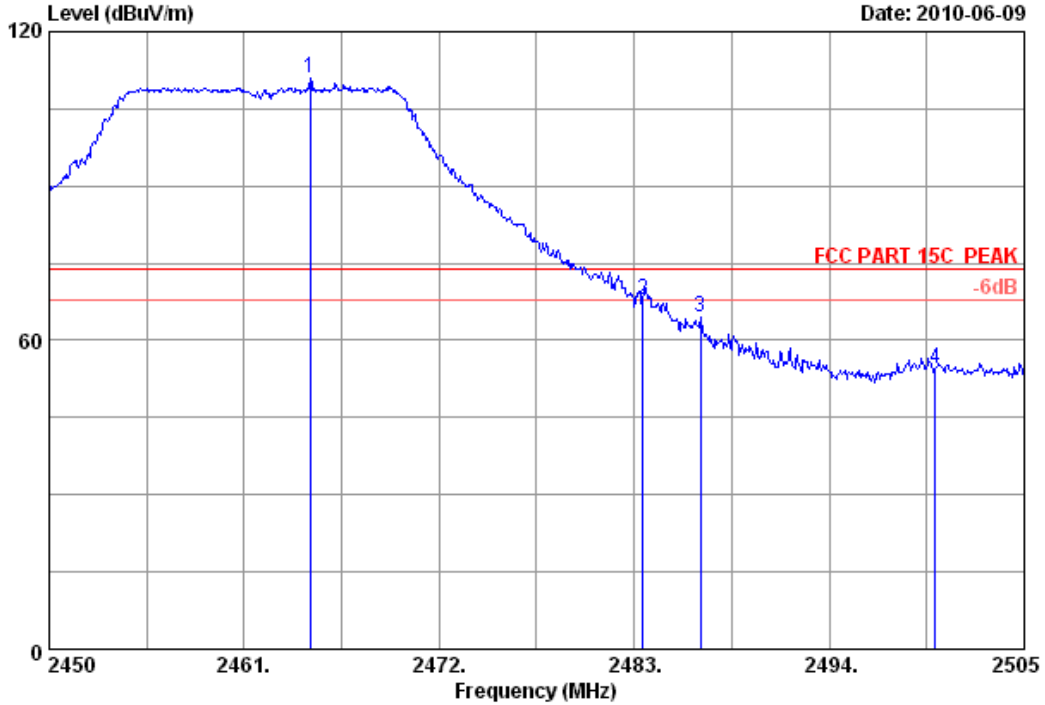


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Data: 85

File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 85  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2464.740	29.48	8.82	36.02	108.62	110.90	74.00	-36.90	Peak	
2 2483.500	29.49	8.87	35.97	65.44	67.83	74.00	6.17	Peak	
3 2486.740	29.49	8.87	35.97	62.19	64.58	74.00	9.42	Peak	
4 2500.000	29.50	8.92	36.00	52.02	54.44	74.00	19.56	Peak	

Remarks:

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

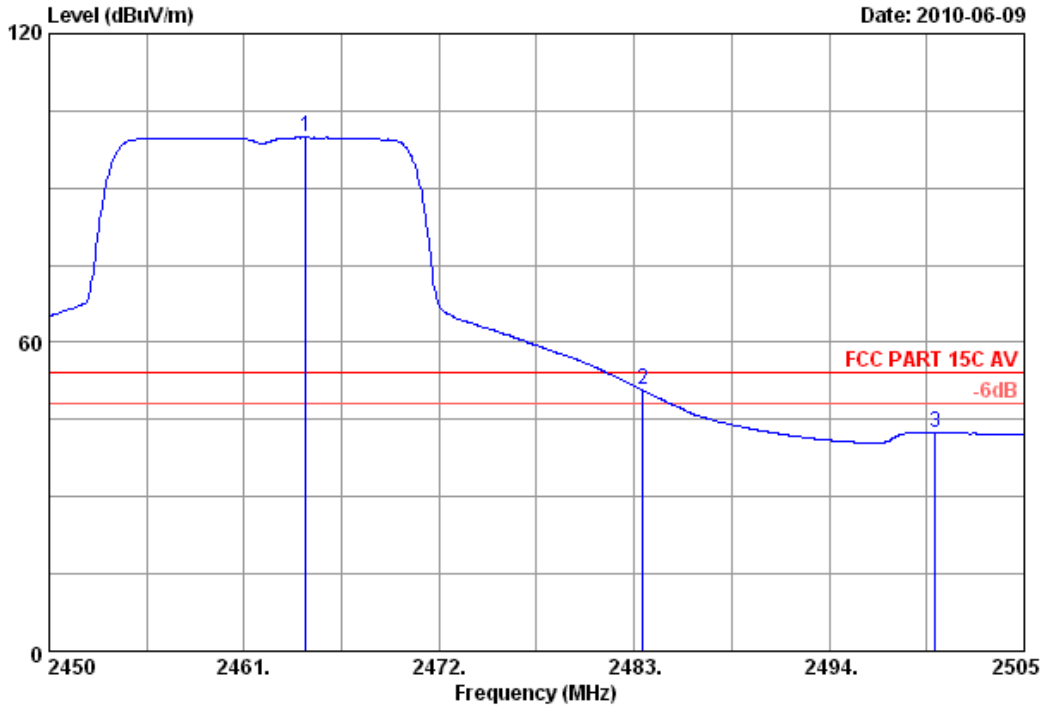


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Postcode:518057

Data: 86

File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 86  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2464.465	29.48	8.82	36.02	97.52	99.80	54.00	-45.80	Average	
2 2483.500	29.49	8.87	35.97	48.56	50.95	54.00	3.05	Average	
3 2500.000	29.50	8.92	36.00	40.13	42.55	54.00	11.45	Average	

Remarks:

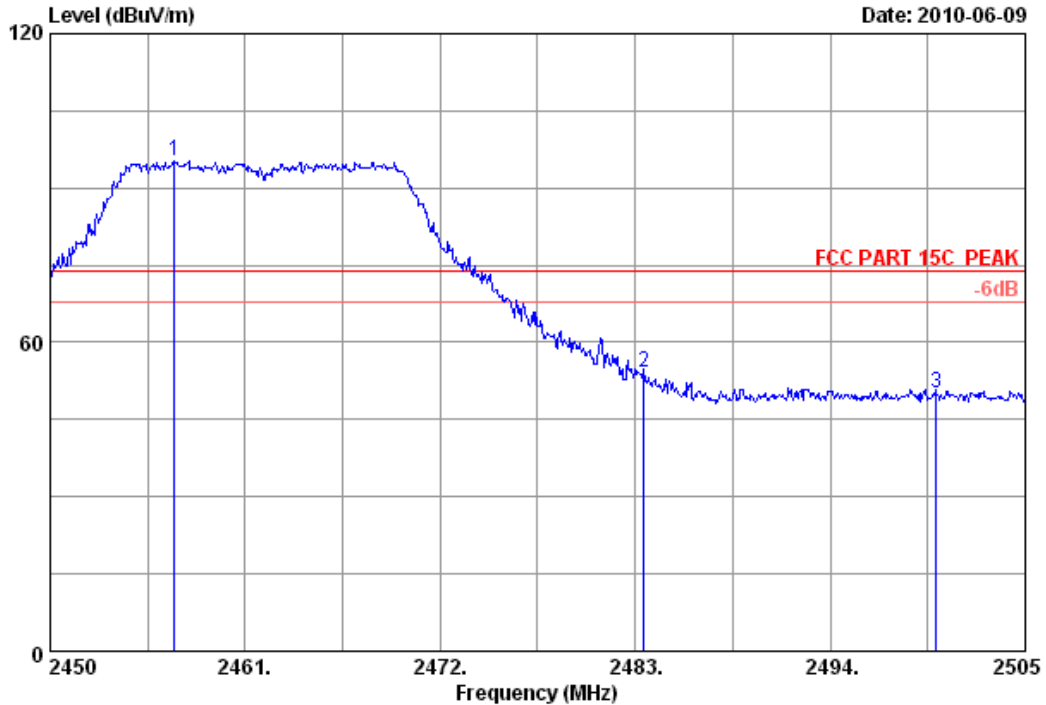
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Site no. : 3m Chamber Data no. : 87  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2456.985	29.48	8.82	36.02	93.00	95.28	74.00	-21.28	Peak	
2 2483.500	29.49	8.87	35.97	51.61	54.00	74.00	20.00	Peak	
3 2500.000	29.50	8.92	36.00	47.88	50.30	74.00	23.70	Peak	

Remarks:

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

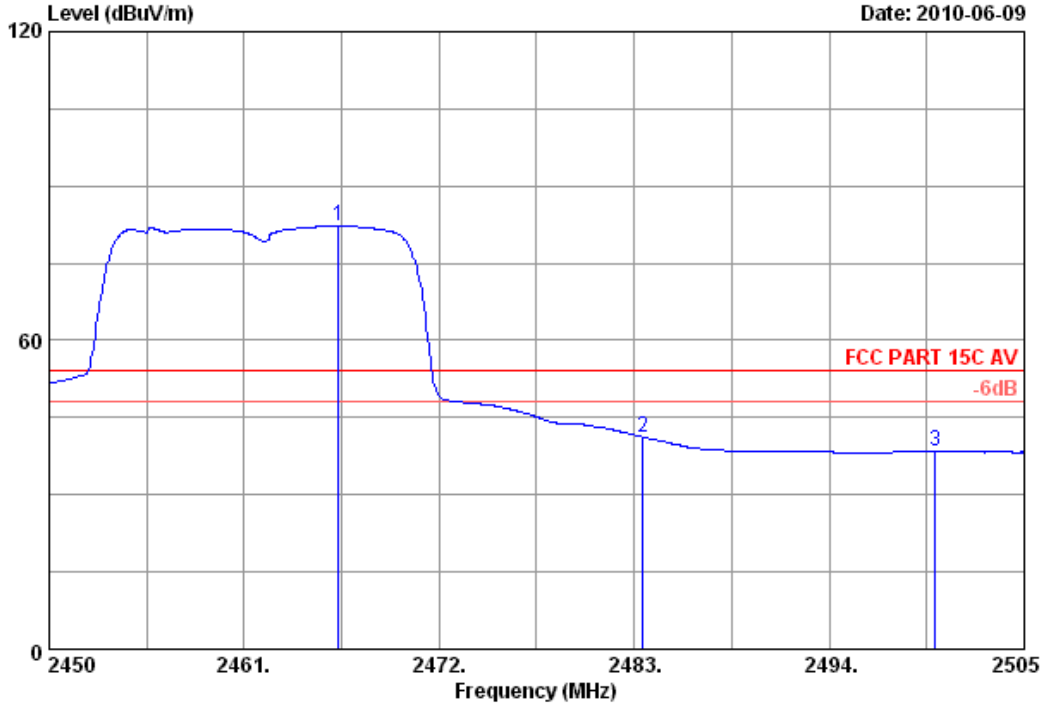


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Data: 88

File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)

Date: 2010-06-09



Site no. : 3m Chamber Data no. : 88  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11g CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2466.335	29.48	8.82	36.02	79.92	82.20	54.00	-28.20	Average	
2 2483.500	29.49	8.87	35.97	38.79	41.18	54.00	12.82	Average	
3 2500.000	29.50	8.92	36.00	36.01	38.43	54.00	15.57	Average	

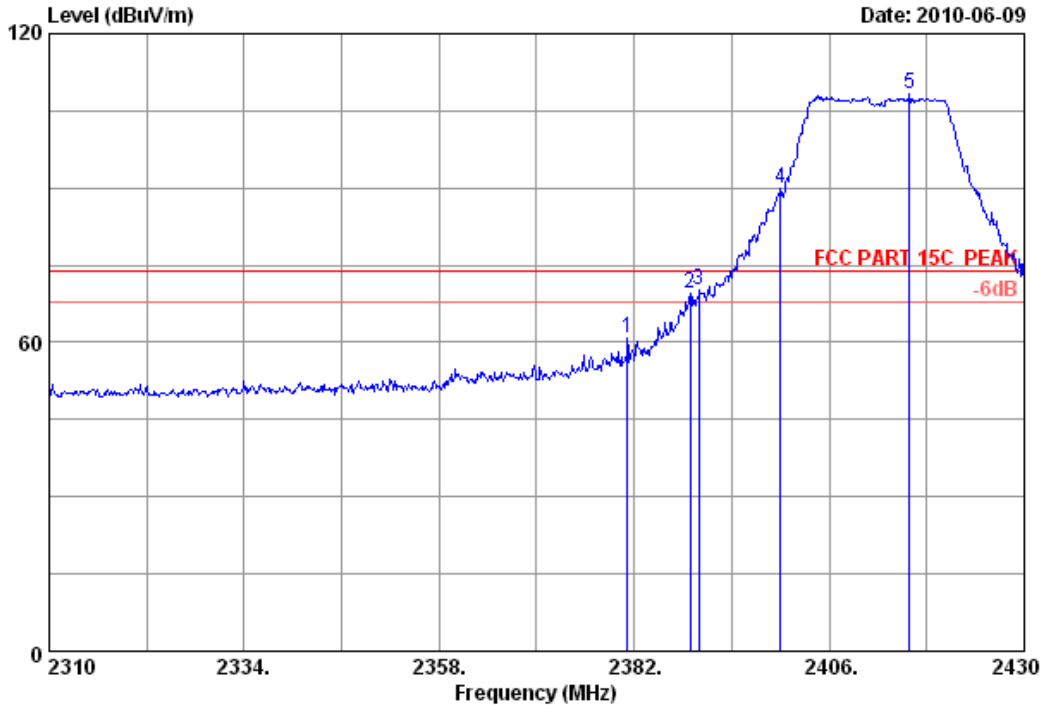
Remarks:

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



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Site no. : 3m Chamber Data no. : 89  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	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	2381.160	29.43	8.67	36.00	58.89	60.99	74.00	13.01	Peak
2	2388.840	29.44	8.67	36.09	67.48	69.50	74.00	4.50	Peak
3	2390.000	29.44	8.67	36.09	68.02	70.04	74.00	3.96	Peak
4	2400.000	29.44	8.72	36.09	87.80	89.87	74.00	-15.87	Peak
5	2415.840	29.45	8.72	35.95	105.96	108.18	74.00	-34.18	Peak

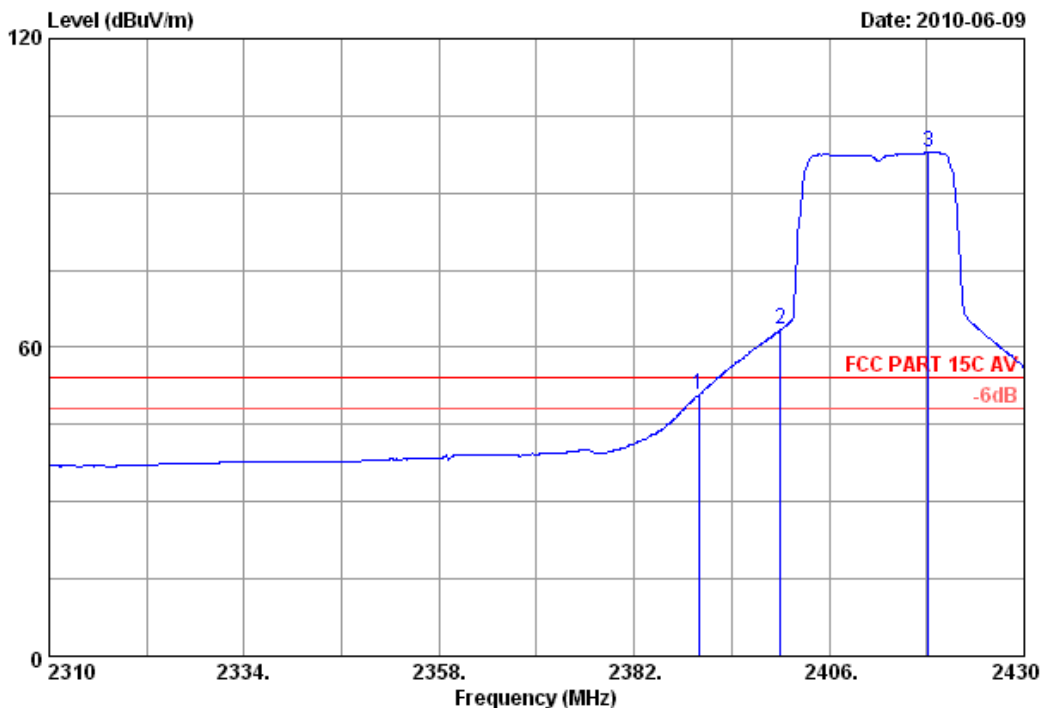
Remarks:

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



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Site no. : 3m Chamber Data no. : 90  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2390.000	29.44	8.67	36.09	48.74	50.76	54.00	3.24	Average
2	2400.000	29.44	8.72	36.09	61.30	63.37	54.00	-9.37	Average
3	2418.240	29.45	8.72	35.95	95.64	97.86	54.00	-43.86	Average

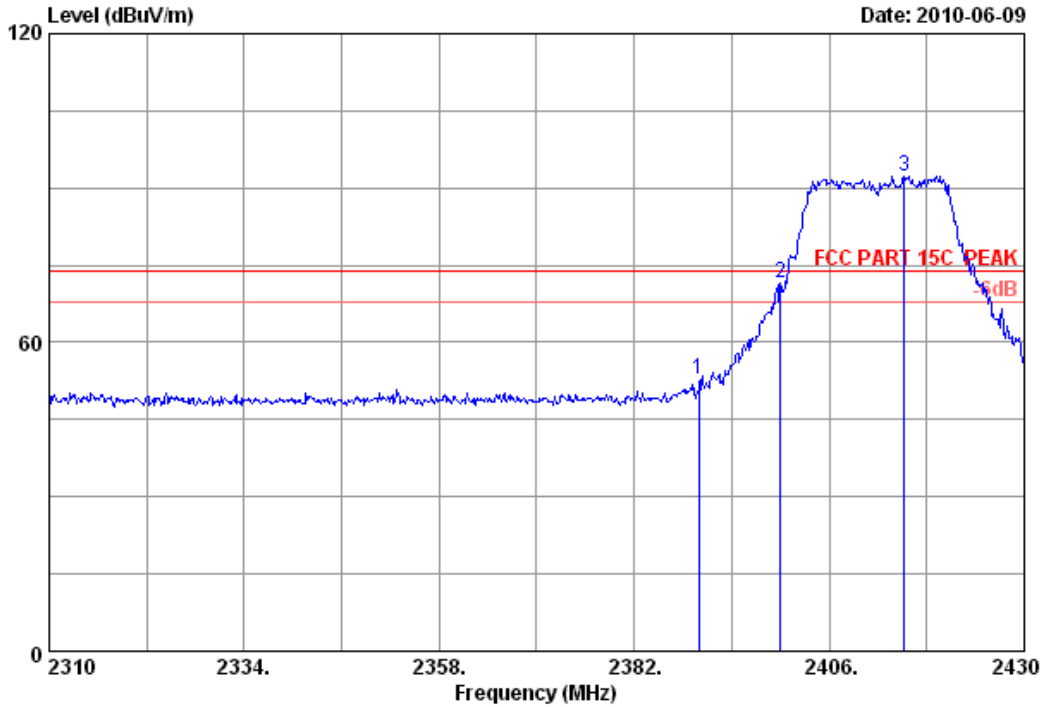
Remarks:

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



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Site no. : 3m Chamber Data no. : 91  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2390.000	29.44	8.67	36.09	50.82	52.84	74.00	21.16	Peak
2	2400.000	29.44	8.72	36.09	69.37	71.44	74.00	2.56	Peak
3	2415.240	29.45	8.72	35.95	90.08	92.30	74.00	-18.30	Peak

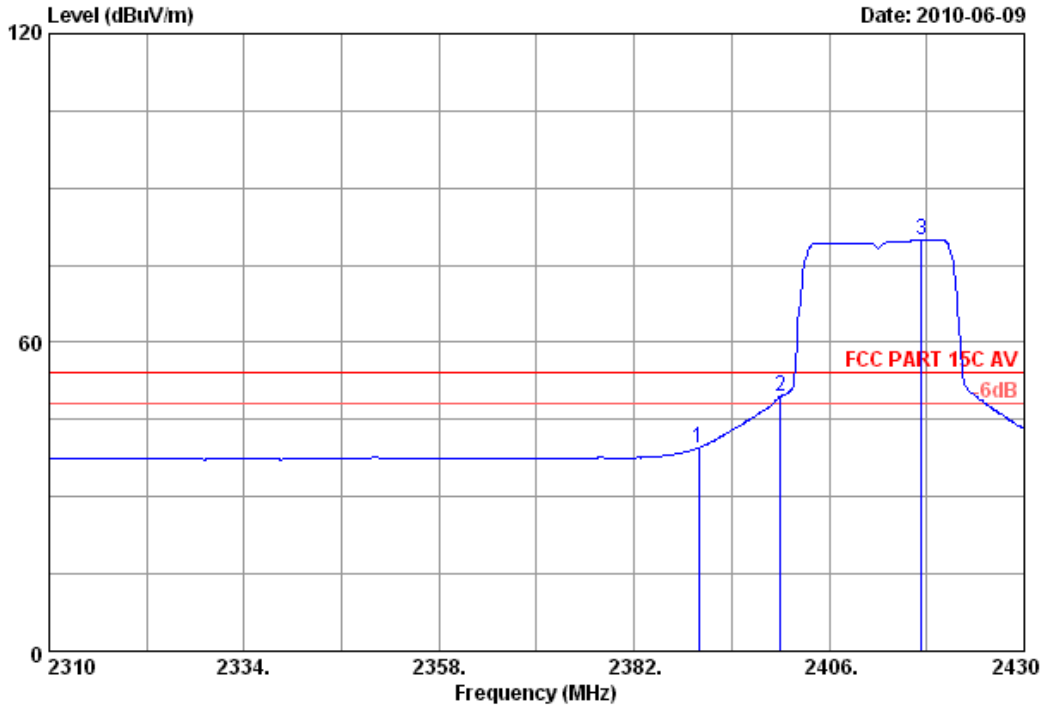
Remarks:

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



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Site no. : 3m Chamber Data no. : 92  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH1 2412MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission				
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1 2390.000	29.44	8.67	36.09	37.56	39.58	54.00	14.42	Average
2 2400.000	29.44	8.72	36.09	47.48	49.55	54.00	4.45	Average
3 2417.400	29.45	8.72	35.95	77.59	79.81	54.00	-25.81	Average

Remarks:

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

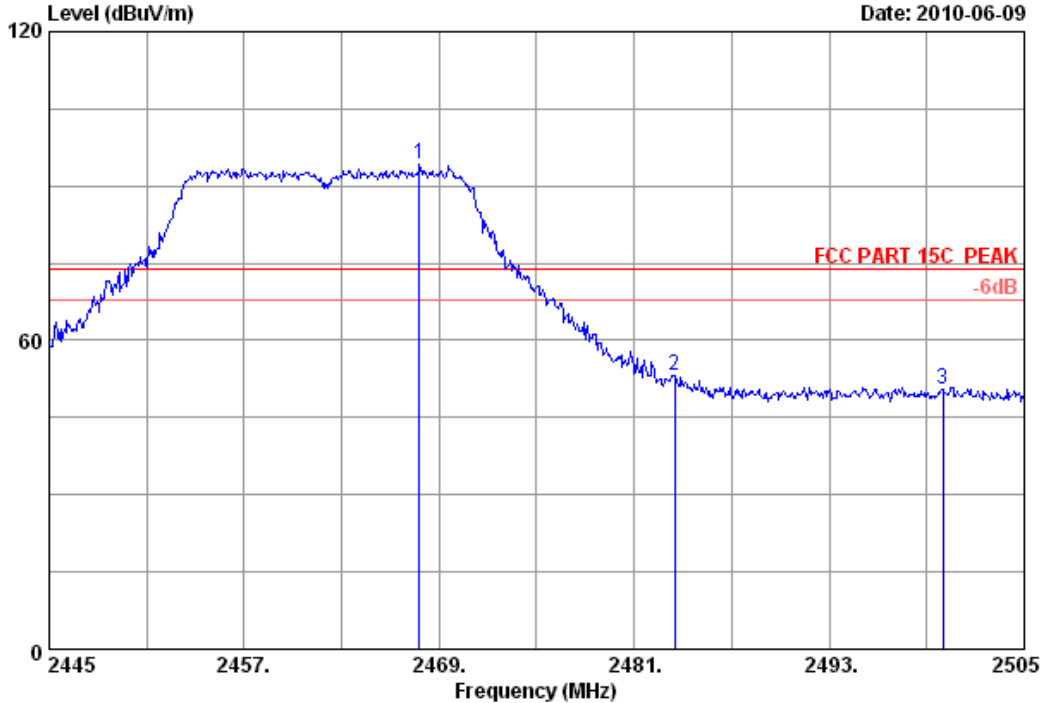


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Date: 2010-06-09



Site no. : 3m Chamber Data no. : 93  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	2467.800	29.48	8.82	36.02	91.89	94.17	74.00	-20.17	Peak
2	2483.500	29.49	8.87	35.97	50.75	53.14	74.00	20.86	Peak
3	2500.000	29.50	8.92	36.00	47.93	50.35	74.00	23.65	Peak

Remarks:

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

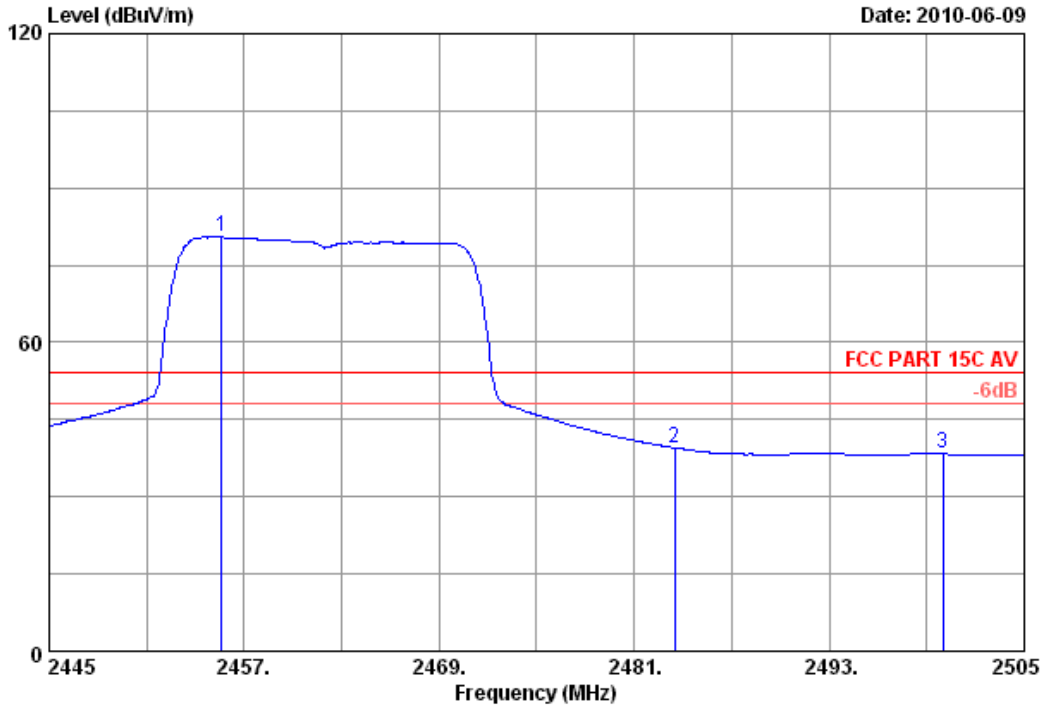


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Date: 2010-06-09



Site no. : 3m Chamber Data no. : 94  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2455.620	29.48	8.82	36.02	78.13	80.41	54.00	-26.41	Average	
2 2483.500	29.49	8.87	35.97	37.11	39.50	54.00	14.50	Average	
3 2500.000	29.50	8.92	36.00	35.86	38.28	54.00	15.72	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.



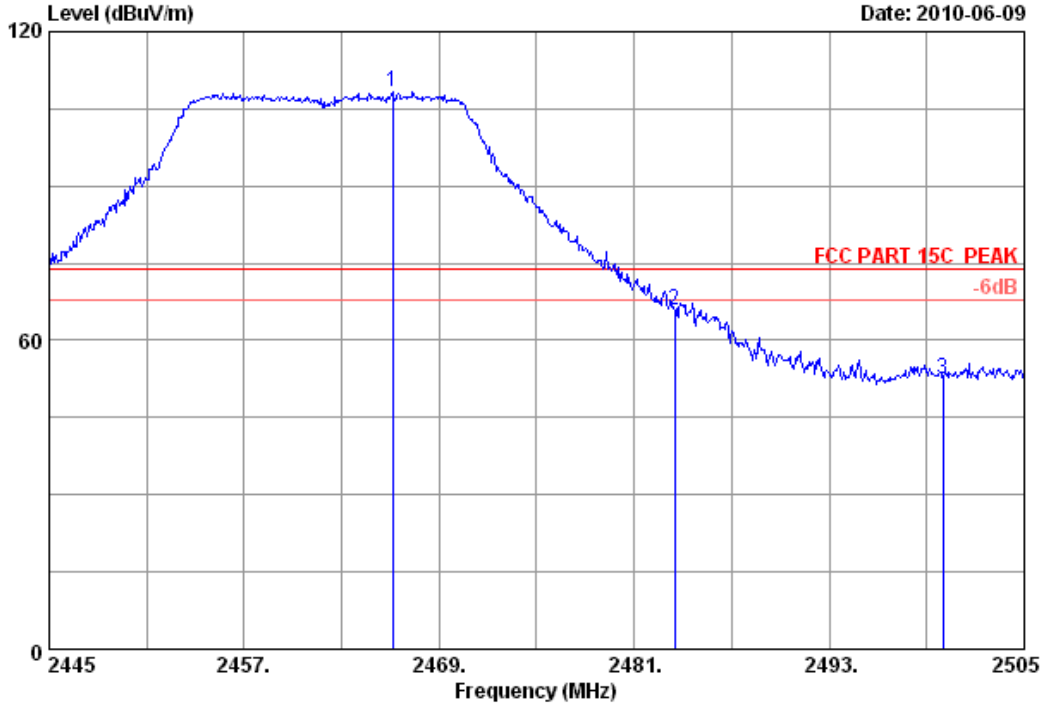


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Date: 2010-06-09



Site no. : 3m Chamber Data no. : 95  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2466.120	29.48	8.82	36.02	106.05	108.33	74.00	-34.33	Peak	
2 2483.500	29.49	8.87	35.97	63.52	65.91	74.00	8.09	Peak	
3 2500.000	29.50	8.92	36.00	50.22	52.64	74.00	21.36	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.

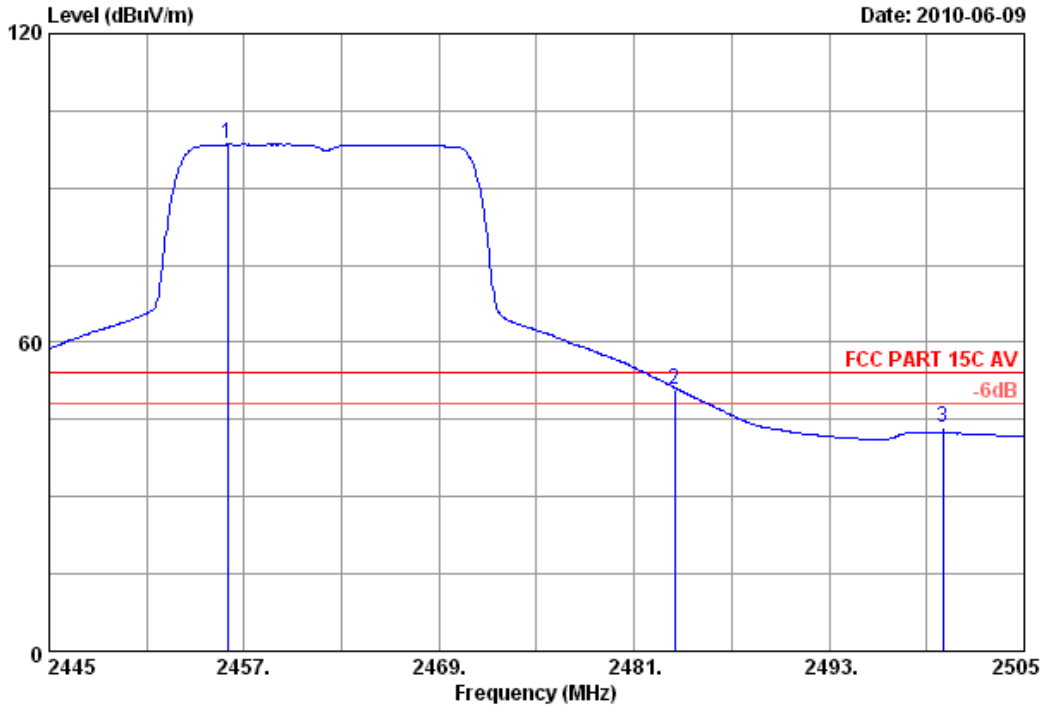


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Date: 2010-06-09



Site no. : 3m Chamber Data no. : 96  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT20 CH11 2462MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission				
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)	
1 2455.980	29.48	8.82	36.02	96.19	98.47	54.00	-44.47	Average
2 2483.500	29.49	8.87	35.97	48.55	50.94	54.00	3.06	Average
3 2500.000	29.50	8.92	36.00	41.01	43.43	54.00	10.57	Average

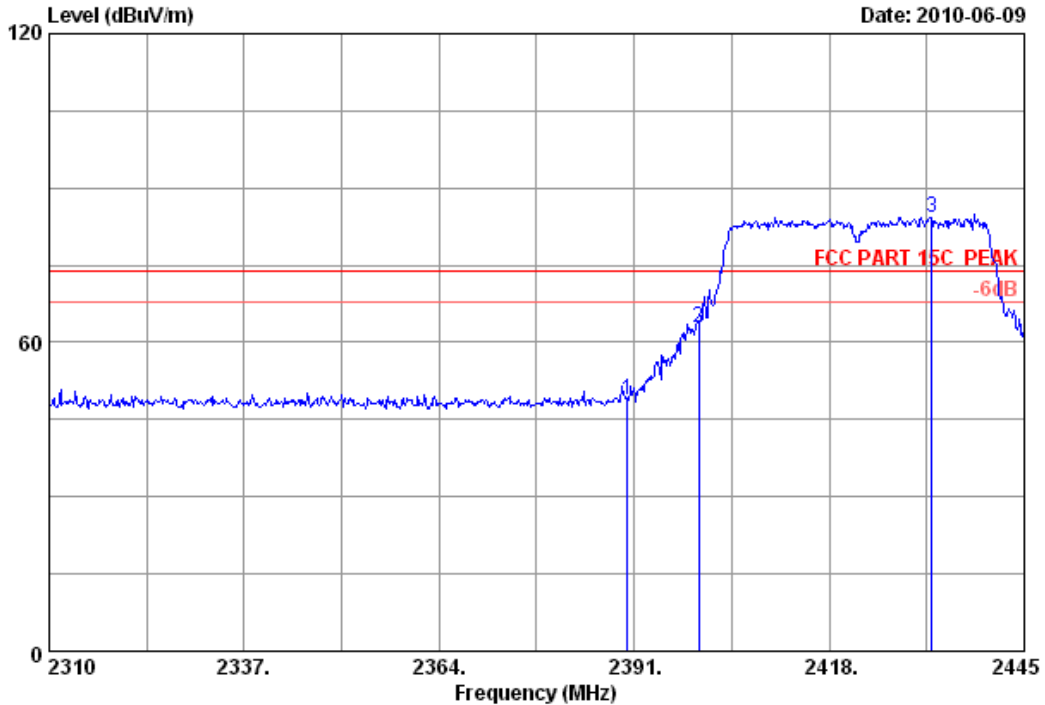
Remarks:

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



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Site no. : 3m Chamber Data no. : 97  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBUV)	(dBUV/m)	(dBUV/m)	(dB)		
1	2390.000	29.44	8.67	36.09	46.63	48.65	74.00	25.35	Peak
2	2400.000	29.44	8.72	36.09	60.87	62.94	74.00	11.06	Peak
3	2432.175	29.46	8.77	36.01	82.11	84.33	74.00	-10.33	Peak

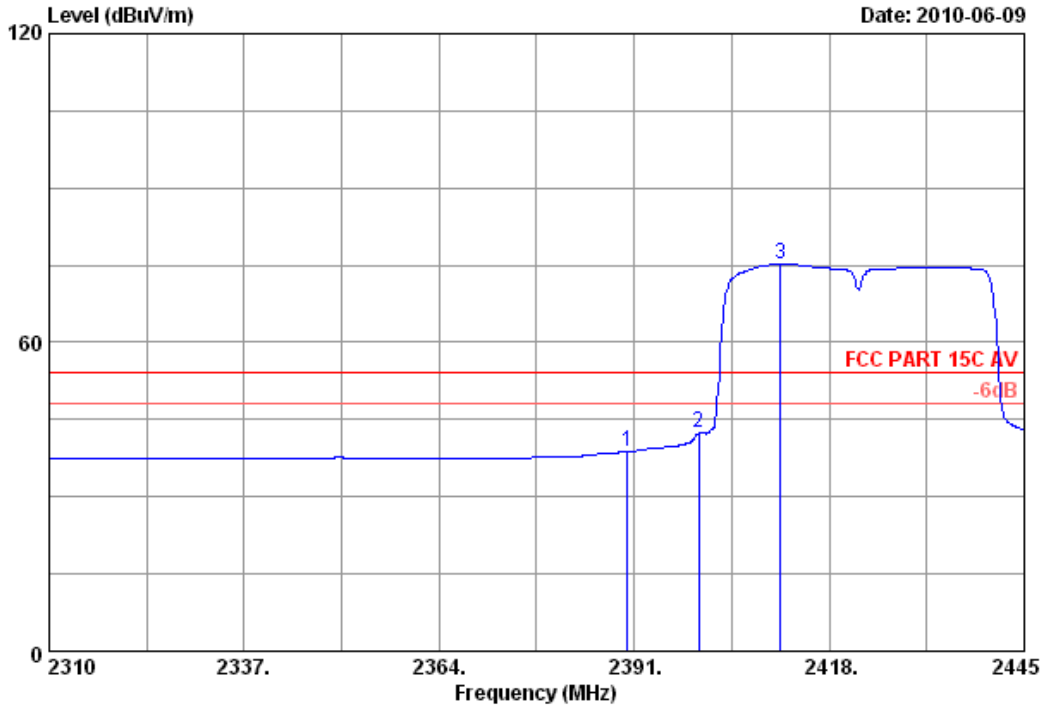
Remarks:

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



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Site no. : 3m Chamber Data no. : 98  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2390.000	29.44	8.67	36.09	36.78	38.80	54.00	15.20	Average	
2 2400.000	29.44	8.72	36.09	40.30	42.37	54.00	11.63	Average	
3 2411.250	29.45	8.72	35.95	73.03	75.25	54.00	-21.25	Average	

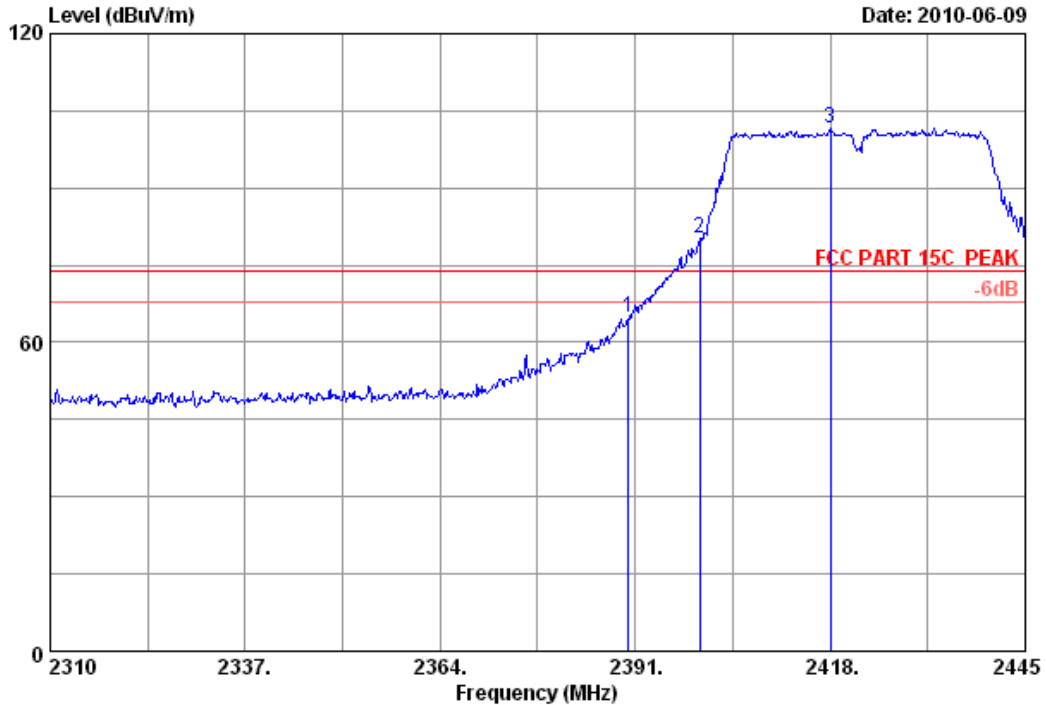
Remarks:

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



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Site no. : 3m Chamber Data no. : 99  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2390.000	29.44	8.67	36.09	62.77	64.79	74.00	9.21	Peak	
2 2400.000	29.44	8.72	36.09	78.30	80.37	74.00	-6.37	Peak	
3 2418.000	29.45	8.72	35.95	99.26	101.48	74.00	-27.48	Peak	

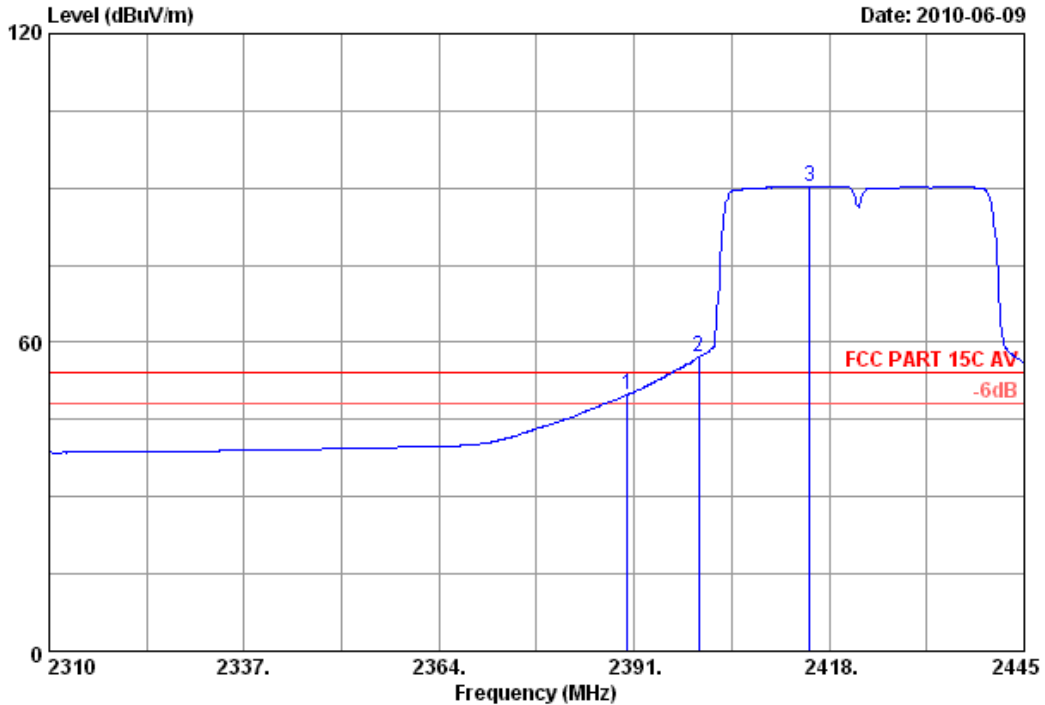
Remarks:

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



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Fax:+86-755-26632877  
Postcode:518057

Data: 100 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 100  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH1 2422MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	29.44	8.67	36.09	47.83	49.85	54.00	4.15	Average	
2	29.44	8.72	36.09	55.12	57.19	54.00	-3.19	Average	
3	29.45	8.72	35.95	88.19	90.41	54.00	-36.41	Average	

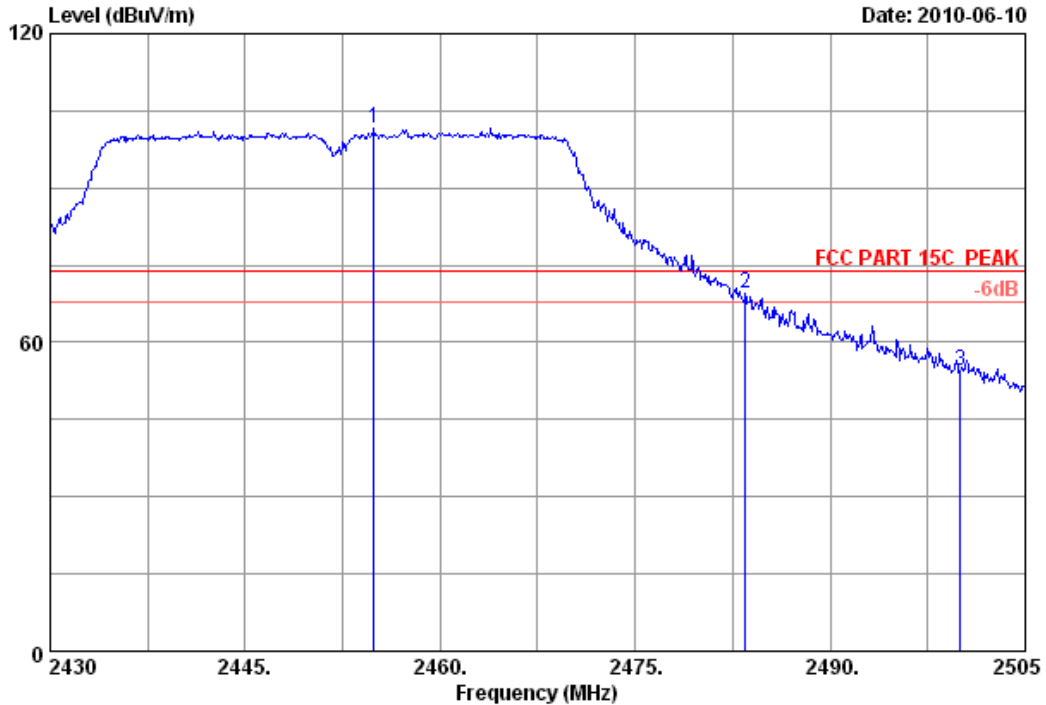
Remarks:

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



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Postcode:518057

Data: 101 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 101  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

	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	2454.900	29.48	8.82	36.02	99.45	101.73	74.00	-27.73	Peak
2	2483.500	29.49	8.87	35.97	67.29	69.68	74.00	4.32	Peak
3	2500.000	29.50	8.92	36.00	51.93	54.35	74.00	19.65	Peak

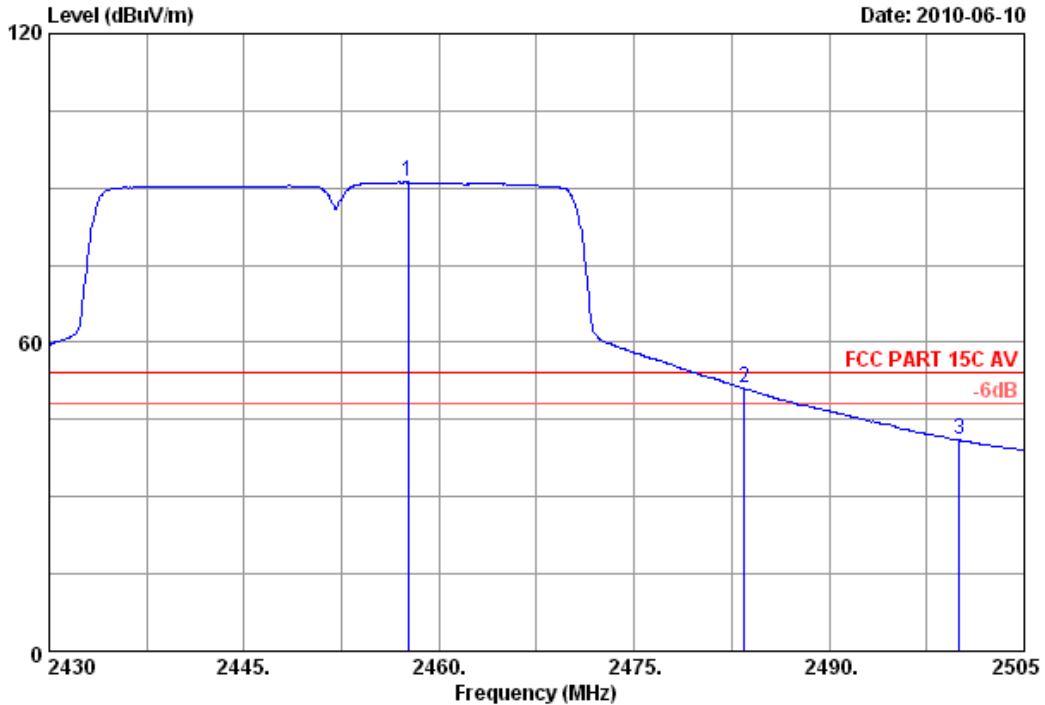
Remarks:

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



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Data: 102 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 102  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2457.600	29.48	8.82	36.02	88.83	91.11	54.00	-37.11	Average	
2 2483.500	29.49	8.87	35.97	48.61	51.00	54.00	3.00	Average	
3 2500.000	29.50	8.92	36.00	38.56	40.98	54.00	13.02	Average	

Remarks:

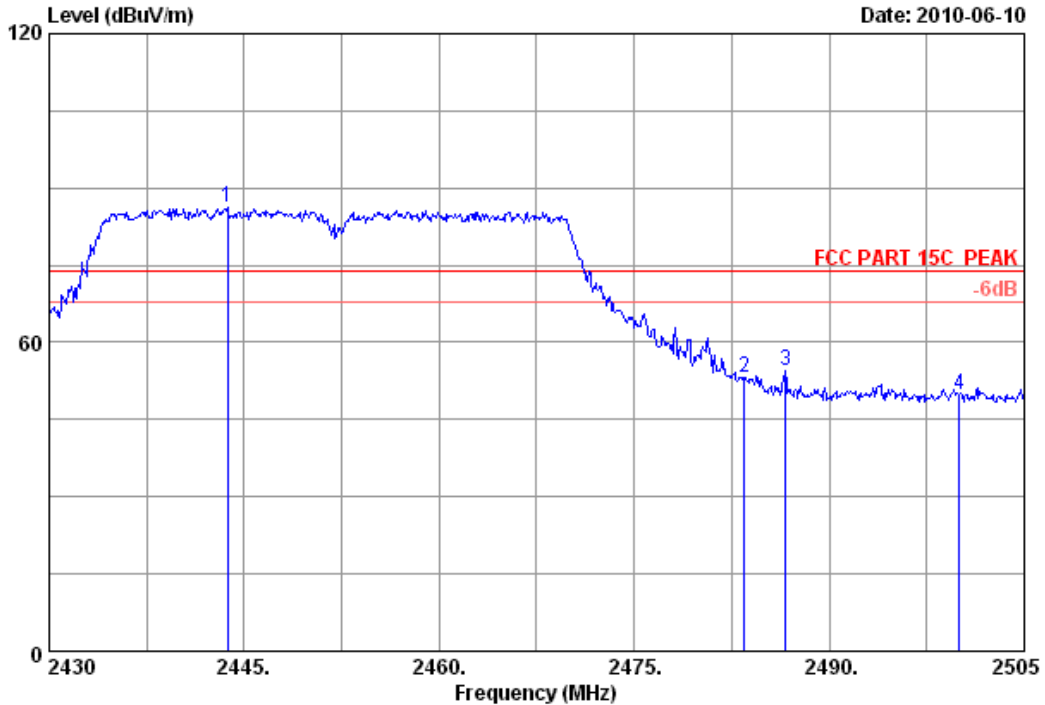
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.





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Data: 103 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 103  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C PEAK  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

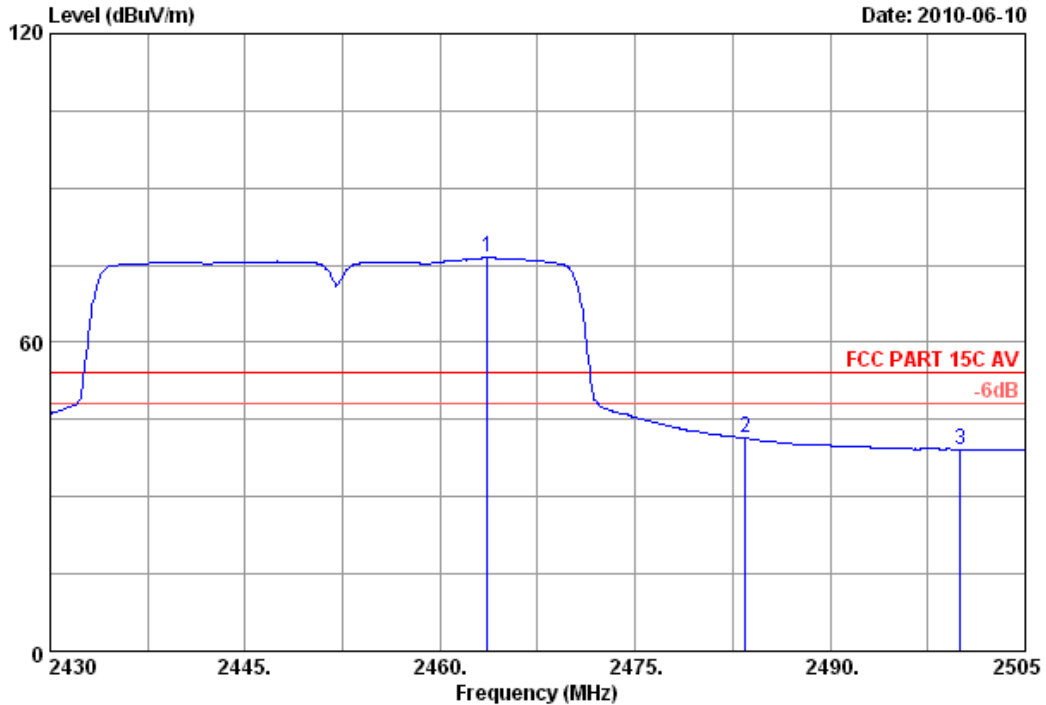
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2443.725	29.47	8.77	36.06	84.10	86.28	74.00	-12.28	Peak
2	2483.500	29.49	8.87	35.97	50.63	53.02	74.00	20.98	Peak
3	2486.625	29.49	8.87	35.97	51.99	54.38	74.00	19.62	Peak
4	2500.000	29.50	8.92	36.00	47.45	49.87	74.00	24.13	Peak

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



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Postcode:518057

Data: 104 File: E:\2010 report data\TP-LINK\ACS10Q1006.EM6 (104)



Site no. : 3m Chamber Data no. : 104  
 Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15C AV  
 Env. / Ins. : 23°C/54% Engineer : Sunny-lu  
 EUT : 3G/3.75G Wireless Lite N Router  
 Power : DC 12V From Adapter Input AC 120V/60Hz  
 Test mode : IEEE802.11n HT40 CH7 2452MHz Tx  
 M/N : TL-MR3220

	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1 2463.600	29.48	8.82	36.02	74.14	76.42	54.00	-22.42	Average	
2 2483.500	29.49	8.87	35.97	38.96	41.35	54.00	12.65	Average	
3 2500.000	29.50	8.92	36.00	36.81	39.23	54.00	14.77	Average	

Remarks:

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

## 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, 10	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 10	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08, 10	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 300 kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

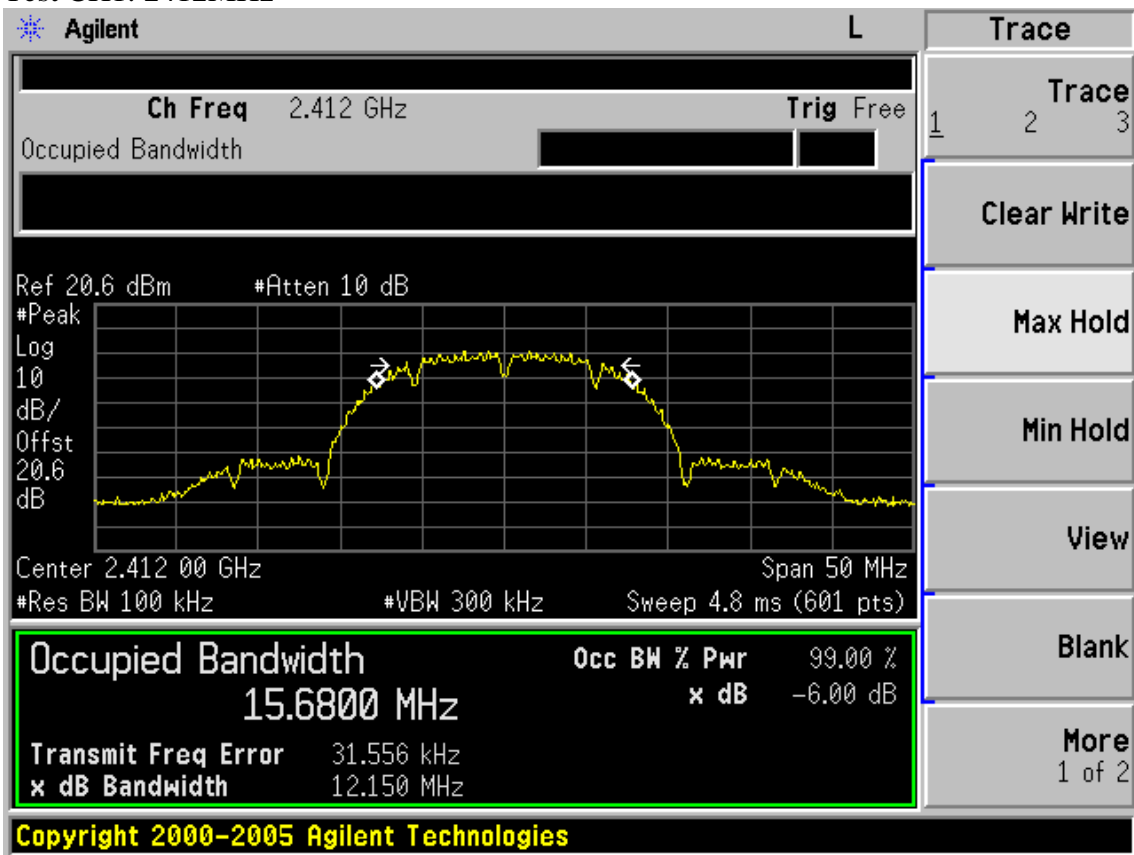
### 7.4. Test Results

EUT:3G/3.75G Wireless Lite N Router		
M/N:TL-MR3220		
Test date:2010-06-19	Pressure: 100.6 kpa	Humidity: 60 %
Tested by:Sunny-lu	Test site: RF Site	Temperature : 25°C

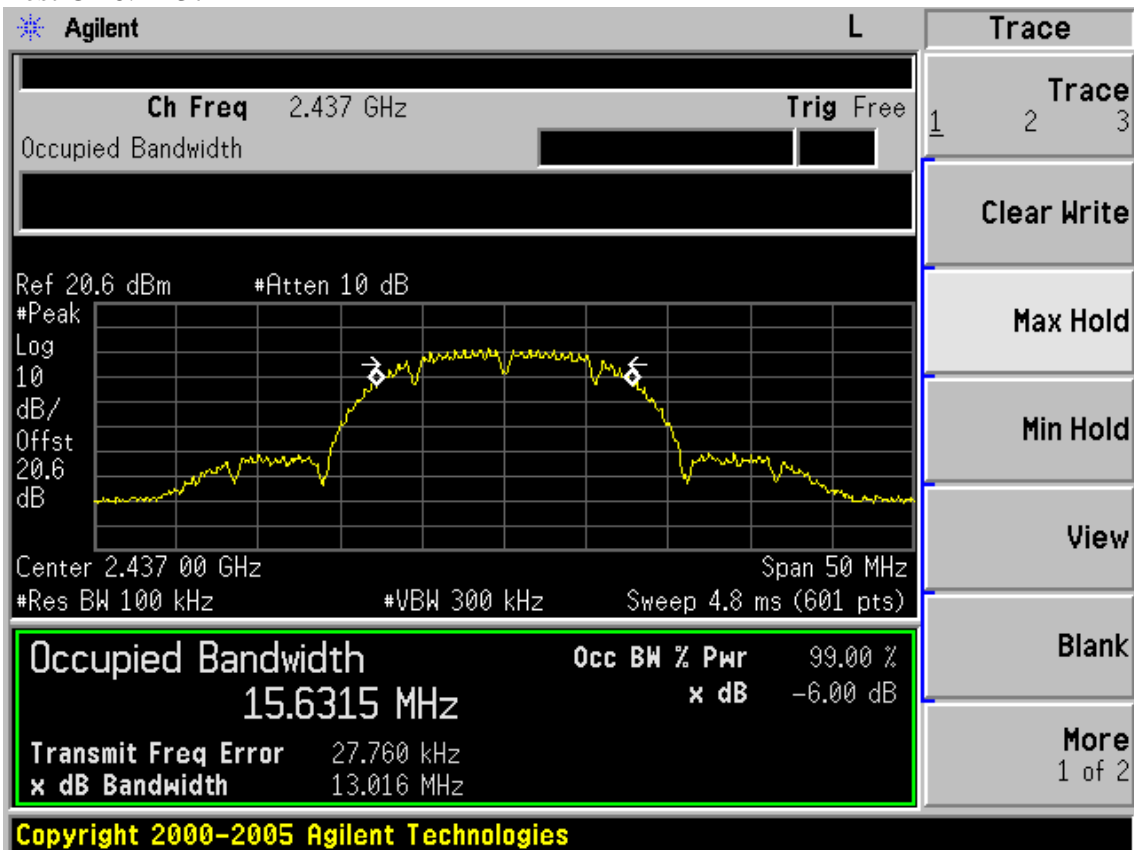
Cable loss: 0.6 dB		Attenuator loss: 20 dB	Antenna Gain: 5 dBi
Test Mode	CH	6dB bandwidth ( MHz )	Limit (KHz)
11b	CH1	12.150	>500
	CH6	13.016	>500
	CH11	12.131	>500
11g	CH1	16.536	>500
	CH6	16.552	>500
	CH11	16.579	>500
11n HT20	CH1	17.807	>500
	CH6	17.792	>500
	CH11	17.808	>500
11n HT40	CH1	36.346	>500
	CH4	36.293	>500
	CH7	36.380	>500
Conclusion : PASS			

Test Mode: IEEE 802.11b TX

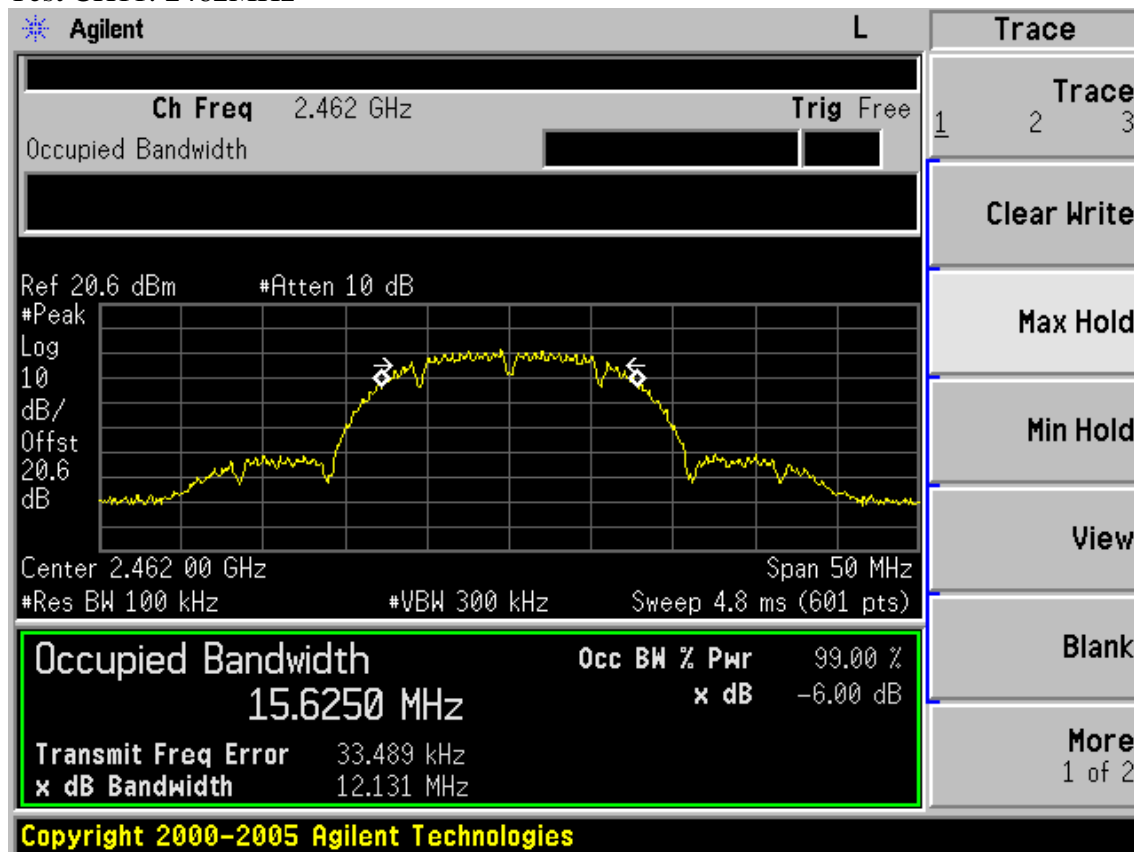
Test CH1: 2412MHz



Test CH6: 2437MHz

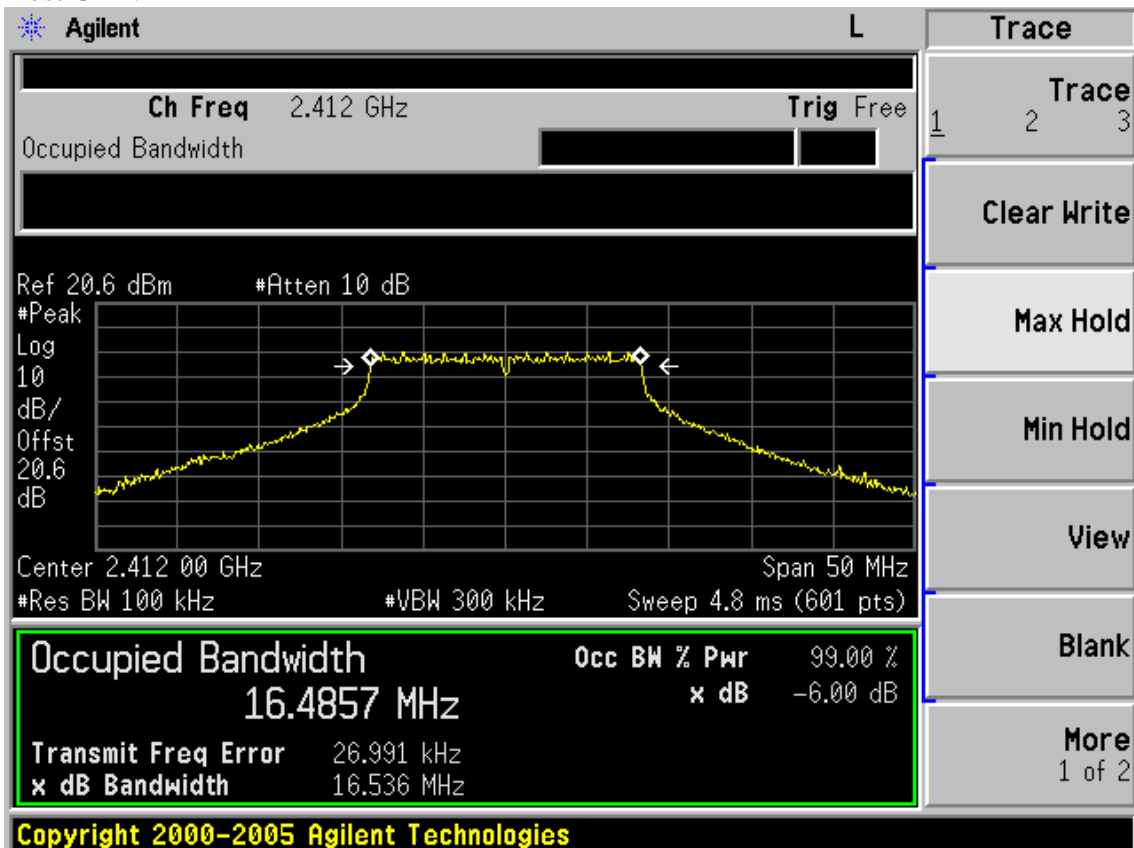


Test CH1: 2462MHz

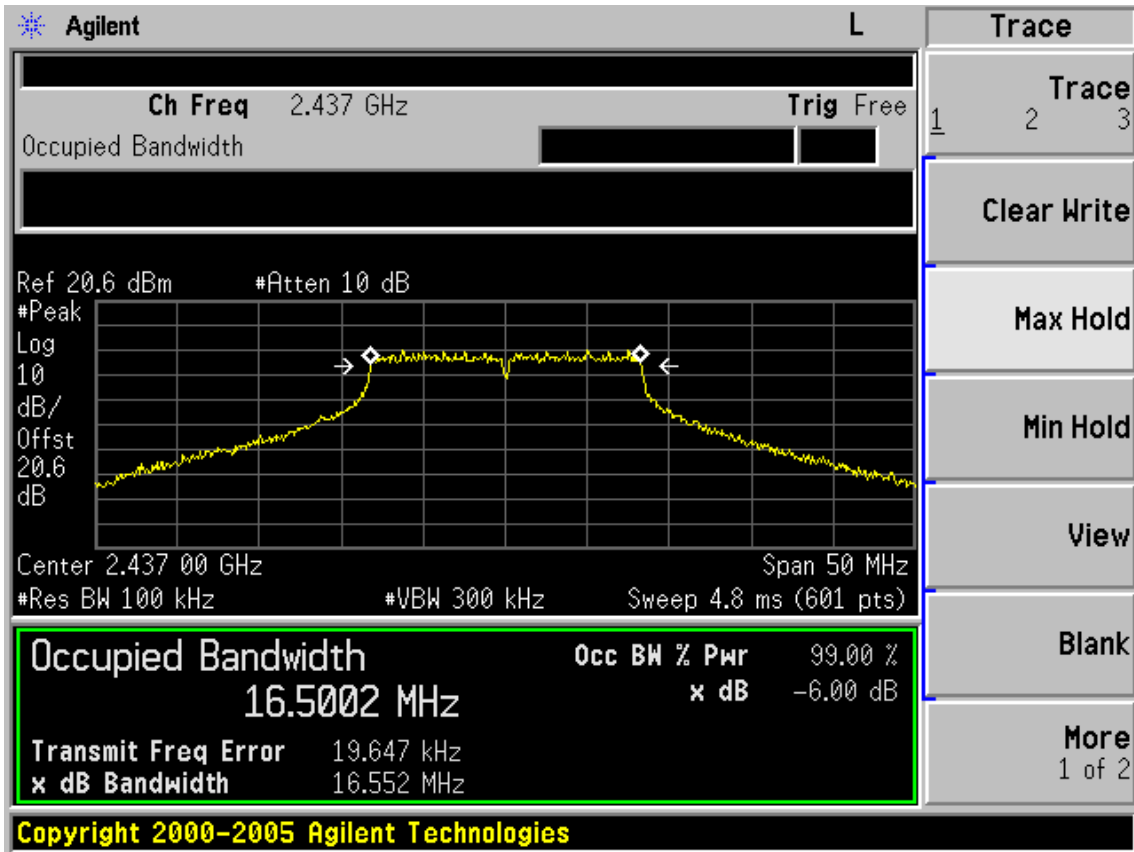


Test Mode: IEEE 802.11g TX

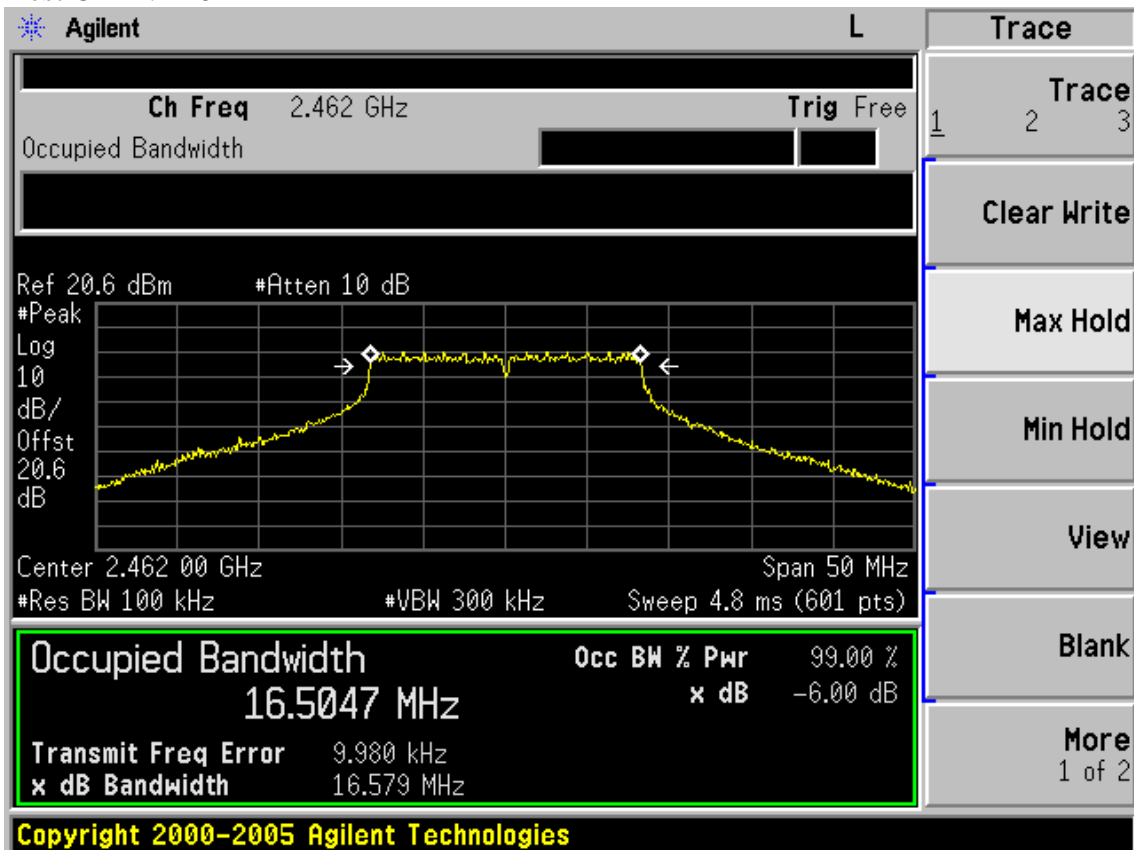
Test CH1: 2412MHz



Test CH6: 2437MHz

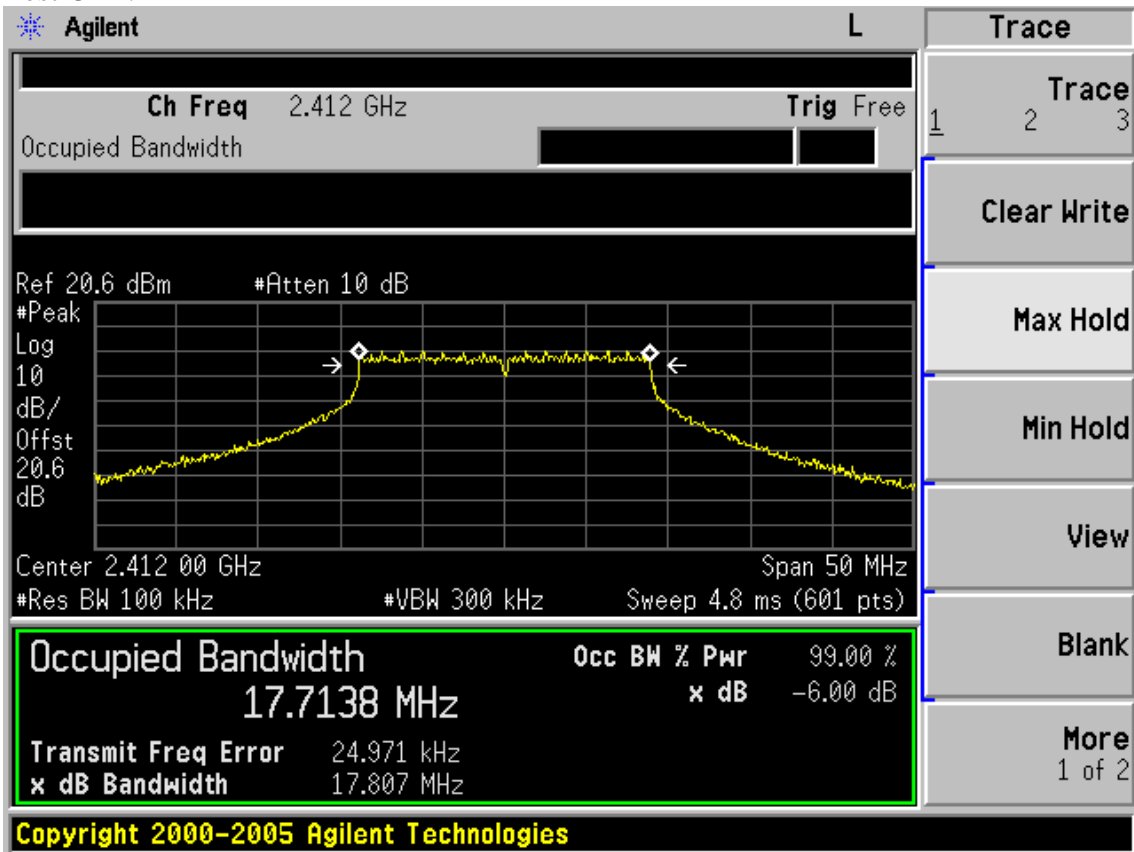


Test CH11: 2462MHz

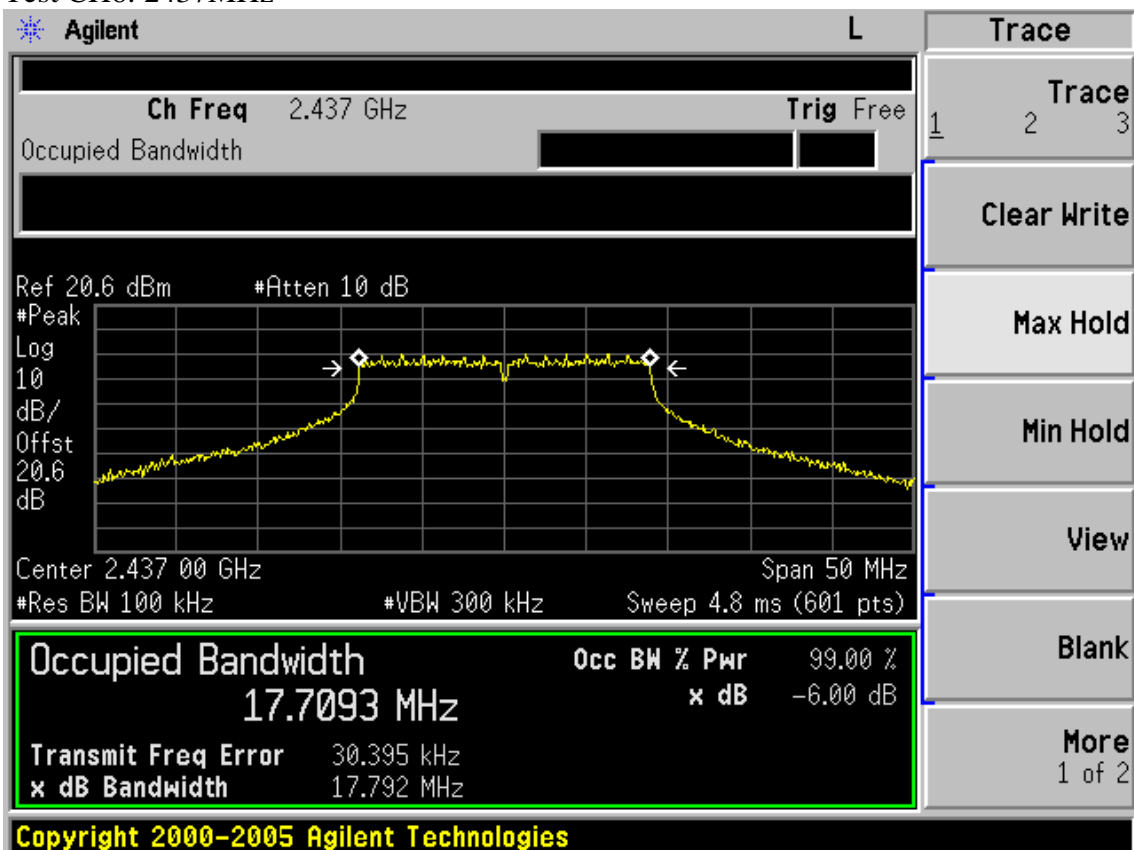


Test Mode: IEEE 802.11n HT20

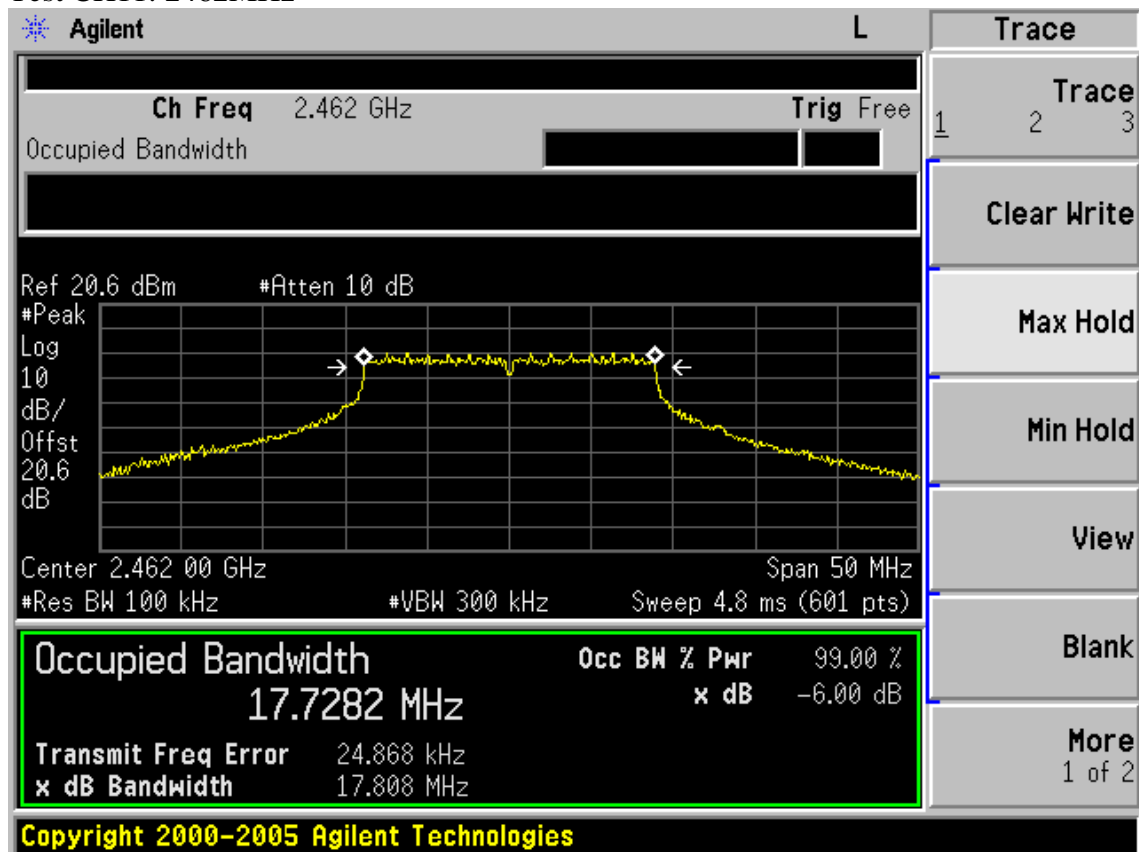
Test CH1: 2412MHz



Test CH6: 2437MHz

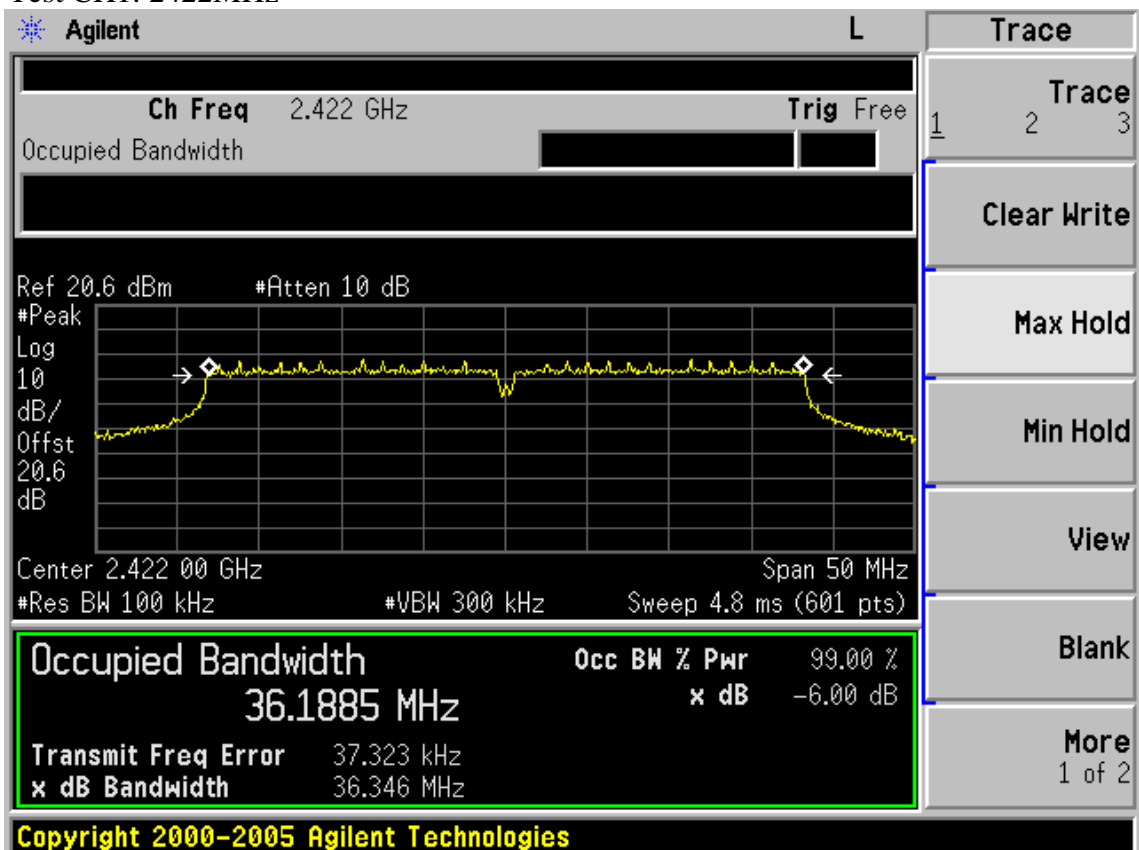


Test CH1: 2462MHz



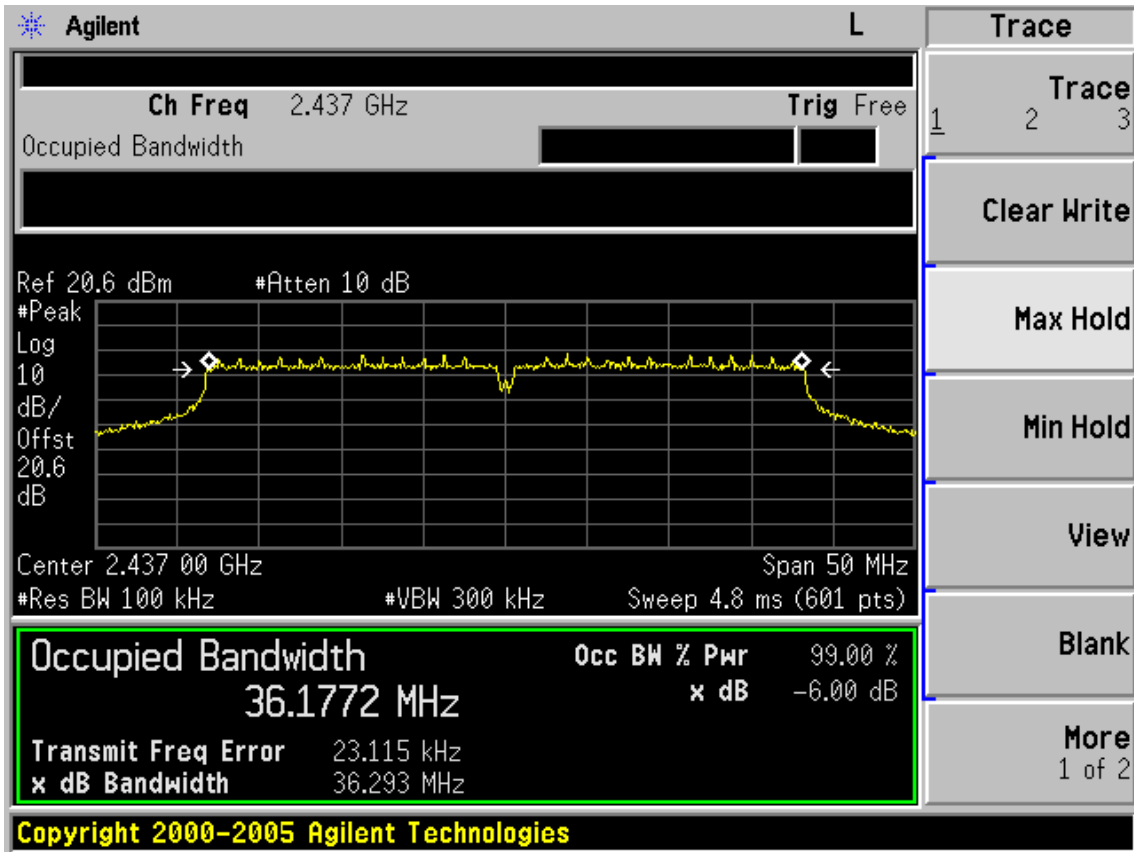
Test Mode: IEEE 802.11n HT40

Test CH1: 2422MHz

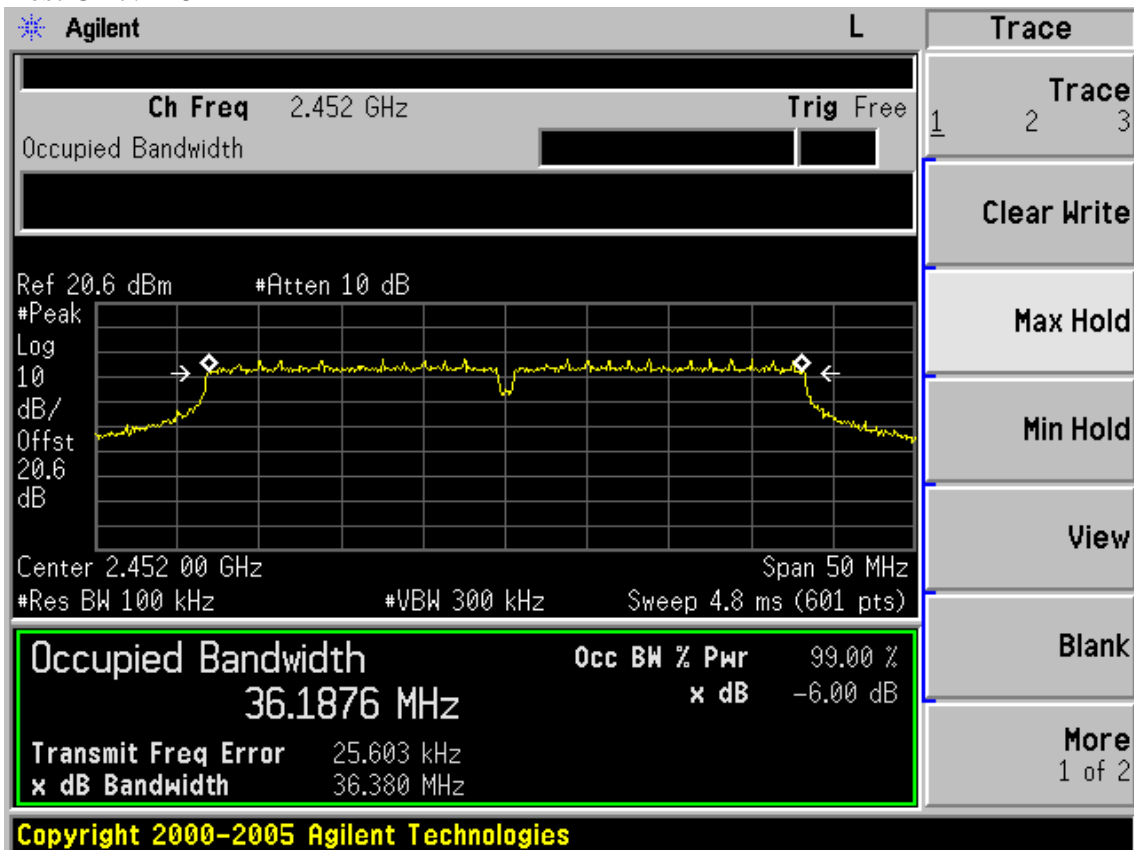




Test CH4: 2437MHz



Test CH7: 2452MHz



## 8. OUTPUT POWER TEST

### 8.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Power meter	Anritsu	ML2487A	6K00002472	Oct.20.09	1 Year
2	Power sensor	Anritsu	MA2491A	0033005	Oct.20.09	1 Year
3.	Attenuator	Agilent	8491B	MY39262165	May.08,10	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08,10	1 Year
5.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,10	1 Year

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

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

### 8.3. Test Procedure

- 1, Connected the EUT's antenna port to measure device by 20dB attenuator.
- 2, For IEEE 802.11b/g and IEEE802.11n HT20 mode, use a PK power meter which's bandwidth is above 6dB bandwidth of signal to measure out each test modes' PK output power.
- 3, For IEEE802.11n HT40 mode, because the signal's bandwidth is about 40MHz and above 20MHz bandwidth of power sensor ML2491A. So the channel power measure function of Spectrum Analyzer was used to measure out the PK output power of each test modes'

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

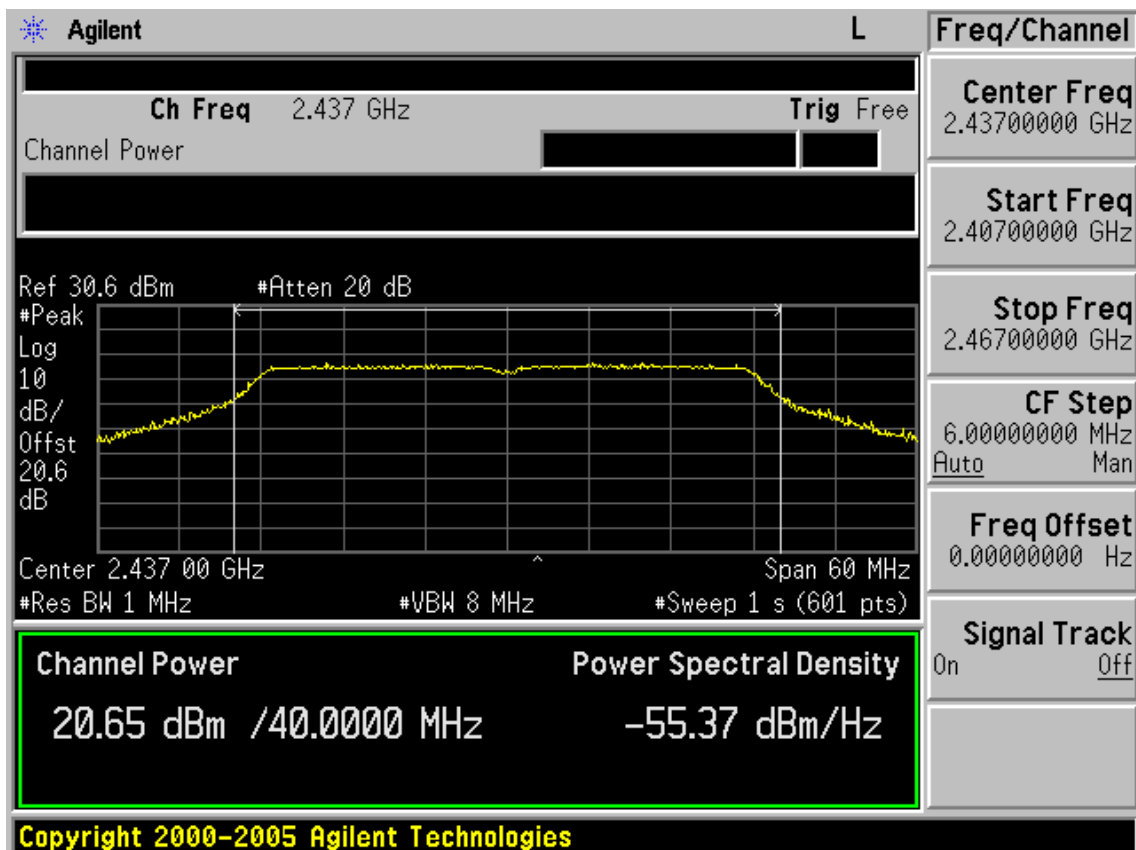
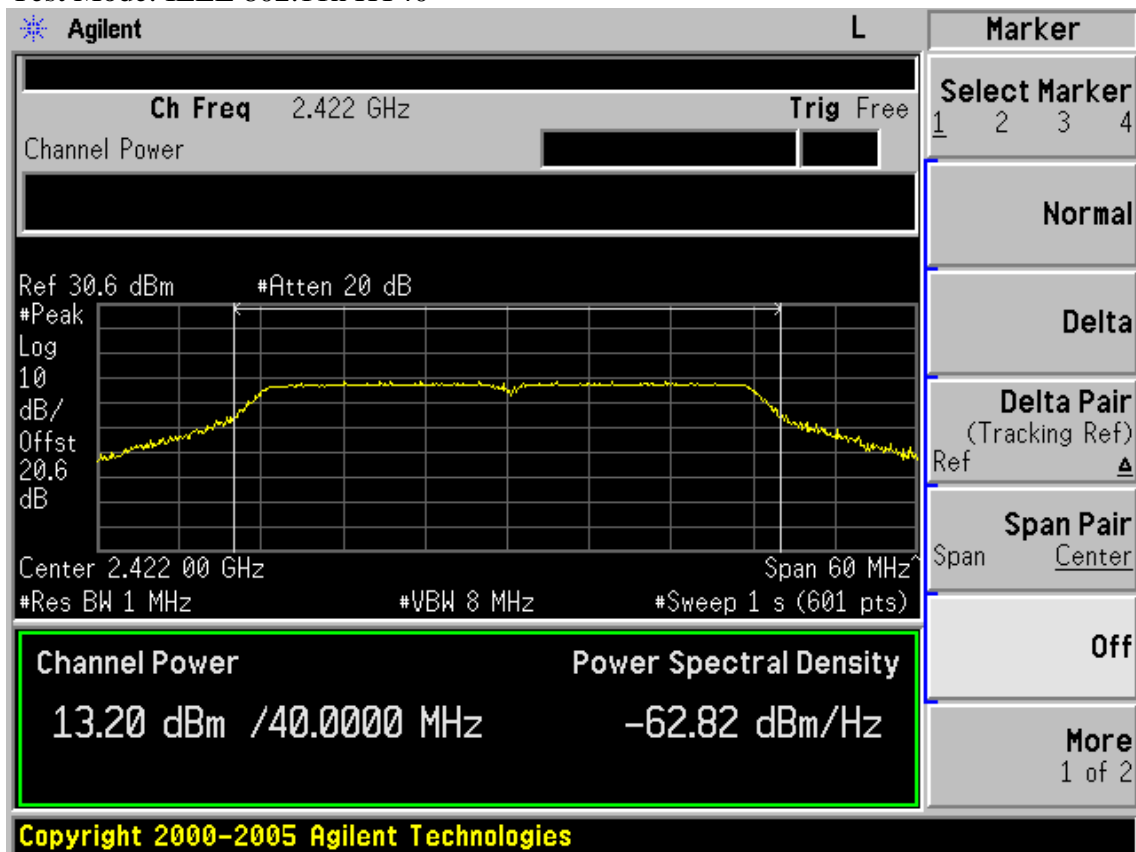
## 8.4. Test Results

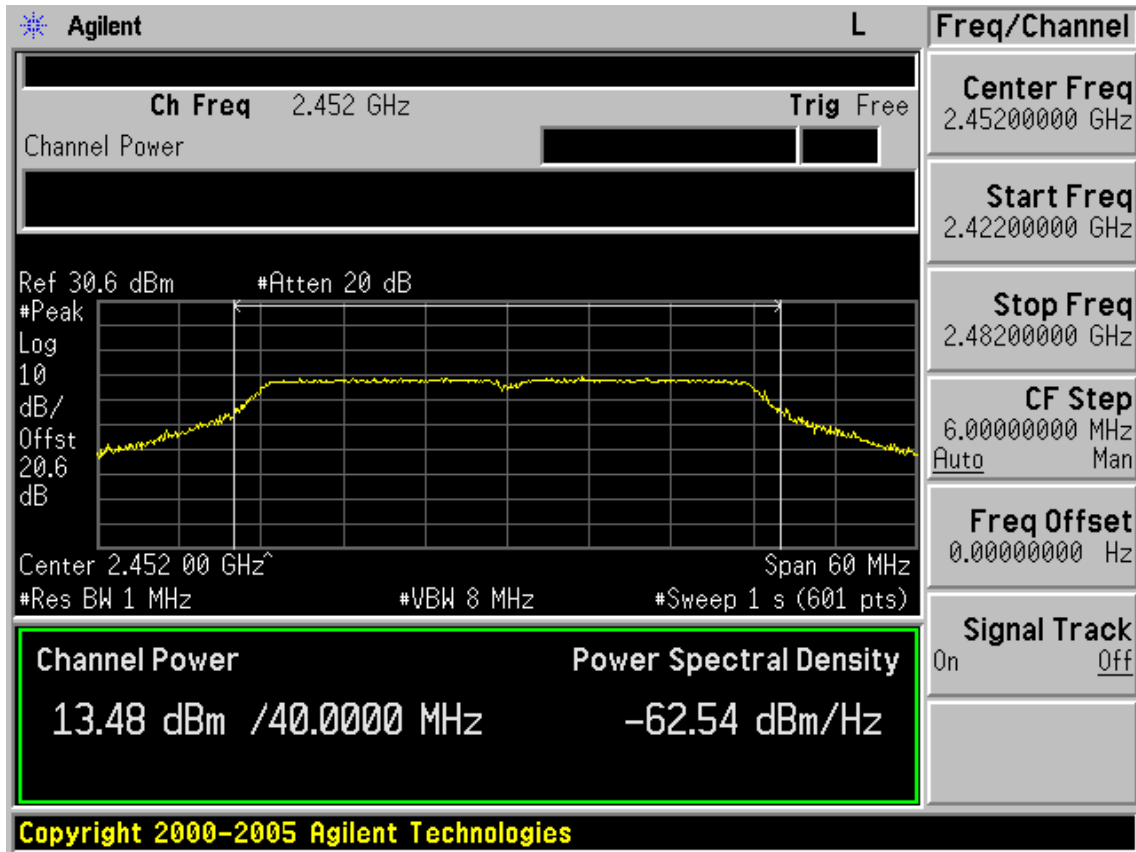
EUT: 3G/3.75G Wireless Lite N Router		
M/N: TL-MR3220		
Test date:2010-06-09	Pressure:100.6 kpa	Humidity:60%
Tested by: Sunny-Lu	Test site: RF site	Temperature : 25°C

Cable loss: 0.6 dB		Attenuator loss: 20 dB	Antenna Gain: 5 dBi
Test Mode	CH	Peak output Power ( dBm )	Limit (dBm)
11b	CH1	18.75	30
	CH6	18.67	30
	CH11	18.39	30
11g	CH1	19.48	30
	CH6	22.65	30
	CH11	19.08	30
11n HT20	CH1	17.90	30
	CH6	23.26	30
	CH11	18.06	30
11n HT40	CH1	13.20	30
	CH4	20.65	30
	CH7	13.48	30
Conclusion : PASS			

Chain 1

Test Mode: IEEE 802.11n HT40





## 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, 10	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 10	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08, 10	1Year

### 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

- 1, Connected the EUT's antenna port to spectrum analyzer device by 20dB attenuator.
- 2, Follow the test procedure as described in ANSI C.10: 2009 Clause 6.11.2.3 to measure out each test modes and chain's power density with 3KHz.

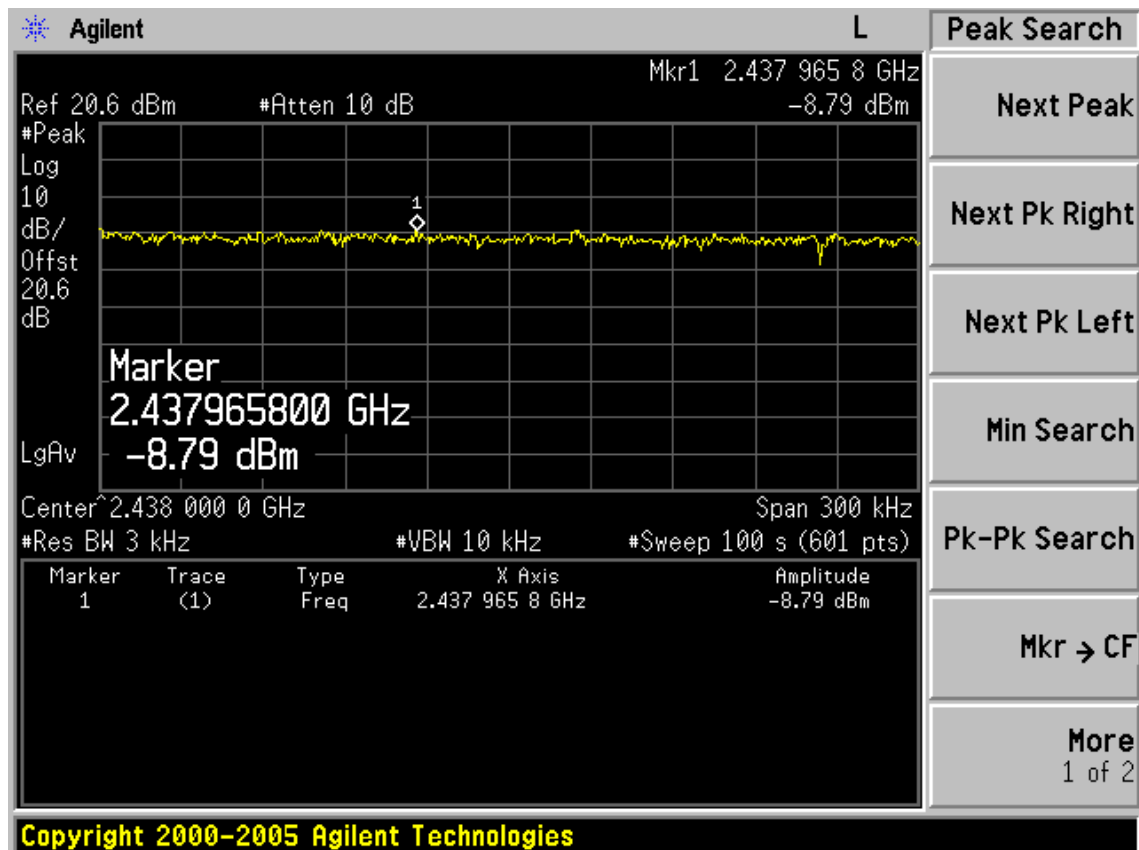
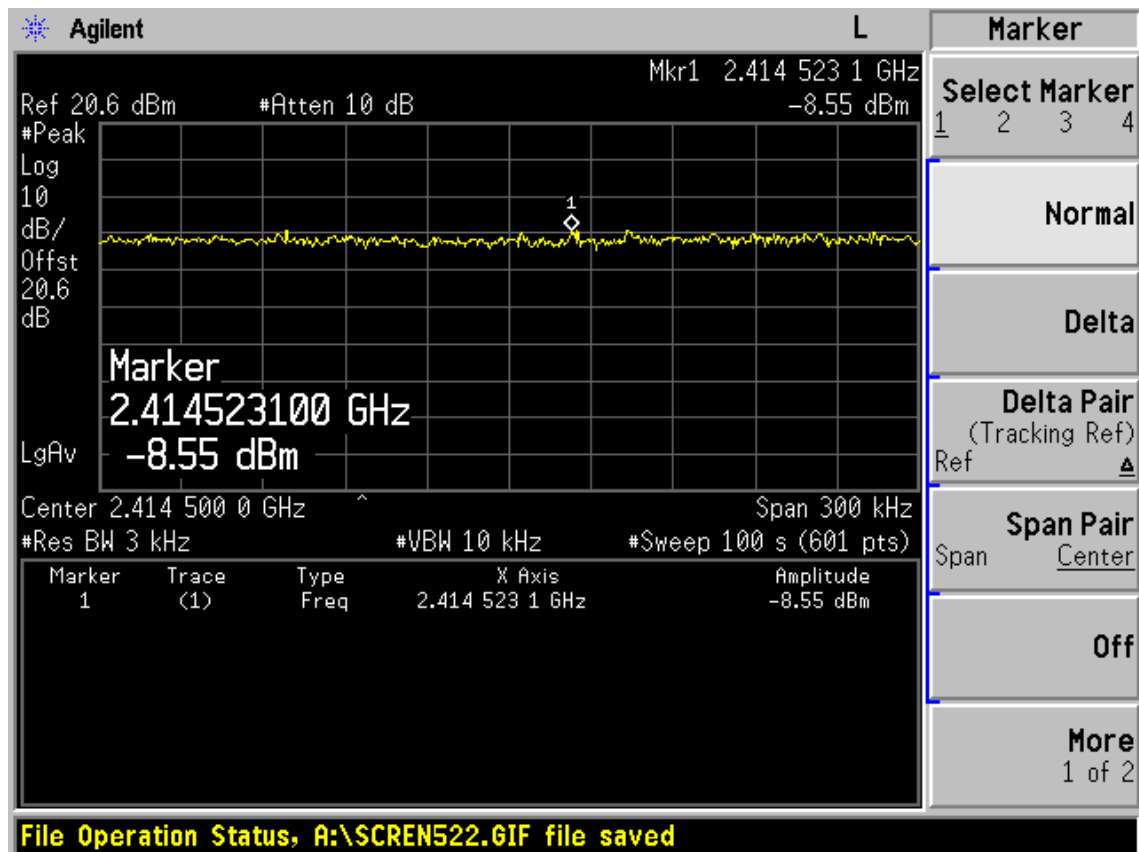
Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

## 9.4. Test Results

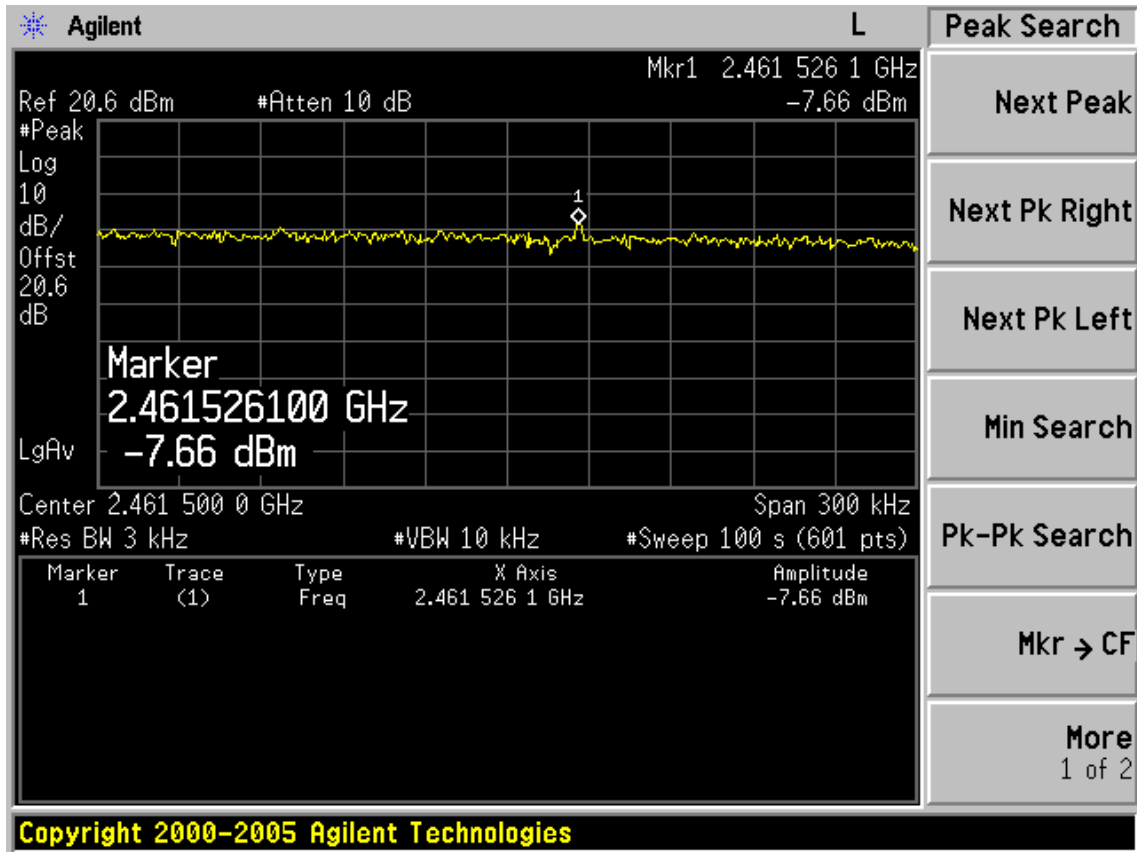
EUT: 3G/3.75G Wireless Lite N Router		
M/N: TL-MR3220		
Test date:2010-06-09	Pressure:100.6 KPa	Humidity:60%
Tested by: Sunny-Lu	Test site: RF site	Temperature : 26°C

Cable loss: 0.6 dB		Attenuator loss: 20 dB	Antenna Gain: 5 dBi
Test Mode	CH	Power density ( dBm/3KHz )	Limit (dBm/3KHz)
11b	CH1	-8.55	8
	CH6	-8.79	8
	CH11	-7.66	8
11g	CH1	-13.83	8
	CH6	-8.74	8
	CH11	-13.83	8
11n HT20	CH1	-15.89	8
	CH6	-10.05	8
	CH11	-15.20	8
11n HT40	CH1	-21.59	8
	CH4	-15.74	8
	CH7	-22.24	8
Conclusion : PASS			

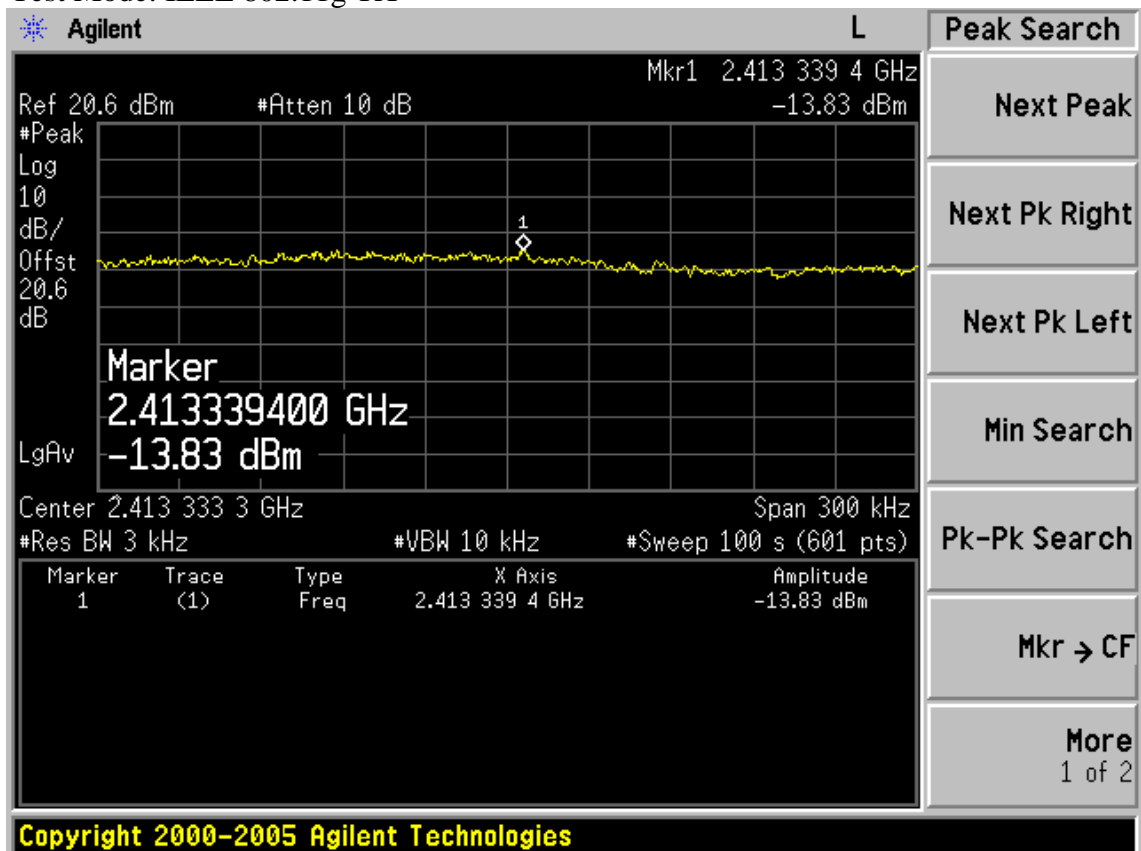
Test Mode: IEEE 802.11b TX

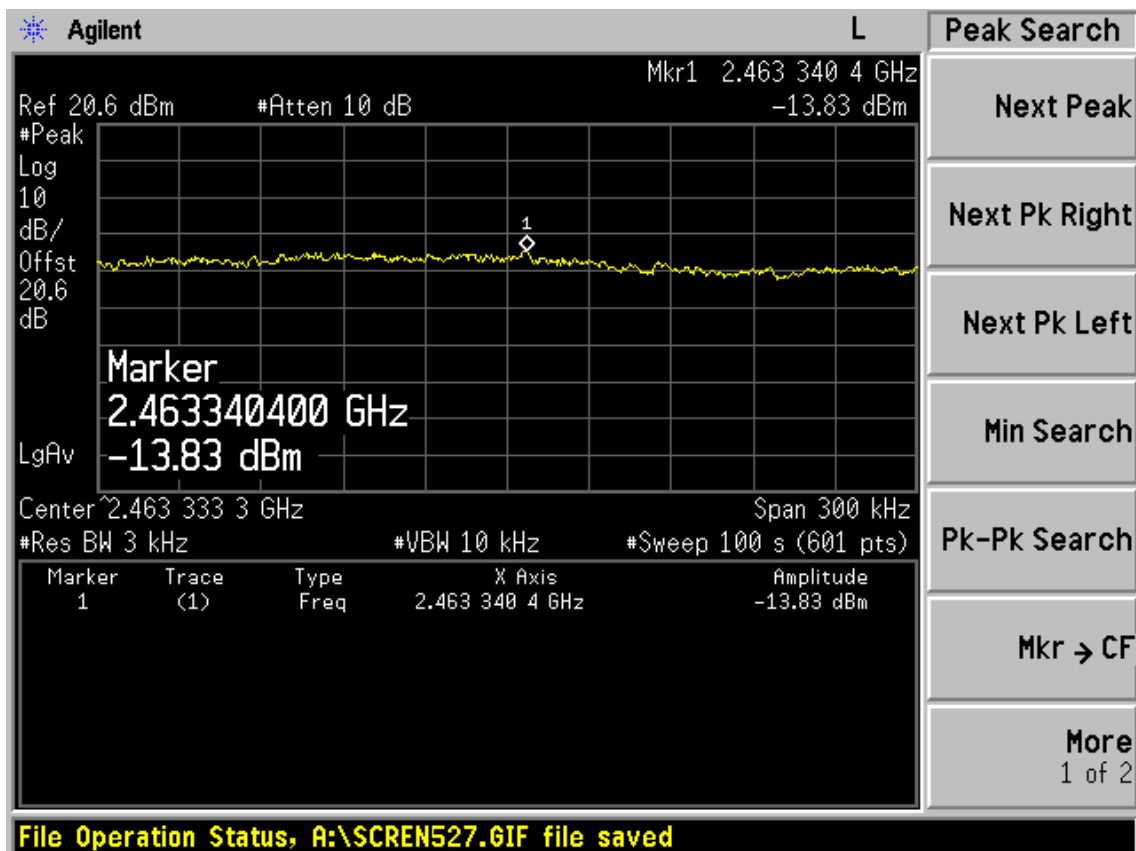
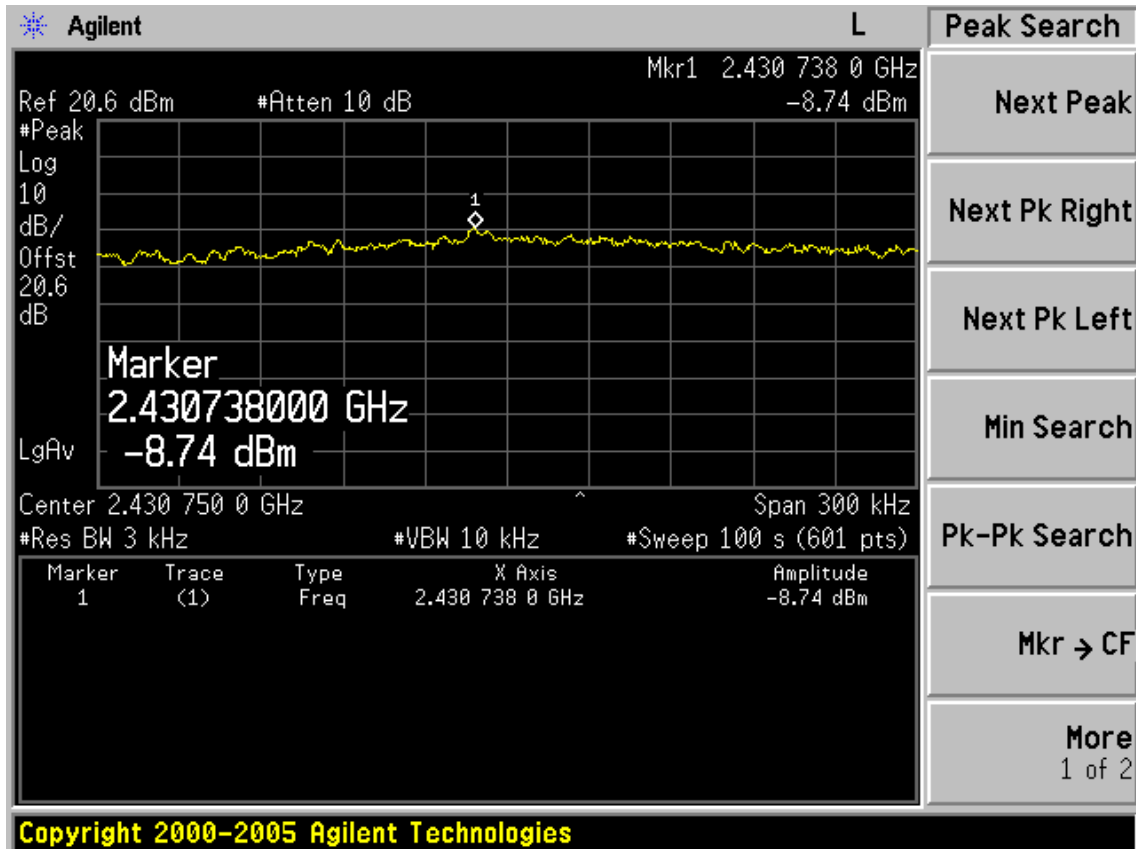




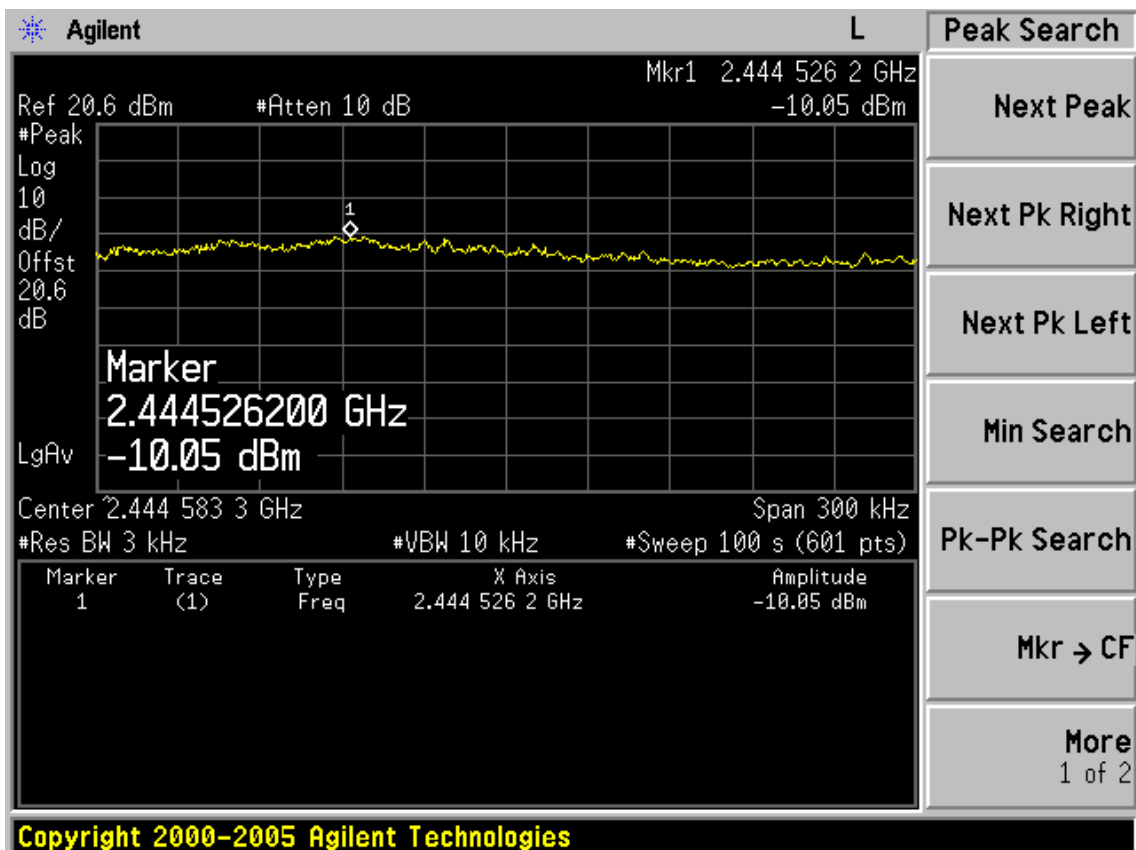
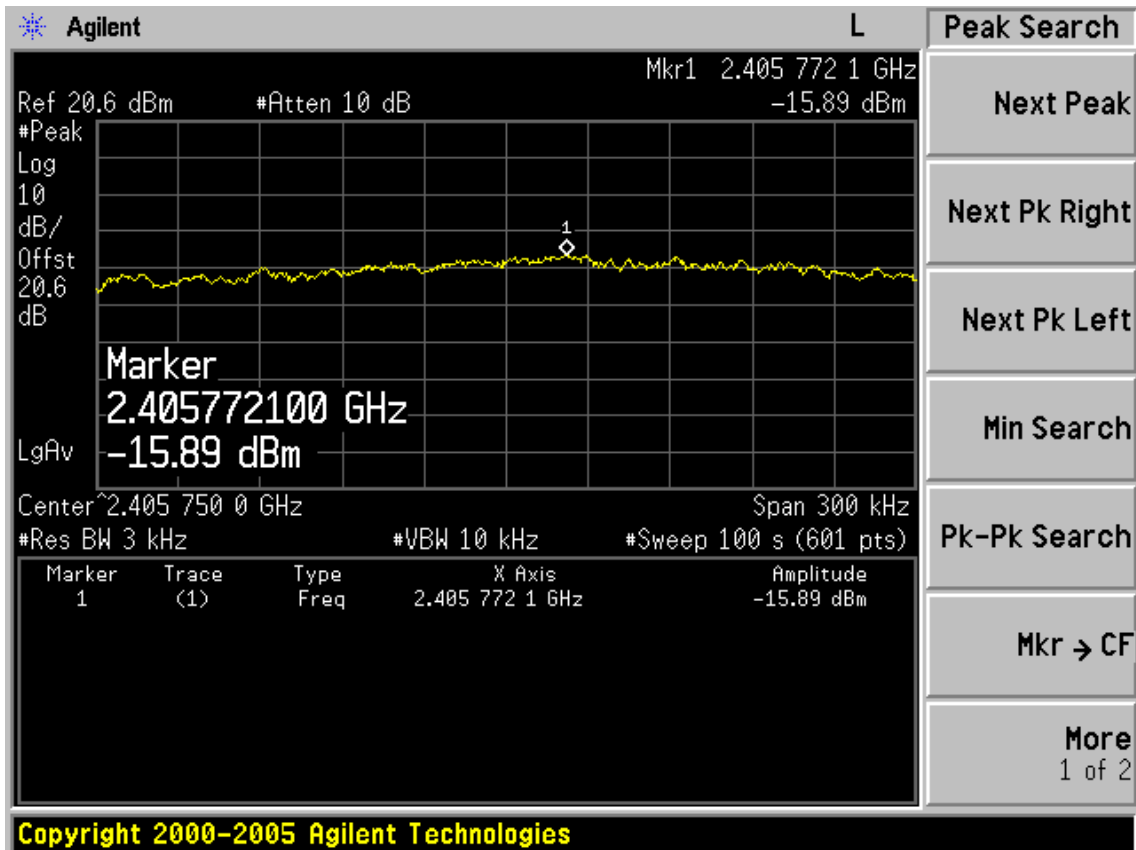


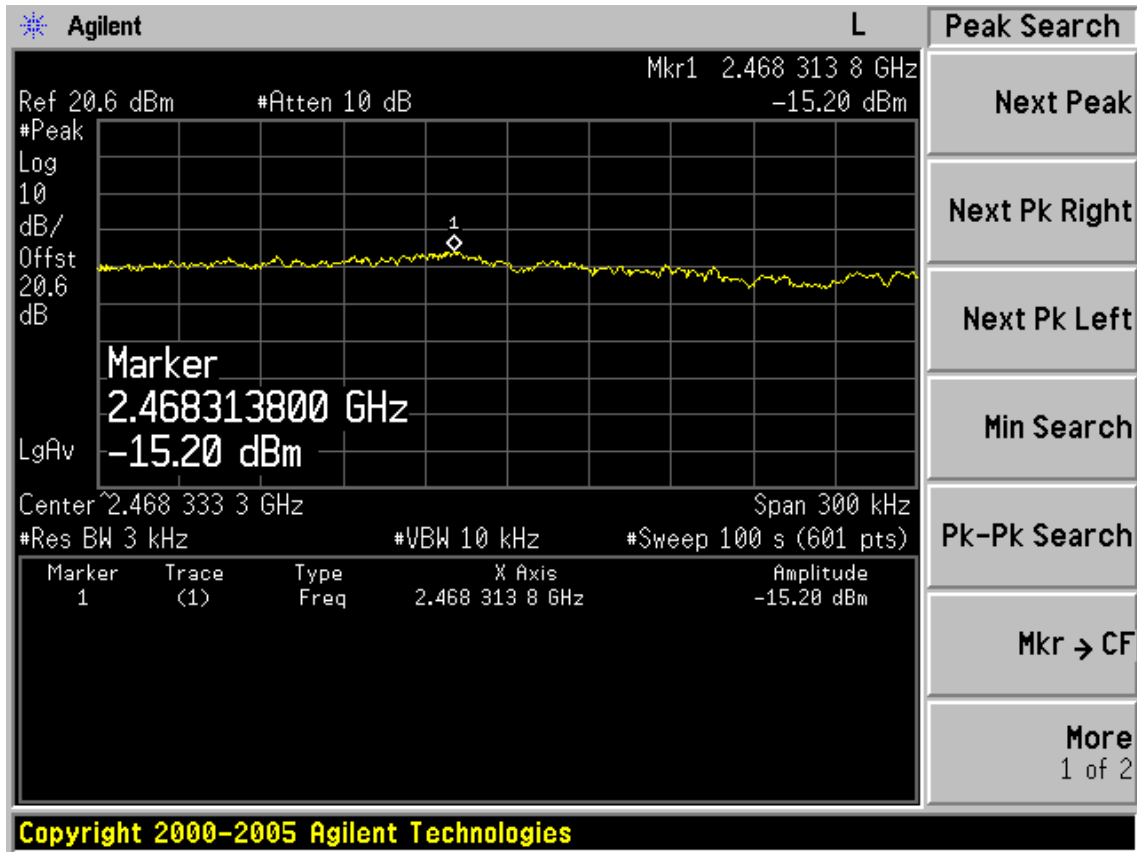
Test Mode: IEEE 802.11g TX



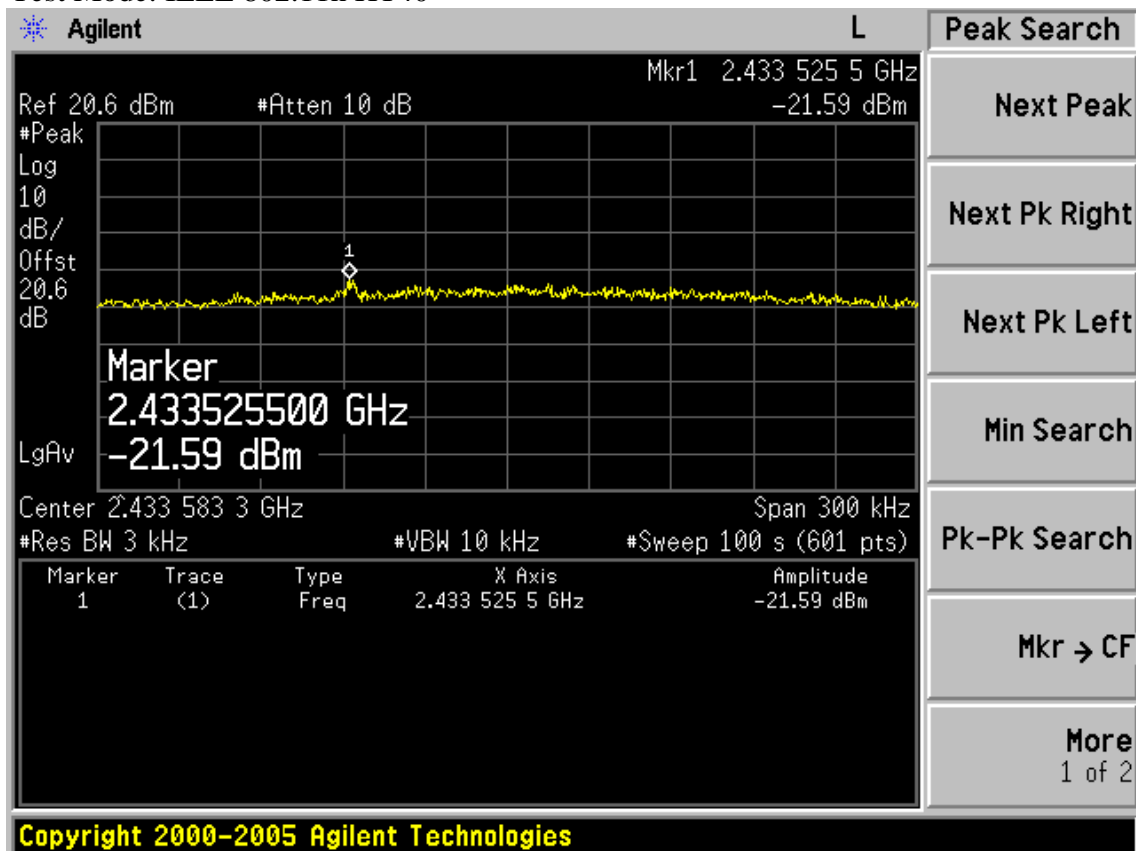


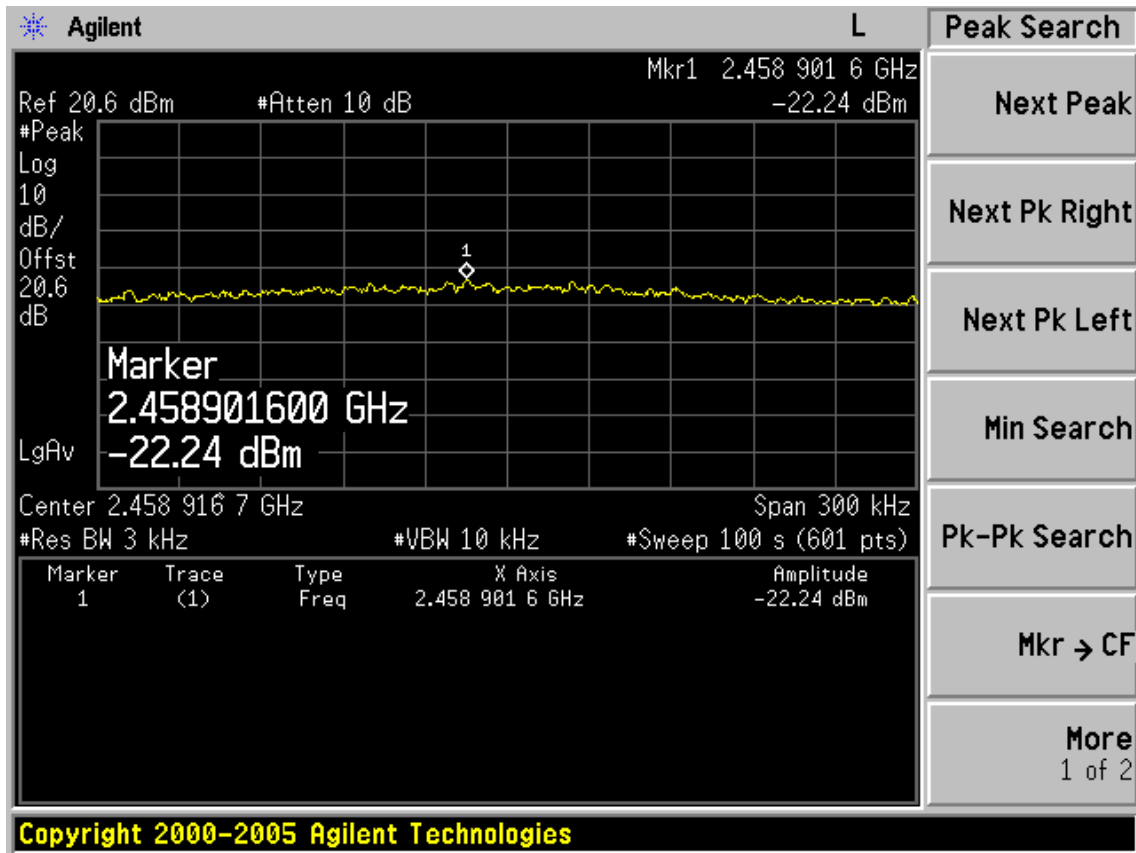
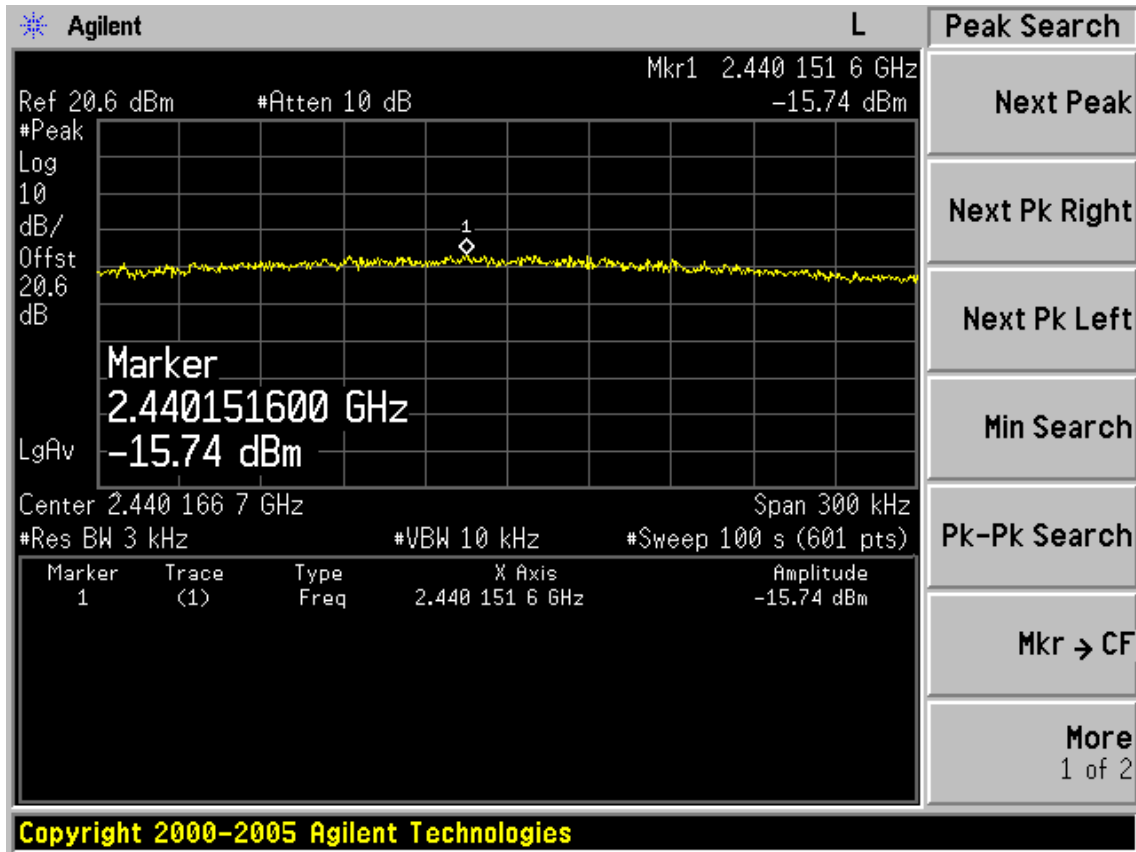
Test Mode: IEEE 802.11n HT20





Test Mode: IEEE 802.11n HT40





## **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 transmit antennas used for this product is dipole antenna with SMA-B connector 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 5dBi.

## 11.MPE ESTIMATION

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

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

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

Note: F= Frequency in MHz

### 11.2.Estimation Result

Mode	CH	Frequency (MHz)	PK Output power (dBm)	Output power (mW)	antenna Gain (dBi)	antenna Gain(line ar)	MPE
11b	1	2412	18.75	74.99	5	3.16	0.0472
	6	2437	18.67	73.62	5	3.16	0.0463
	11	2462	18.39	69.02	5	3.16	0.0434
11g	1	2412	19.48	88.72	5	3.16	0.0558
	6	2437	22.65	184.08	5	3.16	0.1159
	11	2462	19.08	80.91	5	3.16	0.0509
11n HT20	1	2412	17.9	61.66	5	3.16	0.0388
	6	2437	23.26	211.84	5	3.16	0.1333
	11	2462	18.06	63.97	5	3.16	0.0403
11n HT40	1	2422	13.2	20.89	5	3.16	0.0132
	4	2437	20.65	116.14	5	3.16	0.0731
	7	2452	13.48	22.28	5	3.16	0.0140

Note: The estimation distance is 20cm

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

[ NONE]