

# FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

Proware Technologies Co., Ltd.

150M Wireless Lite-N Access Point

Model Number: PW-AN401D / M-WA701ND

FCC ID: WWMAN401XV1

Prepared for: Proware Technologies Co., Ltd.

2<sup>nd</sup> F1 East Wing, South Section, Factory Building 24, Science&Technology Park, Shennan Rd, Nanshan

District, Shenzhen

Prepared By: Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496

Report Number : ACS-F10283

Date of Test : Aug.25~Sep.17, 2010

Date of Report : Sep.25, 2010



## TABLE OF CONTENTS

es	scription	Pag
	SUMMARY OF STANDARDS AND RESULTS	1
	1.1. Description of Standards and Results	
	GENERAL INFORMATION	
	2.1. Description of Device (EUT)	
	2.3. Tested Supporting System Details	
	2.4. Block diagram of connection between the EUT and simulators	
	2.5. Test Facility	
	2.6. Measurement Uncertainty (95% confidence levels, k=2)	2
	POWER LINE CONDUCTED EMISSION TEST	3
	3.1. Test Equipments	3
	3.2. Block Diagram of Test Setup	
	3.3. Power Line Conducted Emission Test Limits	3
	3.4. Configuration of EUT on Test	3
	3.5. Operating Condition of EUT	
	3.6. Test Procedure	
	3.7. Power Line Conducted Emission Test Results	
	RADIATED EMISSION TEST	4
	4.1. Test Equipment	
	4.2. Block Diagram of Test Setup	
	4.3. Radiated Emission Limit	
	4.4. EUT Configuration on Test	
	<ul><li>4.5. Operating Condition of EUT</li><li>4.6. Test Procedure</li></ul>	
	4.7. Radiated Emission Test Results	
	CONDUCTED SPURIOUS EMISSIONS	
	5.1. Test Equipment	
	5.3. Test Procedure	
	5.4. Test result	
	BAND EDGE COMPLIANCE TEST	
	6.1. Test Equipment	
	6.2. Limit	
	6.3. Test Produce	
	6.4. Test Results	
	6dB Bandwidth Test	
	7.1. Test Equipment	
	7.2. Limit	
	7.3. Test Procedure	
	7.4. Test Results	
	OUTPUT POWER TEST	
	8.1. Test Equipment	
	8.2. Limit (FCC Part 15C 15.247 b(3))	
	8.3. Test Procedure	





	8.4. Test Results	8-2
9.	POWER SPECTRAL DENSITY TEST	9-1
	9.1. Test Equipment	9-1
	9.2. Limit	9-1
	9.3. Test Procedure	
	9.4. Test Results	9-2
10.	ANTENNA REQUIREMENT	10-1
11.	DEVIATION TO TEST SPECIFICATIONS	11-1
12.	PHOTOGRAPH OF TEST	12-1
	12.1. Photos of Power Line Conducted Emission Test	12-1
	12.2. Photos of Radiated Emission Test	12-3
13.	PHOTOGRAPH OF EUT	13-1



#### TEST REPORT CERTIFICATION

**Applicant** 

Proware Technologies Co., Ltd.

Manufacturer

Proware Technologies Co., Ltd.

**EUT Description** 

150M Wireless Lite-N Access Point

FCC ID

WWMAN401XV1

(A) MODEL NO.

: PW-AN401D / M-WA701ND

(B) SERIAL NO.

: N/A

(C) POWER SUPPLY: DC 9V

(D) TEST VOLTAGE: DC 9V From Adapter Input AC 120V/60Hz

Tested for comply with:

FCC Rules and Regulations Part 15 Subpart C:2008

Test procedure used:

ANSI C63.10:2009

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements.

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

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

Date of Test:

Aug.25<sup>~</sup> Sep.17, 2010

Report of date:

Sep.25,2010

Prepared by:

Approved & Authorized Signer:

Reviewer by:

Jamy Yu / Supervisor

AUDIX

® 信華科技 (深圳) 有限公司

Audix Technology (Shenzhen) Co., Ltd.

EMC部門報告專用章

Stamp only for EMC Dept. Report

Signature:

Ken Lu / Manager



FCC ID:WWMAN401XV1 page 1-1

# 1. SUMMARY OF STANDARDS AND RESULTS

# 1.1.Description of Standards and Results

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

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



FCC ID: WWMAN401XV1 page 2-1

#### 2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name : 150M Wireless Lite-N Access Point

Model Number : PW-AN401D / M-WA701ND

Note: This device will use this two model numbers, and the fact device is same, there is no any difference of this two

model numbers.

FCC ID : WWMAN401XV1

Operation Frequency: IEEE 802.11b: 2412MHz—2462MHz

IEEE 802.11g: 2412MHz—2462MHz

IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2422MHz—2452MHz

Channel Number : IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels

IEEE 802.11n HT40: 7Channels

Modulation : IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)

Technology IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)

IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM,

QPSK,BPSK)

Antenna Assembly

Gain

Dipole Antenna, 4dBi Gain

Applicant : Proware Technologies Co., Ltd.

2<sup>nd</sup> F1 East Wing, South Section, Factory Building 24, Science&Technology Park, Shennan Rd, Nanshan District,

Shenzhen

Manufacturer : Proware Technologies Co., Ltd.

2nd F1 East Wing, South Section, Factory Building 24, Science&Technology Park, Shennan Rd, Nanshan District,

Shenzhen

Power Adapter : Manufacturer: LEADER ELECTRONICS INC.

M/N: MU08-6090085-A1

Cable: Unshielded, Undetachable, 1.5m

Date of Test : Aug.25~Sep.17, 2010

Date of Receipt : Aug.24, 2010

Sample Type : Prototype production



FCC ID: WWMAN401XV1 page 2-2

#### 2.2. Test Information

A special test software was used to control EUT work in Continuous TX mode(100% duty cycle), and select test channel, wireless mode and data rate.

Tested mode, channel, and data rate information							
Mode	data rate	Channel	Frequency				
	(Mpbs)(see Note)		(MHz)				
IEEE 802.11b	11	Low:CH1	2412				
	11	Middle: CH6	2437				
	11	High: CH11	2462				
IEEE 802.11g	54	Low:CH1	2412				
	54	Middle: CH6	2437				
	54	High: CH11	2462				
IEEE 802.11n HT20	6.5	Low:CH1	2412				
	6.5	Middle: CH6	2437				
	6.5	High: CH11	2462				
IEEE 802.11n HT40	13.5	Low:CH1	2422				
	13.5	Middle: CH4	2437				
	13.5	High: CH7	2452				

Note: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

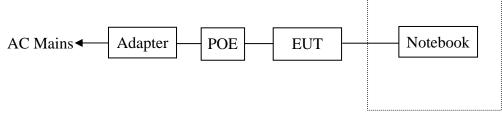
Note: This EUT can powered from adapter directly or from adapter though POE, according to exploratory test, for radiated emissions and power line conducted emissions test, when powered by POE will have worse emissions, so the final test for radiated emissions and power line conducted emissions test were performed with POE. And for all other RF conducted tests, there is no any influence with that two power methods, so all the RF conducted tests were only performed without POE.

#### 2.3. Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number	Approved type		
1	Notahooli	-	DELL	PP09S	N/A	☑FCC DoC ☑BSMI ID: R41108		
1	Notebook	Power Cord: Unshielded, Detachabled, 1.8m Power Adapter: Manufacturer: DELL, M/N: LA65NS1-00						
		Cable: Unshielded, Detachabled, 4.0m(Bond one ferrite core)						

FCC ID: WWMAN401XV1 page 2-3

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



Outside the chamber

#### 2.5. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.

No. 6, Ke Feng Rd., 52 Block, Shenzhen

Science & Industrial Park, Nantou, Shenzhen, Guangdong, China

3m Anechoic Chamber : Mar.31, 2009 File on Federal

Communication Commission Registration Number: 90454

3m & 10m Anechoic Chamber : Dec. 30, 2009 File on Federal

Communication Commission Registration Number: 794232

EMC Lab. : Certificated by Industry Canada

Registration Number: IC 5183A-1

Jul. 03, 2009

: 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



FCC ID:WWMAN401XV1 page 2-4

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

Test Item	Uncertainty
Uncertainty for Conduction emission test	3.64 dB (9kHz to 150kHz
in No. 1 Conduction	3.22 dB(150kHz to 30MHz)
Uncertainty for Radiation Emission test	4.20 dB (Polarize: V)
in 3m chamber	4.66 dB (Polarize: H)
Uncertainty for Radiated Spurious	2.70 dB(Bilog antenna 30M~1000MHz)
Emission test in RF chamber	2.27 dB(Horn antenna 1000M~12750MHz)
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 Frequency range test	$1x10^{-9}$
Uncertainty for Bandwidth test	$1x10^{-9}$
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and	0.3℃
humidity	2%



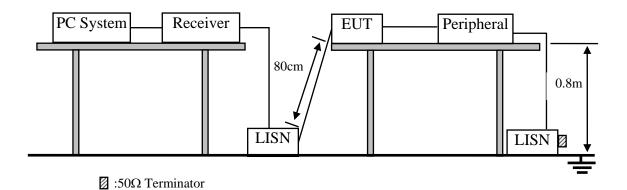
FCC ID:WWMAN401XV1 page 3-1

# 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.	Terminator	Hubersuhner	50Ω	No. 2	May.08, 10	1 Year
5.	RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.08, 10	1Year
6.	Coaxial Switch	Anritsu	MP59B	M55367	May.08, 10	1 Year
7.	Passive Probe	Rohde & Schwarz	ESH2-Z3	299.7810.52	May.08, 10	1 Year
8.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 10	1 Year

# 3.2.Block Diagram of Test Setup



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

	Maximum RF Line Voltage				
Frequency	Quasi-Peak Level	Average Level			
	$dB(\mu V)$	$dB(\mu V)$			
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.

FCC ID: WWMAN401XV1 page 3-2

#### 3.4.Configuration of EUT on Test

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

3.4.1. 150M Wireless Lite-N Access Point (EUT)

Model Number : PW-AN401D / M-WA701ND

Serial Number : N/A

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

#### 3.5. Operating Condition of EUT

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

3.5.2. Turned on the power of all equipment.

3.5.3. PC run test software to control EUT work in Tx mode.

#### 3.6.Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power Via Notebook connected to the power mains through a line impedance stabilization network (L.I.S.N. 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.

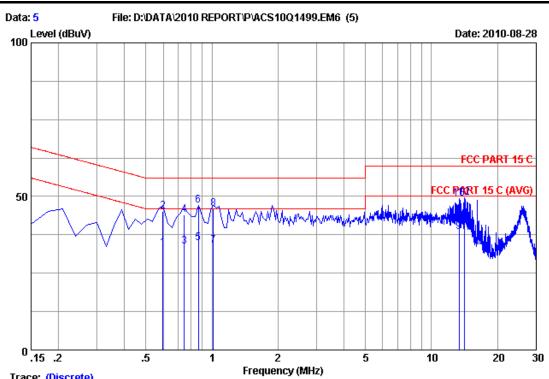
The bandwidth of test receiver (R & S ESHS10) is set at 10kHz.

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

#### 3.7. Power Line Conducted Emission Test Results

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

FCC ID: WWMAN401XV1 *page* 3-3



Trace: (Discrete)

:1#conduction Site no Data No

:\*\* 2010 ESH2-Z5 LINE Dis./Ant.

:FCC PART 15 C Limit

:29.5\*C/55% Env./Ins. Engineer :Sunny-lu

:150M Wireless Lite-N Access Point Power Rating :DC 9V From Adapter Input AC 230V/50Hz

Test Mode :Tx Mode

:PW-AN401D/M-WA701ND

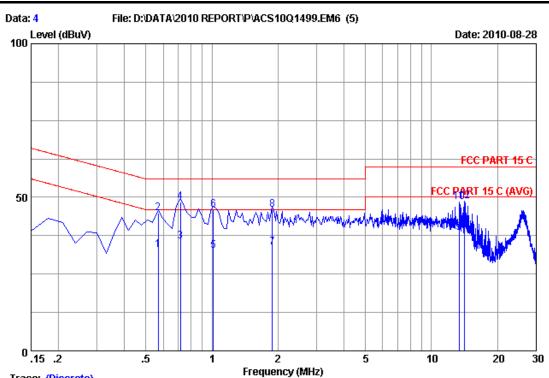
NO POE

		LISN	Cable		Emissio	n		
No	Freq	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	0.59775	0.25	9.88	22.89	33.02	46.00	12.98	Average
2	0.59775	0.25	9.88	34.98	45.11	56.00	10.89	QP
3	0.74700	0.25	9.89	23.56	33.70	46.00	12.30	Average
4	0.74700	0.25	9.89	33.92	44.06	56.00	11.94	QP
5	0.86640	0.23	9.89	24.63	34.75	46.00	11.25	Average
6	0.86640	0.23	9.89	37.04	47.16	56.00	8.84	QP
7	1.016	0.22	9.89	23.79	33.90	46.00	12.10	Average
8	1.016	0.22	9.89	35.90	46.01	56.00	9.99	QP
9	13.374	0.49	10.02	28.02	38.53	50.00	11.47	Average
10	13.374	0.49	10.02	38.85	49.36	60.00	10.64	QP
11	14.150	0.50	10.03	30.58	41.11	50.00	8.89	Average
12	14.150	0.50	10.03	39.15	49.68	60.00	10.32	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.

> 2. If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

FCC ID: WWMAN401XV1 page 3-4



Trace: (Discrete)

Site no :1#conduction Data No

:\*\* 2010 ESH2-Z5 NEUTRAL Dis./Ant.

Limit :FCC PART 15 C

Env./Ins. :29.5\*C/55% Engineer :Sunny-lu

EUT :150M Wireless Lite-N Access Point Power Rating :DC 9V From Adapter Input AC 230V/50Hz

Test Mode :Tx Mode

:PW-AN401D/M-WA701ND

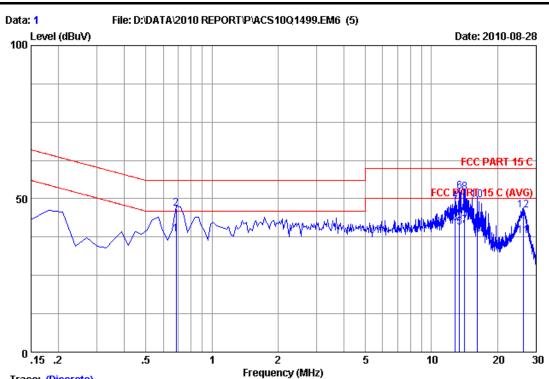
NO POE

	_	LISN	Cable		Emissio			_
No	Freq	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	0.56790	0.23	 9.88	22.80	32.91	46.00	13.09	Average
2	0.56790	0.23	9.88	34.80	44.91	56.00	11.09	QP
3	0.71715	0.24	9.89	25.45	35.58	46.00	10.42	Average
4	0.71715	0.24	9.89	38.41	48.54	56.00	7.46	QP
5	1.016	0.25	9.89	22.48	32.62	46.00	13.38	Average
6	1.016	0.25	9.89	35.87	46.01	56.00	9.99	QP
7	1.881	0.26	9.90	23.45	33.61	46.00	12.39	Average
8	1.881	0.26	9.90	35.89	46.05	56.00	9.95	QP
9	13.374	0.55	10.02	27.75	38.32	50.00	11.68	Average
10	13.374	0.55	10.02	37.79	48.36	60.00	11.64	QP
11	14.150	0.56	10.03	29.42	40.01	50.00	9.99	Average
12	14.150	0.56	10.03	38.09	48.68	60.00	11.32	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit)

<sup>2.</sup> If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

FCC ID: WWMAN401XV1 *page* 3-1



Trace: (Discrete)

Site no :1#conduction Data No

:\*\* 2010 ESH2-Z5 LINE Dis./Ant.

Limit :FCC PART 15 C

Env./Ins. :29.5\*C/55% Engineer :Sunny-lu

:150M Wireless Lite-N Access Point EUT Power Rating :DC 9V From Adapter Input AC 120V/60Hz

Test Mode :Tx Mode

:PW-AN401D/M-WA701ND

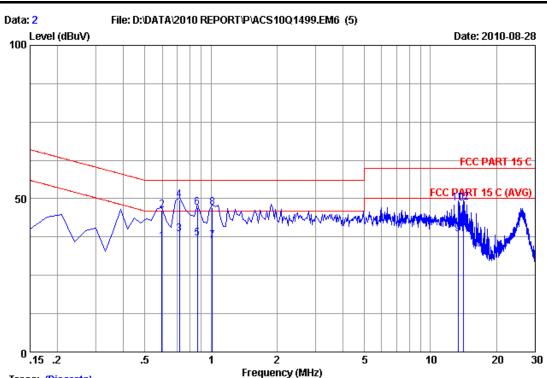
Add POE

		LISN	Cable		Emissio	n		
No	Freq	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	 0.68730	0.25	 9.89	28.25	38.39	46.00	7.61	Average
_								_
2	0.68730	0.25	9.89	36.53	46.67	56.00	9.33	QP
3	12.806	0.47	10.02	31.45	41.94	50.00	8.06	Average
4	12.806	0.47	10.02	38.94	49.43	60.00	10.57	QP
5	13.433	0.49	10.02	30.28	40.79	50.00	9.21	Average
6	13.433	0.49	10.02	41.83	52.34	60.00	7.66	QP
7	14.150	0.50	10.03	30.83	41.36	50.00	8.64	Average
8	14.150	0.50	10.03	41.55	52.08	60.00	7.92	QP
9	16.209	0.51	10.04	28.58	39.13	50.00	10.87	Average
10	16.209	0.51	10.04	39.15	49.70	60.00	10.30	QP
11	26.120	0.92	10.13	26.74	37.79	50.00	12.21	Average
12	26.120	0.92	10.13	35.08	46.13	60.00	13.87	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.

> 2. If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.

FCC ID: WWMAN401XV1 page 3-2



Trace: (Discrete)

Site no :1#conduction Data No :2

Dis./Ant. :\*\* 2010 ESH2-Z5 NEUTRAL

Limit :FCC PART 15 C

Env./Ins. :29.5\*C/55% Engineer :Sunny-lu

EUT :150M Wireless Lite-N Access Point Power Rating :DC 9V From Adapter Input AC 120V/60Hz

Test Mode :Tx Mode

:PW-AN401D/M-WA701ND

Add POE

		LISN	Cable		Emissio	n		
No	Freq	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	0.59775	0.23	9.88	25.89	36.00	46.00	10.00	Average
2	0.59775	0.23	9.88	36.00	46.11	56.00	9.89	QP
3	0.71715	0.24	9.89	28.42	38.55	46.00	7.45	Average
4	0.71715	0.24	9.89	39.41	49.54	56.00	6.46	QP
5	0.86640	0.25	9.89	26.95	37.09	46.00	8.91	Average
6	0.86640	0.25	9.89	37.02	47.16	56.00	8.84	QP
7	1.016	0.25	9.89	25.96	36.10	46.00	9.90	Average
8	1.016	0.25	9.89	36.87	47.01	56.00	8.99	QP
9	13.374	0.55	10.02	27.75	38.32	50.00	11.68	Average
10	13.374	0.55	10.02	37.79	48.36	60.00	11.64	QP
11	14.150	0.56	10.03	28.84	39.43	50.00	10.57	Average
12	14.150	0.56	10.03	38.09	48.68	60.00	11.32	QP

Remarks: 1.Emission Level=LISN Factor+Cable Loss(Include 10dB pulse limit) +Reading.

<sup>2.</sup>If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.



FCC ID:WWMAN401XV1 page 4-1

#### 4. RADIATED EMISSION TEST

#### 4.1.Test Equipment

Frequency rang: 30~1000MHz

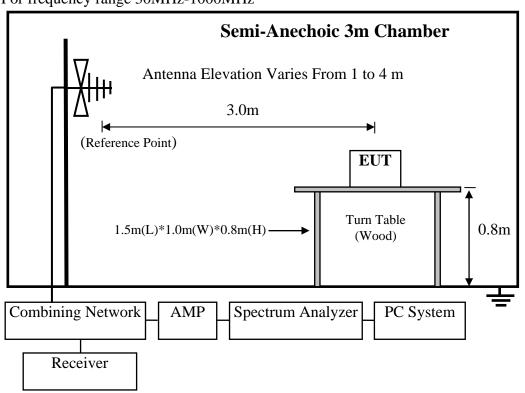
	<u>, , , , , , , , , , , , , , , , , , , </u>					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.05,09	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 10	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 10	1 Year
4	Amplifier	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	9607-4877	Nov.25, 09	1.5 Year
3	Horn Antenna	EMCO	3116	00060089	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	29091/2	May.08, 10	1 Year

# 4.2.Block Diagram of Test Setup

For frequency range 30MHz-1000MHz





FCC ID: WWMAN401XV1 page 4-2

# Semi-Anechoic 3m Chamber Antenna Elevation Varies From 1 to 4 m 3.0m (Reference Point) Turn Table (Wood) Combining Network AMP Spectrum Analyzer PC System Receiver

#### 4.3. Radiated Emission Limit

#### 4.3.1. 15.209 limits

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

Remark : (1) Emission level  $dB\mu V = 20 \log Emission level \mu V/m$ 

- (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.



FCC ID: WWMAN401XV1 page 4-3

#### 4.3.2. 15.205 Restricted bands of operation

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

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

#### 4.4.EUT Configuration on Test

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

4.4.1. 150M Wireless Lite-N Access Point (EUT)

Model Number : PW-AN401D / M-WA701ND

Serial Number : N/A

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

#### 4.5. Operating Condition of EUT

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

4.5.2. Turned on the power of all equipment.

4.5.3. PC run test software to control EUT work in test mode.

#### 4.6.Test Procedure

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

FCC ID: WWMAN401XV1 page 4-4

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.

#### 4.7. Radiated Emission Test Results

#### PASS.

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

Note: For emissions above 1GHz, if peak level comply with average limit, then the average level is deemed to comply with average limit.

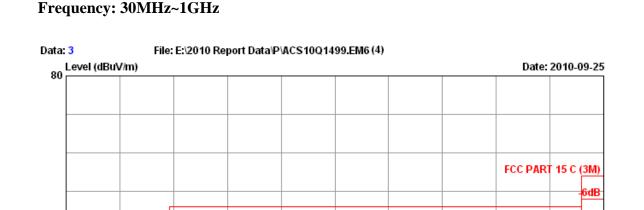
6

1000



40

FCC ID: WWMAN401XV1 *page* 4-5





Site no. : 3m Chamber Data no. : 3

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL

Limit : FCC PART 15 C (3M) Env. / Ins. : 24\*C/56% Engineer : Sunny-lu

million marketing.

EUT : 150M Wireless Lite-N Access Point Power rating : DC 9V From Adapter input AC 120V/50Hz

Test Mode : Tx Mode

M-WA701ND/PW-AN401D

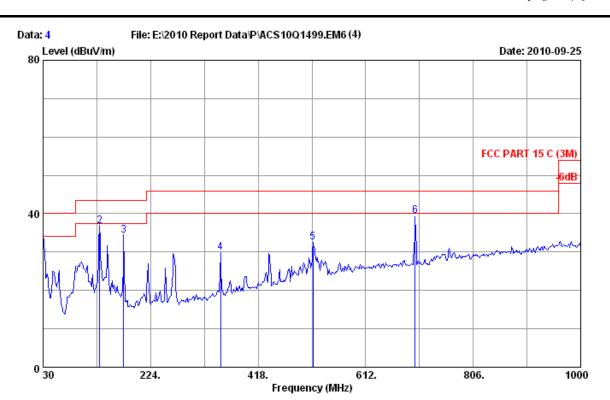
NO POE

No.	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	30.000	20.00	0.61	9.37	29.98	40.00	10.02	QP	
2	59.100	6.22	0.84	19.15	26.21	40.00	13.79	QP	
3	350.100	15.10	2.70	15.98	33.78	46.00	12.22	QP	
4	524.700	18.35	3.69	7.97	30.01	46.00	15.99	QP	
5	701.240	20.79	4.50	16.68	41.97	46.00	4.03	QP	
6	892.330	22.88	5.18	12.36	40.42	46.00	5.58	QP	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

FCC ID: WWMAN401XV1 page 4-6



: 3m Chamber Site no. Data no. : 4

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL

Limit : FCC PART 15 C (3M) Env. / Ins. : 24\*C/56% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point Power rating : DC 9V From Adapter input AC 120V/50Hz

Test Mode : Tx Mode

M-WA701ND/PW-AN401D

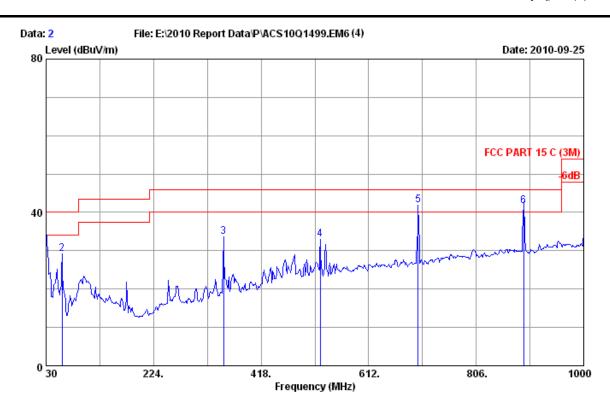
NO POE

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	_
1	30.000	20.00	0.61	13.28	33.89	40.00	6.11	QP	
2	131.850	12.16	1.13	23.50	36.79	43.50	6.71	QP	
3	175.500	9.65	1.44	23.24	34.33	43.50	9.17	QP	
4	350.100	15.10	2.70	11.95	29.75	46.00	16.25	QP	
5	516.940	18.37	3.64	10.46	32.47	46.00	13.53	QP	
6	701.240	20.79	4.50	14.20	39.49	46.00	6.51	QP	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

FCC ID: WWMAN401XV1 page 4-7



Site no. : 3m Chamber Data no. : 2

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : HORIZONTAL

Limit : FCC PART 15 C (3M)

Env. / Ins. : 24\*C/56% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power rating : DC 9V From Adapter input AC 120V/50Hz

Test Mode : Tx Mode

M-WA701ND/PW-AN401D

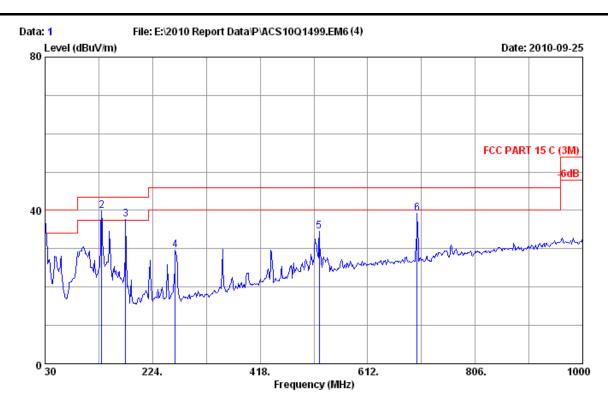
Add POE

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	30.000	20.00	0.61	14.37	34.98	40.00	5.02	QP	
2	59.100	6.22	0.84	22.08	29.14	40.00	10.86	QP	
3	350.100	15.10	2.70	15.74	33.54	46.00	12.46	QP	
4	524.700	18.35	3.69	10.97	33.01	46.00	12.99	QP	
5	701.240	20.79	4.50	16.58	41.87	46.00	4.13	QP	
6	891.360	22.89	5.17	13.68	41.74	46.00	4.26	QP	

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.

FCC ID: WWMAN401XV1 page 4-8



Site no. : 3m Chamber Data no. : 1

Dis. / Ant. : 3m 2010 CBL6111C Ant. pol. : VERTICAL

Limit : FCC PART 15 C (3M)

Env. / Ins. : 24\*C/56% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point Power rating : DC 9V From Adapter input AC 120V/50Hz

Test Mode : Tx Mode

M-WA701ND/PW-AN401D

Add POE

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	20.00	0.61	15.46	36.07	40.00	3.93	QP
2	131.850	12.16	1.13	26.66	39.95	43.50	3.55	QP
3	175.500	9.65	1.44	26.48	37.57	43.50	5.93	QP
4	264.740	13.80	2.26	13.50	29.56	46.00	16.44	QP
5	524.700	18.35	3.69	12.47	34.51	46.00	11.49	QP
6	701.240	20.79	4.50	13.91	39.20	46.00	6.80	QP

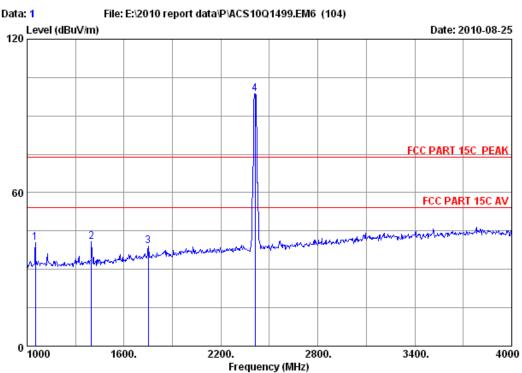
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

2. The emission levels that are 20dB below the official limit are not reported.



FCC ID: WWMAN401XV1 page 4-1





Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH1 2412MHz Tx

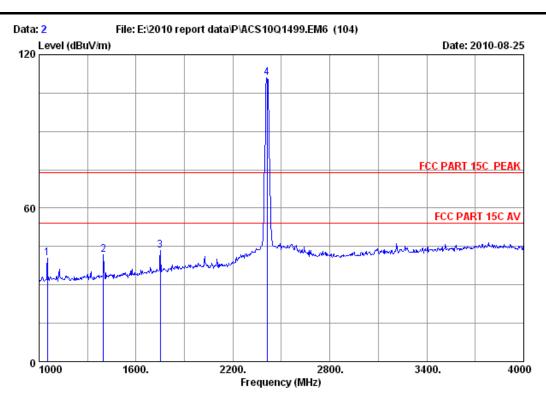
M/N : PW-AN401D/M-WA701ND

	Ant. Freq. Facto (MHz) (dB/r			_	Emission Level (dBuV/m)	Limit	_	Remark	
_	1051.000 25.5 1399.000 26.1				40.58 40.86	74.00 74.00	33.42 33.14	Peak Peak	
3	1750.000 27.8	7.33	36.29	40.31	39.15 98.60	74.00	34.85 -24.60	Peak Peak	
-			00.50	50.00	50.00		<b></b>	1	

#### 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.

FCC ID: WWMAN401XV1 page 4-2



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH1 2412MHz Tx

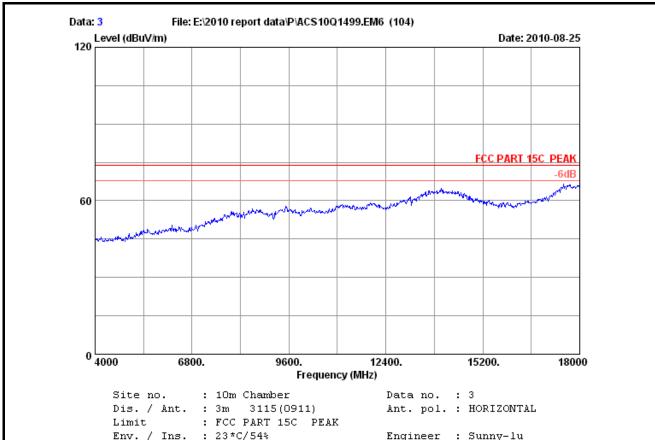
M/N : PW-AN401D/M-WA701ND

	-	Factor	loss			Emission Level (dBuV/m)		_	Remark	_
1	1051.000	25.50	5.60	37.34	46.82	40.58	74.00	33.42	Peak	
2	1399.000	26.19	6.49	36.69	45.94	41.93	74.00	32.07	Peak	
3	1750.000	27.80	7.33	36.29	44.53	43.37	74.00	30.63	Peak	
4	2412.000	29.45	8.72	35.95	108.67	110.89	74.00	-36.89	Peak	

#### Remarks

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

FCC ID: WWMAN401XV1 page 4-3

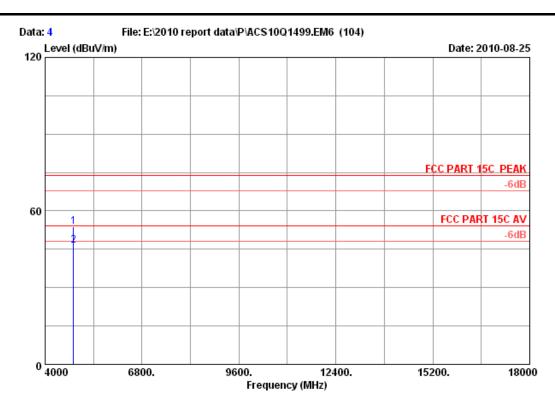


Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point : DC 9V From Adapter Input AC 120V/60Hz Power

: IEEE802.11b CH1 2412MHz Tx Test mode : PW-AN401D/M-WA701ND

FCC ID: WWMAN401XV1 page 4-4



Site no. : 10m 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

: 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH1 2412MHz Tx

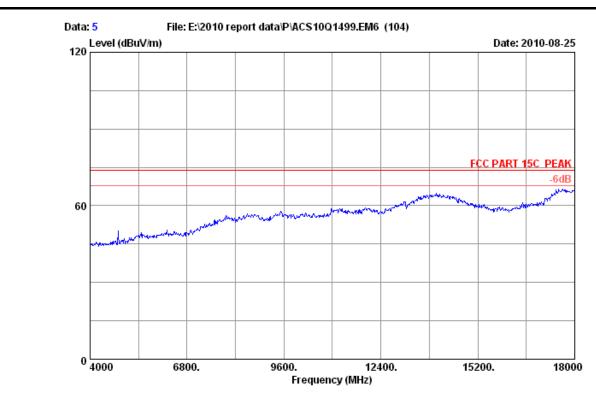
: PW-AN401D/M-WA701ND

	-	Factor	Factor	_	Emission Level (dBuV/m)		_	Remark
_	4824.000 4824.000		 		53.81 46.57	74.00 54.00	20.19 7.43	Peak 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.

FCC ID: WWMAN401XV1 page 4-5



Site no. : 10m Chamber Data no. : 5

Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

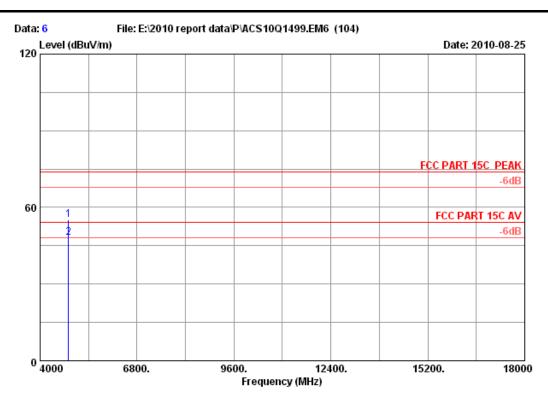
Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

FCC ID: WWMAN401XV1 page 4-6



Site no. : 10m 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

: 150M Wireless Lite-N Access Point EUT : DC 9V From Adapter Input AC 120V/60Hz Power

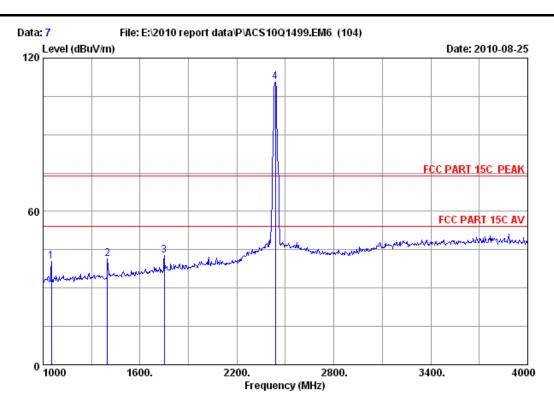
Test mode : IEEE802.11b CH1 2412MHz Tx

M/N: PW-AN401D/M-WA701ND

	-	Factor	Factor	_	Emission Level (dBuV/m)		_	Remark
_	4824.000 4824.000		 		55.09 48.29	74.00 54.00	18.91 5.71	Peak Average

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

FCC ID: WWMAN401XV1 page 4-7



Site no. : 10m 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

: 150M Wireless Lite-N Access Point EUT : DC 9V From Adapter Input AC 120V/60Hz Power

Test mode : IEEE802.11b CH6 2437MHz Tx

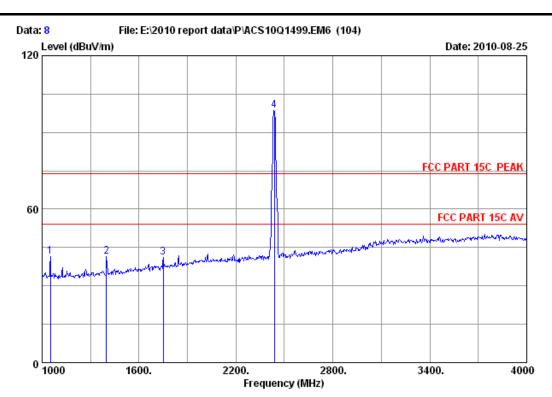
M/N: PW-AN401D/M-WA701ND

	Freq. Factor	loss		Reading	Emission Level (dBuV/m)		_	Remark	_
1	1051.000 25.50	5.60	37.34	46.53	40.29	74.00	33.71	Peak	
2	1399.000 26.19	6.49	36.69	45.62	41.61	74.00	32.39	Peak	
3	1750.000 27.80	7.33	36.29	43.99	42.83	74.00	31.17	Peak	
4	2437.000 29.47	8.77	36.06	108.49	110.67	74.00	-36.67	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.

FCC ID: WWMAN401XV1 page 4-8



Site no. : 10m Chamber Data no. : 8

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH6 2437MHz Tx

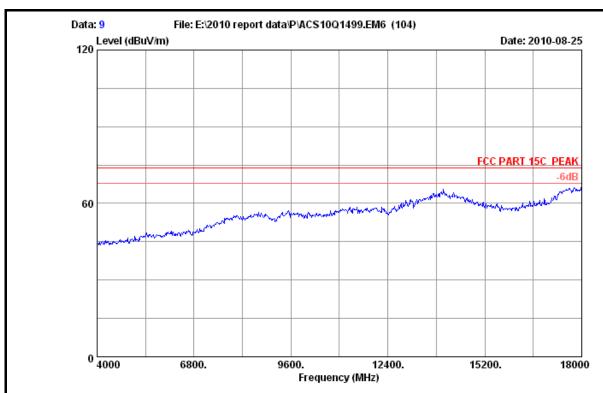
M/N : PW-AN401D/M-WA701ND

	-	Factor	loss			Emission Level (dBuV/m)		_	Remark
1	1051.000	25.50	5.60	37.34	47.72	41.48	74.00	32.52	Peak
2	1399.000	26.19	6.49	36.69	45.61	41.60	74.00	32.40	Peak
3	1750.000	27.80	7.33	36.29	42.42	41.26	74.00	32.74	Peak
4	2437.000	29.47	8.77	36.06	96.33	98.51	74.00	-24.51	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.

FCC ID: WWMAN401XV1 page 4-9



: 10m Chamber Site no.

Data no. : 9 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115 (0911)

: FCC PART 15C PEAK Limit

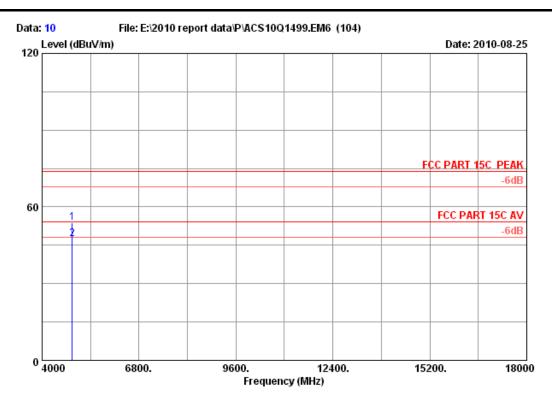
Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH6 2437MHz Tx

M/N: PW-AN401D/M-WA701ND

FCC ID: WWMAN401XV1 page 4-10



Data no. : 10 Site no. : 10m Chamber

Dis. / Ant. : 3m 3115 (0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point : DC 9V From Adapter Input AC 120V/60Hz Power

Test mode : IEEE802.11b CH6 2437MHz Tx

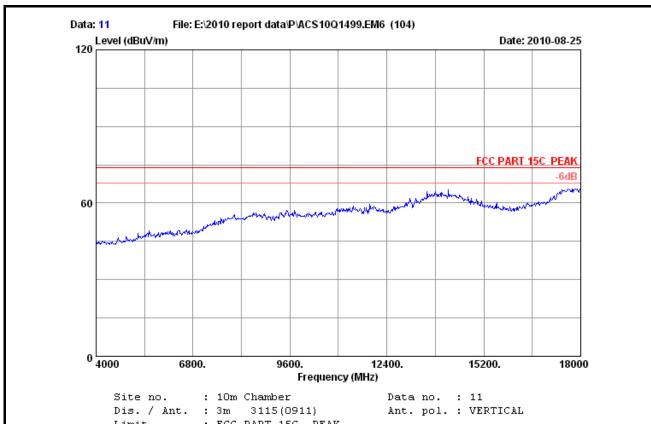
: PW-AN401D/M-WA701ND

	-	Factor	Factor	_	Emission Level (dBuV/m)		_	Remark
_	4874.000 4874.000		 		53.84 47.43	74.00 54.00	20.16 6.57	Peak 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.

FCC ID: WWMAN401XV1 page 4-11



: FCC PART 15C PEAK Limit

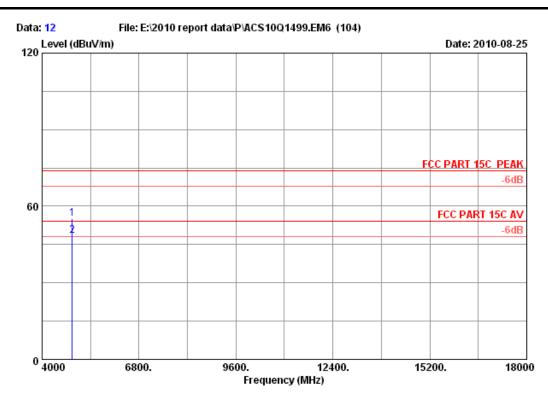
Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point : DC 9V From Adapter Input AC 120V/60Hz Power

Test mode : IEEE802.11b CH6 2437MHz Tx

M/N: PW-AN401D/M-WA701ND

FCC ID:WWMAN401XV1 page 4-12



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH6 2437MHz Tx

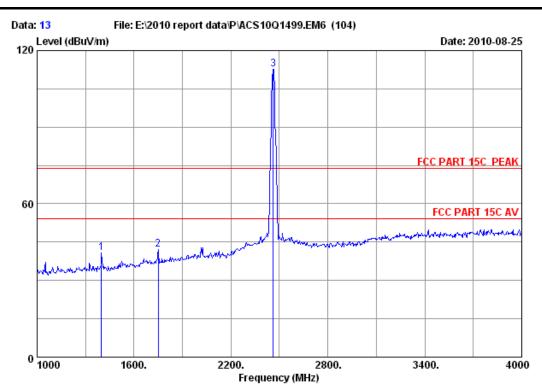
M/N : PW-AN401D/M-WA701ND

	-	Factor	Cable loss (dB)	Factor	_	Emission Level (dBuV/m)		_	Remark
_	4874.000 4874.000					55.10 48.43	74.00 54.00	18.90 5.57	Peak 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.

FCC ID:WWMAN401XV1 page 4-13



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH11 2462MHz Tx

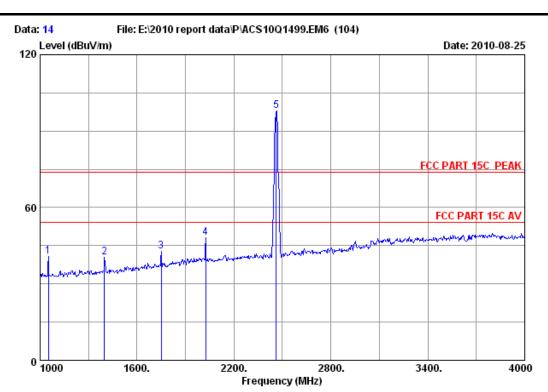
M/N : PW-AN401D/M-WA701ND

	Freq. Factor	Cable Amp. loss Factor (dB) (dB)	_		Limits Margin (dBuV/m) (dB)	Remark
1	1399.000 26.19	6.49 36.69	44.88	40.87	74.00 33.13	Peak
2	1750.000 27.80	7.33 36.29	43.33	42.17	74.00 31.83	Peak
3	2462.000 29.48	8.82 36.02	110.52	112.80	74.00 -38.80	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.

FCC ID: WWMAN401XV1 page 4-14



Site no. : 10m Chamber

Data no. : 14 Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115 (0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

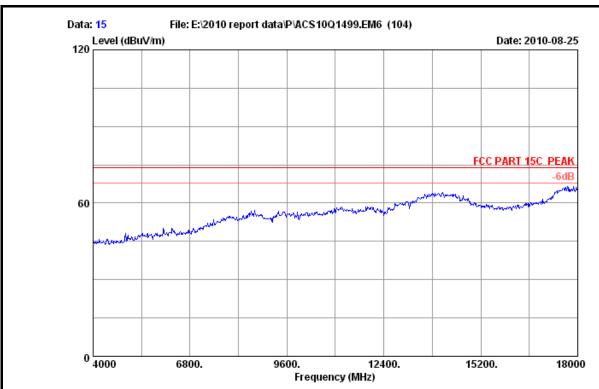
Test mode : IEEE802.11b CH11 2462MHz Tx

: PW-AN401D/M-WA701ND M/N

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)		Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m	Margin	Remark
1	1051.000	25.50	5.60	37.34	47.15	40.91	74.00	33.09	Peak
2	1399.000	26.19	6.49	36.69	44.37	40.36	74.00	33.64	Peak
3	1750.000	27.80	7.33	36.29	43.90	42.74	74.00	31.26	Peak
4	2026.000	29.21	7.97	36.12	47.12	48.18	74.00	25.82	Peak
5	2462.000	29.48	8.82	36.02	95.75	98.03	74.00	-24.03	Peak

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

FCC ID:WWMAN401XV1 page 4-15



Site no. : 10m Chamber Data no. : 15
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

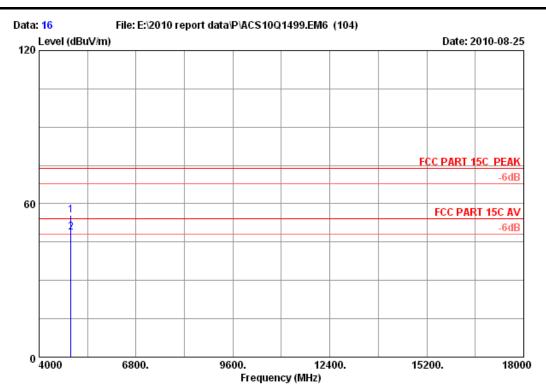
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH11 2462MHz Tx

FCC ID: WWMAN401XV1 page 4-16



Site no. : 10m 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 : 150M Wireless Lite-N Access Point : DC 9V From Adapter Input AC 120V/60Hz Power

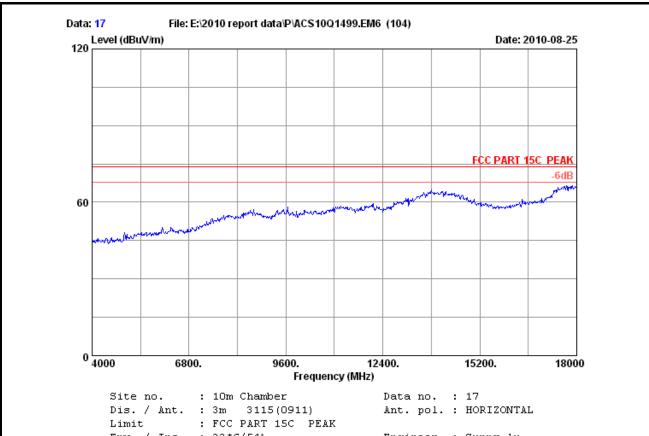
Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	Factor	Factor	Reading (dBuV)	Emission Level (dBuV/m)	Limits	_	Remark
4924.000 4924.000				55.34 48.84	74.00 54.00	18.66 5.16	Peak Average

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

FCC ID:WWMAN401XV1 page 4-17

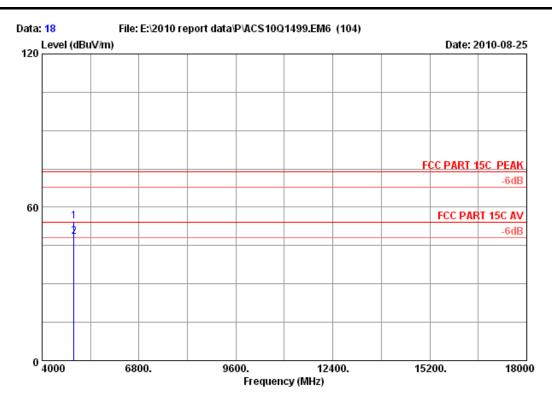


Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11b CH11 2462MHz Tx

FCC ID: WWMAN401XV1 page 4-18



Site no. : 10m Chamber Data no. : 18

Dis. / Ant. : 3m Ant. pol. : HORIZONTAL 3115(0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

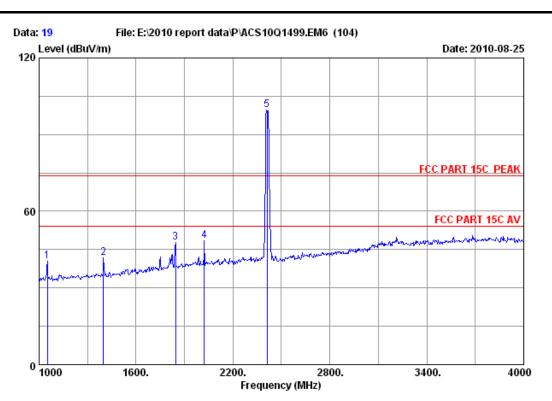
: 150M Wireless Lite-N Access Point EUT Power : DC 9V From Adapter Input AC 120V/60Hz

Power
Test mode : IEEE802.11b ----\*\*N : PW-AN401D/M-WA701ND : IEEE802.11b CH11 2462MHz Tx

	F		Cable	•	D	Emission	T	W =	D
	-				_	Level (dBuV/m)		_	Remark
	(Mnz)	(dB/m)	(dB)	(ab)	(abuv)	(dbuv/m)	(ubuv/m)	(ub)	
1	4924.000	34.49	12.50	35.34	42.68	54.33	74.00	19.67	Peak
2	4924.000	34.49	12.50	35.34	36.75	48.40	54.00	5.60	Average

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

FCC ID: WWMAN401XV1 page 4-19



Site no. : 10m Chamber Data no. : 19

Dis. / Ant. : 3m Ant. pol. : HORIZONTAL 3115 (0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

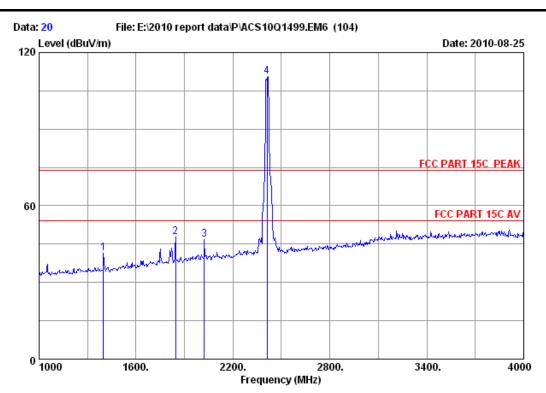
: IEEE802.11g CH1 2412MHz Tx

Test mode : IEEE802.11g cm. ...
\*\*/W : PW-AN401D/M-WA701ND

	Freq. (MHz)				Reading (dBuV)		Limit	s Margin m) (dB)	Remark
1	1051.000	25.50	5.60	37.34	46.65	40.41	74.00	33.59	Peak
2	1399.000	26.19	6.49	36.69	45.82	41.81	74.00	32.19	Peak
3	1846.000	28.36	7.51	36.23	48.27	47.91	74.00	26.09	Peak
4	2023.000	29.21	7.97	36.12	47.56	48.62	74.00	25.38	Peak
5	2412.000	29.45	8.72	35.95	97.43	99.65	74.00	-25.65	Peak

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

FCC ID: WWMAN401XV1 page 4-20



Site no. : 10m Chamber Data no. : 20
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

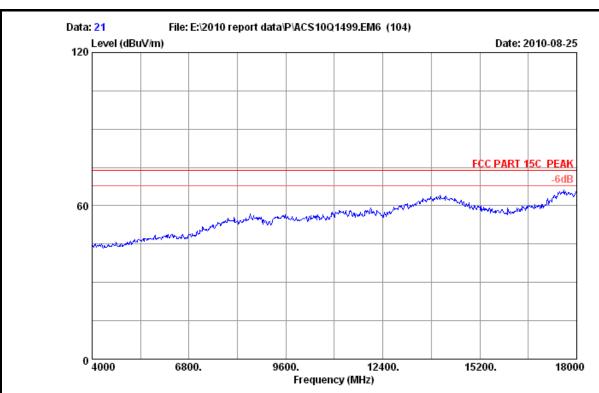
Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor	loss			Emission Level (dBuV/m)		_	Remark
1	1399.000	26.19	6.49	36.69	45.46	41.45	74.00	32.55	Peak
2	1846.000	28.36	7.51	36.23	48.02	47.66	74.00	26.34	Peak
3	2023.000	29.21	7.97	36.12	45.83	46.89	74.00	27.11	Peak
4	2412.000	29.45	8.72	35.95	108.43	110.65	74.00	-36.65	Peak

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

FCC ID:WWMAN401XV1 page 4-21



Site no. : 10m Chamber Data no. : 21

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

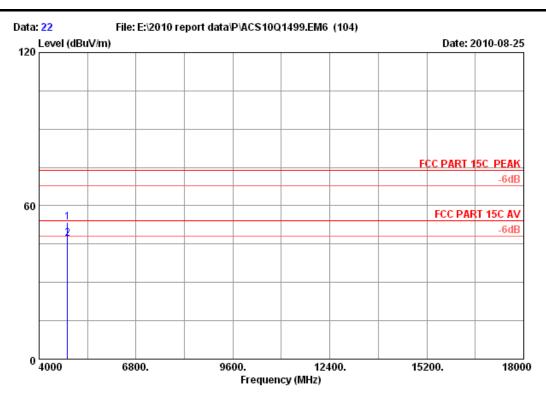
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH1 2412MHz Tx

FCC ID:WWMAN401XV1 page 4-22



Site no. : 10m Chamber Data no. : 22

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

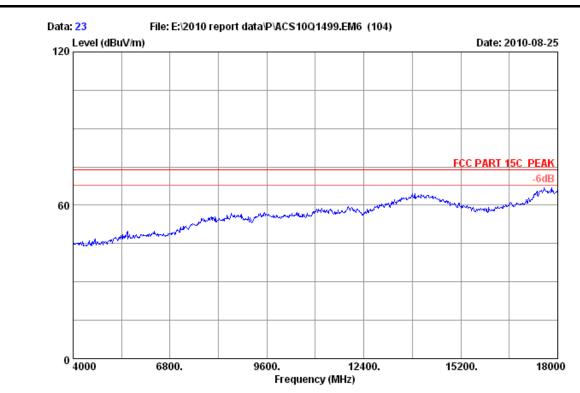
Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

		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	42.16	53.61	74.00	20.39	Peak
2	4824.000	34.32	12.38	35.25	35.84	47.29	54.00	6.71	Average

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

FCC ID: WWMAN401XV1 page 4-23



Site no. : 10m Chamber Data no. : 23
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

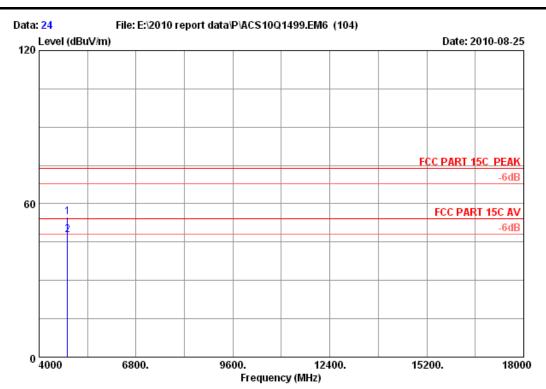
Limit : FCC PART 15C PEAK

Env. / Ins. : 23 \*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Power
Test mode : IEEE802.11g CH1 2412MHz Tx
M/N : PW-AN401D/M-WA701ND

FCC ID:WWMAN401XV1 page 4-24



Site no. : 10m Chamber Data no. : 24
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

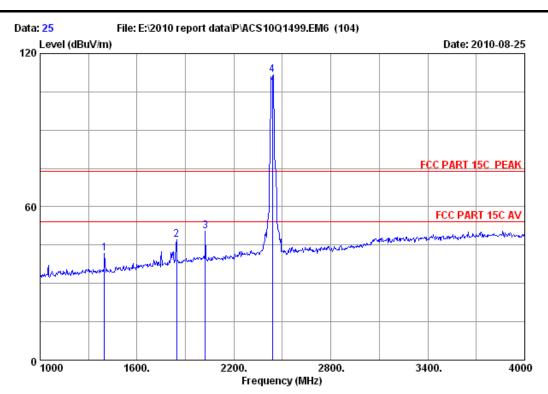
Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

		Ant.	Cable	Amp.		Emission			
	-				_	Level		_	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4824.000	34 32	12 38	35 25	43 25	54.70	74.00	19.30	Peak
_	1021.000	0 04.02	12.50	33.23	10.20	34.70	14.00	15.50	reak
2	4824.000	34.32	12.38	35.25	36.42	47.87	54.00	6.13	Average

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

FCC ID: WWMAN401XV1 page 4-25



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

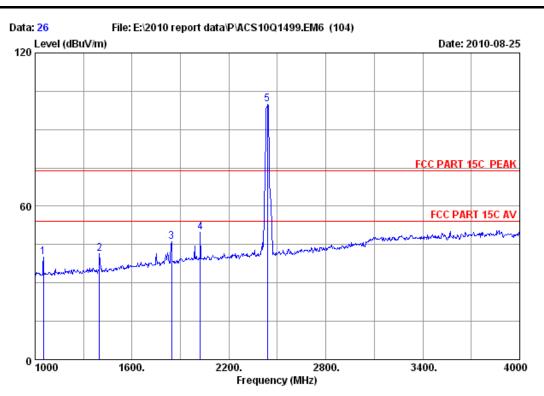
Test mode : IEEE802.11g CH6 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor				Level (dBuV/m)		_	Remark	
1	1399.000	26.19	6.49	36.69	45.89	41.88	74.00	32.12	Peak	
2	1846.000	28.36	7.51	36.23	47.36	47.00	74.00	27.00	Peak	
3	2023.000	29.21	7.97	36.12	49.38	50.44	74.00	23.56	Peak	
4	2437.000	29.47	8.77	36.06	109.47	111.65	74.00	-37.65	Peak	

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

FCC ID: WWMAN401XV1 page 4-26



Site no. : 10m Chamber Data no. : 26

Dis. / Ant. : 3m Ant. pol. : HORIZONTAL 3115 (0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

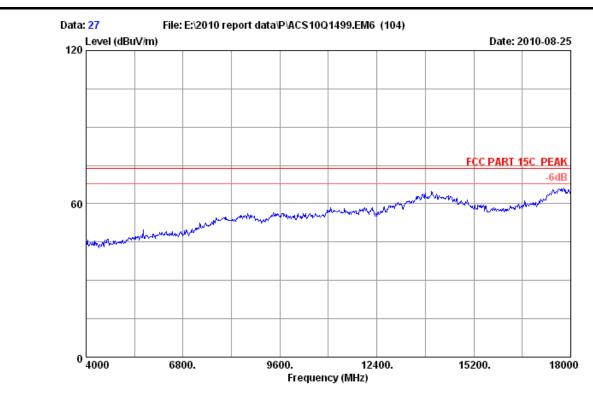
EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

Power
Test mode : IEEE802.lig cmc |
"/W : PW-AN401D/M-WA701ND : IEEE802.11g CH6 2437MHz Tx

	Freq. (MHz)			Amp. Factor (dB)	Reading (dBuV)		Limit	s Margin m) (dB)	Remark
1	1051.000	25.50	5.60	37.34	46.47	40.23	74.00	33.77	Peak
2	1399.000	26.19	6.49	36.69	45.44	41.43	74.00	32.57	Peak
3	1846.000	28.36	7.51	36.23	46.59	46.23	74.00	27.77	Peak
4	2023.000	29.21	7.97	36.12	48.74	49.80	74.00	24.20	Peak
5	2437.000	29.47	8.77	36.06	97.72	99.90	74.00	-25.90	Peak

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

FCC ID:WWMAN401XV1 page 4-27



Site no. : 10m Chamber Data no. : 27

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

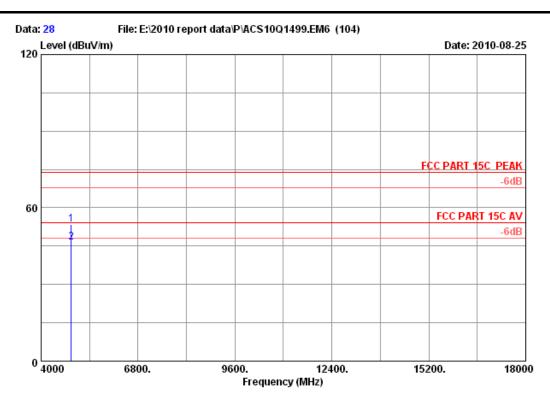
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH6 2437MHz Tx

FCC ID: WWMAN401XV1 page 4-28



Site no. : 10m Chamber Data no. : 28

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

Limit : FCC PART 15C PEAK Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point EUT : DC 9V From Adapter Input AC 120V/60Hz Power

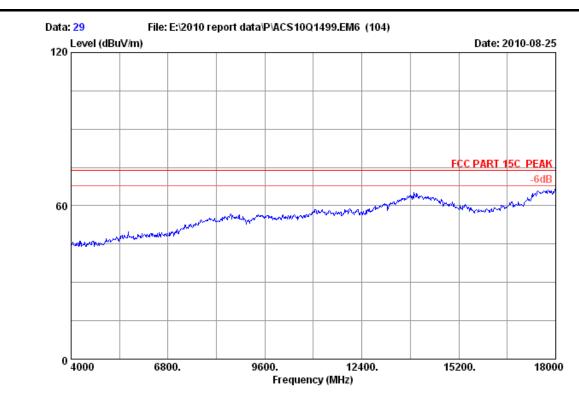
Test mode : IEEE802.11g CH6 2437MHz Tx

: PW-AN401D/M-WA701ND M/N

-	Factor	Cable loss (dB)	Factor	Reading (dBuV)	Emission Level (dBuV/m)	_	Remark
4874.000 4874.000					53.44 46.53	 20.56 7.47	Peak Average

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

FCC ID: WWMAN401XV1 page 4-29



Site no. : 10m Chamber Data no. : 29
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

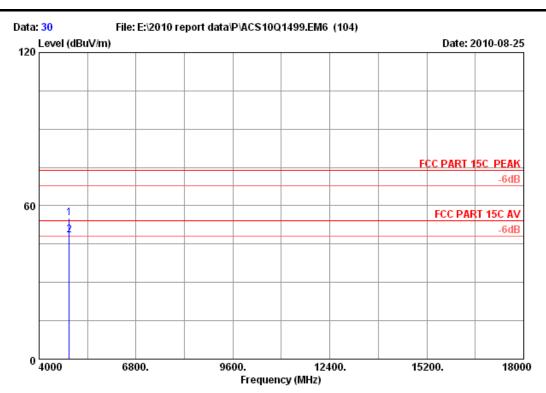
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH6 2437MHz Tx

FCC ID: WWMAN401XV1 page 4-30



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

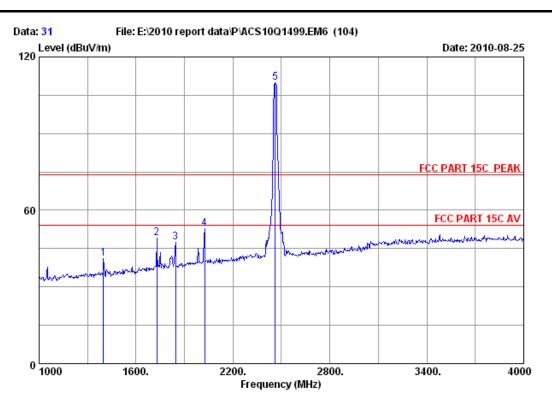
Test mode : IEEE802.11g CH6 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

		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	4874.000	34.41	12.44	35.36	43.67	55.16	74.00	18.84	Peak
2	4874.000	34.41	12.44	35.36	36.98	48.47	54.00	5.53	Average

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

FCC ID: WWMAN401XV1 page 4-31



Site no. : 10m Chamber Data no. : 31 Dis. / Ant. : 3m Ant. pol. : VERTICAL 3115(0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

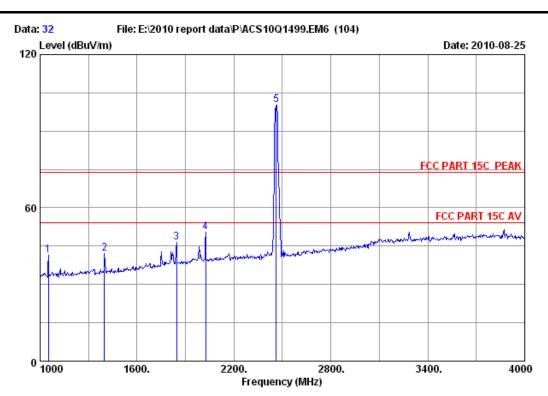
EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz Power
Test mode : IEEE802.11g cm.:
"/W : PW-AN401D/M-WA701ND

: IEEE802.11g CH11 2462MHz Tx

	Ant Freq. Facto (MHz) (dB/r	or loss			Emission Level (dBuV/m)		s Margin m) (dB)	Remark	
1	1399.000 26.3	19 6.49	36.69	45.25	41.24	74.00	32.76	Peak	
2	1729.000 27.	71 7.27	36.36	50.54	49.16	74.00	24.84	Peak	
3	1846.000 28.3	36 7.51	36.23	47.90	47.54	74.00	26.46	Peak	
4	2026.000 29.2	21 7.97	36.12	51.71	52.77	74.00	21.23	Peak	
5	2462.000 29.4	8.82	36.02	107.78	110.06	74.00	-36.06	Peak	

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

FCC ID: WWMAN401XV1 page 4-32



Site no. : 10m Chamber Data no. : 32

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH11 2462MHz Tx

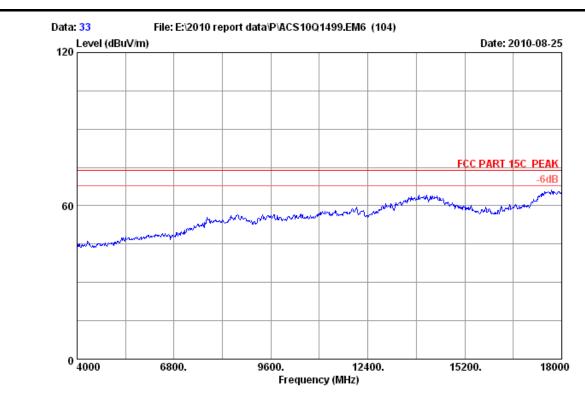
M/N : PW-AN401D/M-WA701ND

	-	Ant. Factor (dB/m)			Reading (dBuV)	Emission Level (dBuV/m)			Remark	
1	1051.000	25.50	5.60	37.34	47.68	41.44	74.00	32.56	Peak	
2	1399.000	26.19	6.49	36.69	46.04	42.03	74.00	31.97	Peak	
3	1846.000	28.36	7.51	36.23	46.75	46.39	74.00	27.61	Peak	
4	2026.000	29.21	7.97	36.12	49.54	50.60	74.00	23.40	Peak	
5	2462.000	29.48	8.82	36.02	97.91	100.19	74.00	-26.19	Peak	

#### -----

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

FCC ID: WWMAN401XV1 page 4-33



Site no. : 10m Chamber Data no. : 33
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

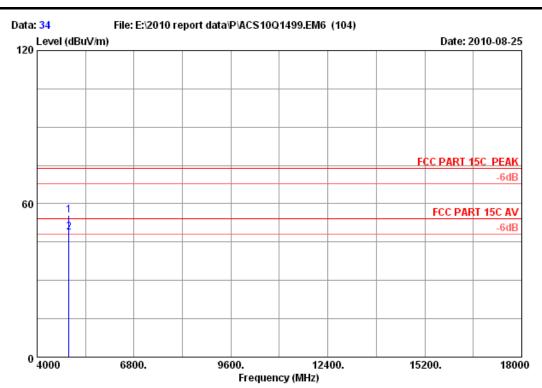
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH11 2462MHz Tx

FCC ID:WWMAN401XV1 page 4-34



Site no. : 10m Chamber Data no. : 34
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

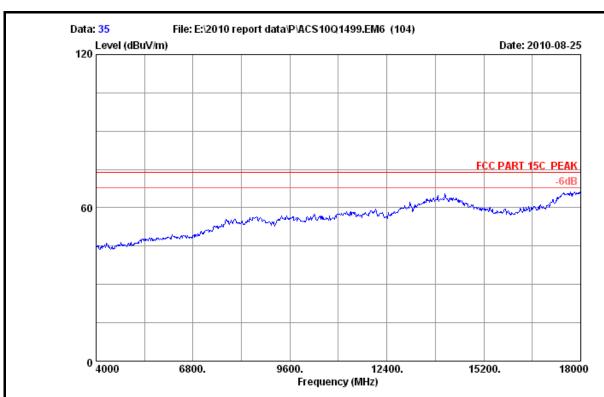
Test mode : IEEE802.11g CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

		Ant.	Cable	Amp.		Emission				
	-				_	Level (dBuV/m)		_	Remark	
1	4924.000	34.49	12.50	35.34	43.68	55.33	74.00	18.67	Peak	
2	4924.000	34.49	12.50	35.34	37.05	48.70	54.00	5.30	Average	

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

FCC ID:WWMAN401XV1 page 4-35



Site no. : 10m Chamber Data no. : 35

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

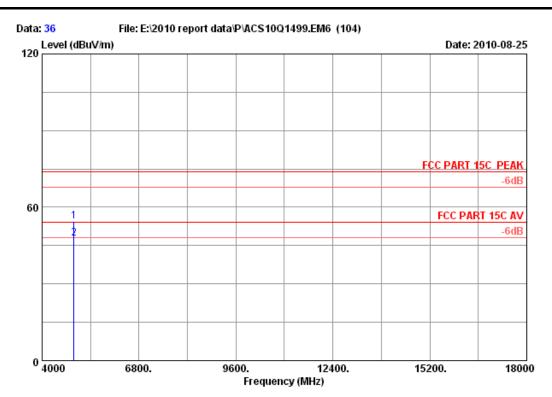
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH11 2462MHz Tx

FCC ID: WWMAN401XV1 page 4-36



Site no. : 10m Chamber Data no. : 36

Dis. / Ant. : 3m Ant. pol. : HORIZONTAL 3115(0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

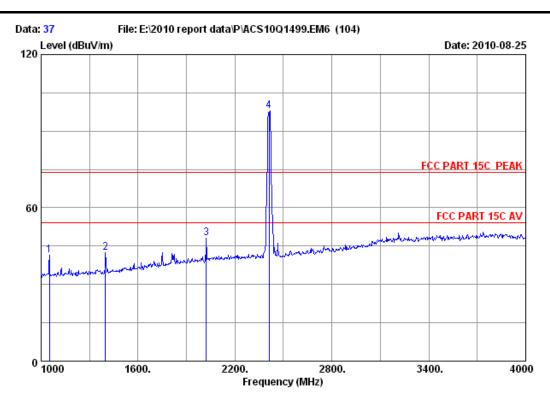
: 150M Wireless Lite-N Access Point EUT Power : DC 9V From Adapter Input AC 120V/60Hz

Power
Test mode : IEEE802.11g cm.:
"/W : PW-AN401D/M-WA701ND : IEEE802.11g CH11 2462MHz Tx

1 4924.000 34.49 12.50 35.34 42.69 54.34 74.00 19.66 Peak	-	Factor	Cable loss (dB)	Factor	_	Emission Level (dBuV/m)	_	Remark	
2 4924.000 34.49 12.50 35.34 36.15 47.80 54.00 6.20 Average							 		

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

FCC ID: WWMAN401XV1 page 4-37



Site no. : 10m 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

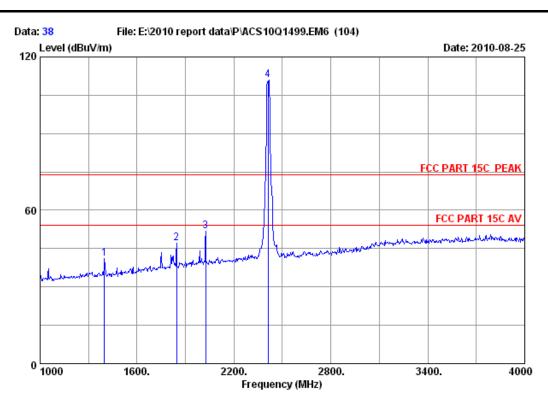
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor	loss			Emission Level (dBuV/m)		_	Remark
1	1051.000	25.50	5.60	37.34	47.55	41.31	74.00	32.69	Peak
2	1399.000	26.19	6.49	36.69	46.42	42.41	74.00	31.59	Peak
3	2023.000	29.21	7.97	36.12	47.20	48.26	74.00	25.74	Peak
4	2412.000	29.45	8.72	35.95	95.82	98.04	74.00	-24.04	Peak

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

FCC ID:WWMAN401XV1 page 4-38



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

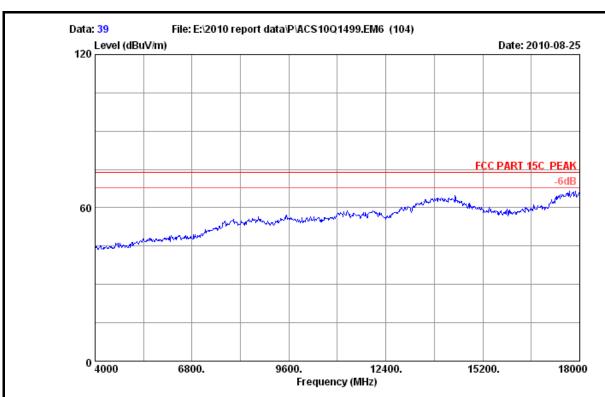
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	Ant. Freq. Factor (MHz) (dB/m)	Cable Amp. loss Factor (dB) (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits Margin (dBuV/m) (dB)	Remark
1	1399.000 26.19	6.49 36.69	45.17	41.16	74.00 32.84	Peak
2	1846.000 28.36	7.51 36.23	47.37	47.01	74.00 26.99	Peak
3	2026.000 29.21	7.97 36.12	50.69	51.75	74.00 22.25	Peak
4	2412.000 29.45	8.72 35.95	108.65	110.87	74.00 -36.87	Peak

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

FCC ID:WWMAN401XV1 page 4-39



Site no. : 10m Chamber Data no. : 39

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

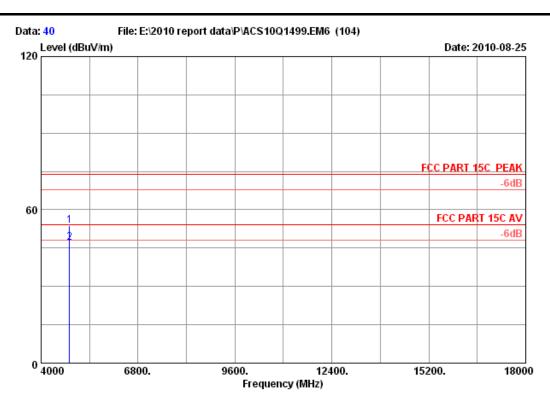
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

FCC ID:WWMAN401XV1 page 4-40



Site no. : 10m 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

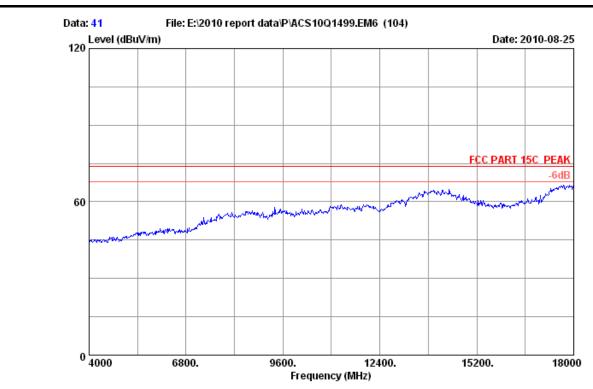
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

		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	42.36	53.81	74.00	20.19	Peak
2	4824.000	34.32	12.38	35.25	35.84	47.29	54.00	6.71	Average

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

FCC ID: WWMAN401XV1 page 4-41



Site no. : 10m Chamber Data no. : 41
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

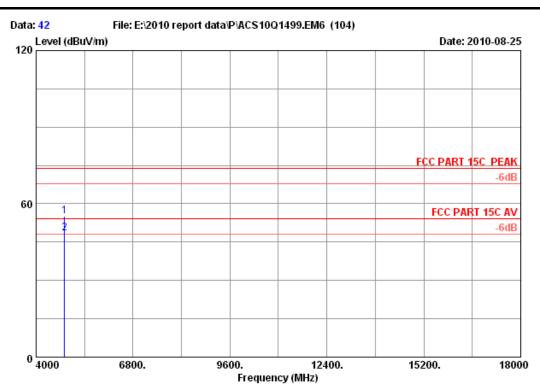
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

FCC ID:WWMAN401XV1 page 4-42



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

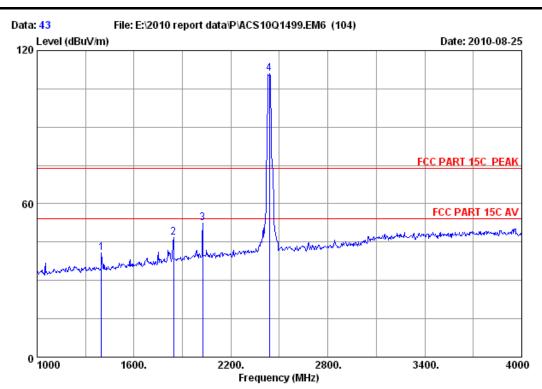
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

		Ant.	Cable	Amp.		Emission			
	-				_	Level (dBuV/m)		_	Remark
1	4824.000	34.32	12.38	35.25	43.62	55.07	74.00	18.93	Peak
2	4824.000	34.32	12.38	35.25	36.95	48.40	54.00	5.60	Average

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

FCC ID:WWMAN401XV1 page 4-43



Site no. : 10m 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

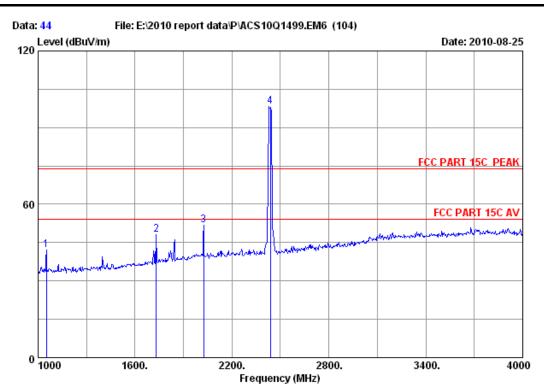
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH6 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor	loss			Emission Level (dBuV/m)		_	Remark
1	1399.000	26.19	6.49	36.69	44.67	40.66	74.00	33.34	Peak
2	1846.000	28.36	7.51	36.23	47.17	46.81	74.00	27.19	Peak
3	2026.000	29.21	7.97	36.12	51.58	52.64	74.00	21.36	Peak
4	2437.000	29.47	8.77	36.06	108.69	110.87	74.00	-36.87	Peak

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

FCC ID:WWMAN401XV1 page 4-44



Site no. : 10m Chamber Data no. : 44

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23 \*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

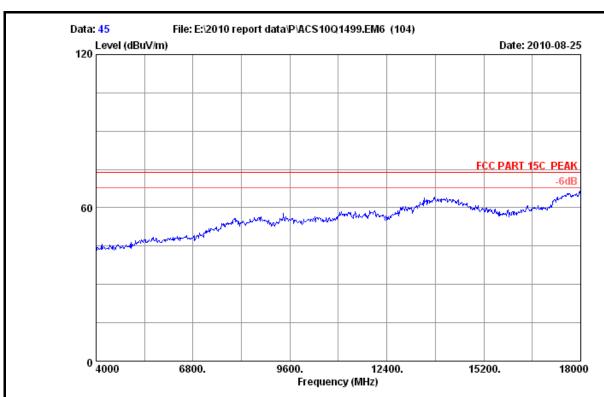
Test mode : IEEE802.11n HT20 CH6 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

	Ant. Freq. Factor (MHz) (dB/m)		Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)			Remark
1	1051.000 25.50	5.60	37.34	48.28	42.04	74.00	31.96	Peak
2	1732.000 27.71	7.27	36.36	49.55	48.17	74.00	25.83	Peak
3	2026.000 29.21	7.97	36.12	50.70	51.76	74.00	22.24	Peak
4	2437.000 29.47	8.77	36.06	96.22	98.40	74.00	-24.40	Peak

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

FCC ID: WWMAN401XV1 page 4-45



Site no. : 10m Chamber Data no. : 45

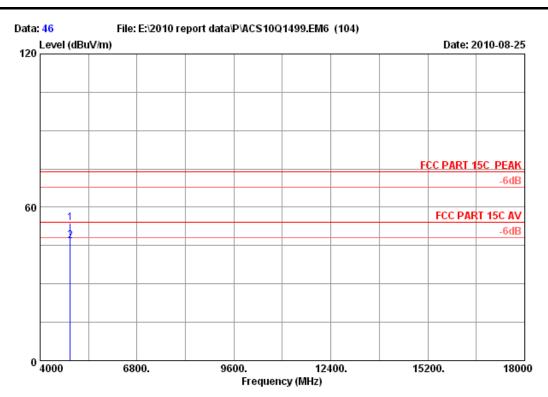
Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH6 2437MHz Tx

FCC ID: WWMAN401XV1 page 4-46



Site no. : 10m Chamber Data no. : 46

Dis. / Ant. : 3m Ant. pol. : HORIZONTAL 3115(0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

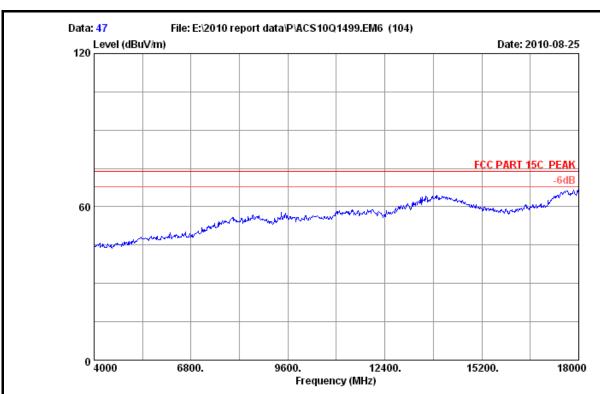
EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

Power
Test mode : IEEE802.lin mile
\*\*/W : PW-AN401D/M-WA701ND : IEEE802.11n HT20 CH6 2437MHz Tx

	-		Factor	Reading (dBuV)	Emission Level (dBuV/m)	Limits	_	Remark
_	4874.000 4874.000	 			53.84 46.67	74.00 54.00	20.16 7.33	Peak Average

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

FCC ID:WWMAN401XV1 page 4-47



Site no. : 10m Chamber Data no. : 47
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

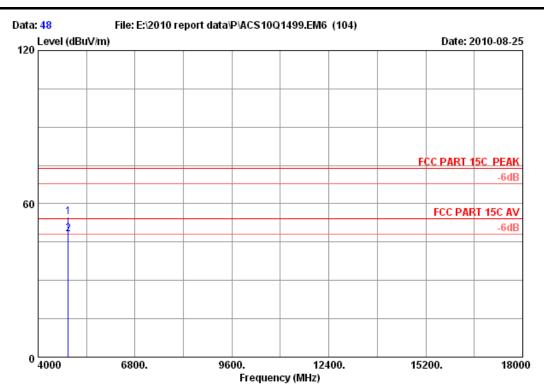
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11n HT20 CH6 2437MHz Tx

FCC ID: WWMAN401XV1 page 4-48



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

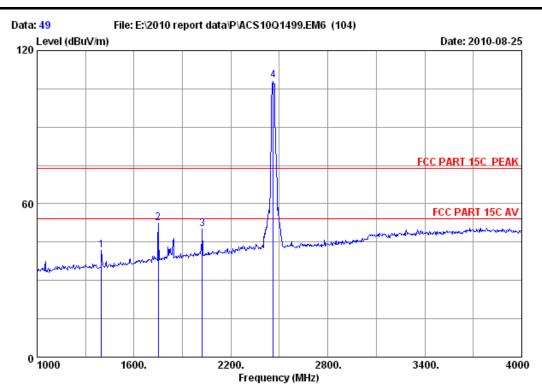
Test mode : IEEE802.11n HT20 CH6 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

		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	4874.000	34.41	12.44	35.36	43.24	54.73	74.00	19.27	Peak
2	4874.000	34.41	12.44	35.36	36.50	47.99	54.00	6.01	Average

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

FCC ID: WWMAN401XV1 page 4-49



Site no. : 10m 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

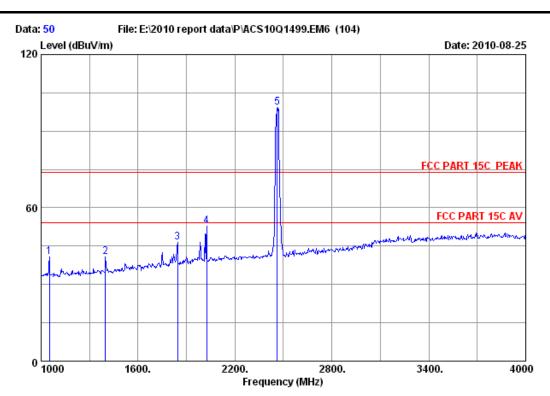
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor						Margin ) (dB)	Remark
1	1399.000	26.19	6.49	36.69	45.76	41.75	74.00	32.25	Peak
2	1750.000	27.80	7.33	36.29	53.49	52.33	74.00	21.67	Peak
3	2023.000	29.21	7.97	36.12	48.99	50.05	74.00	23.95	Peak
4	2462.000	29.48	8.82	36.02	105.86	108.14	74.00	-34.14	Peak

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

FCC ID: WWMAN401XV1 page 4-50



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

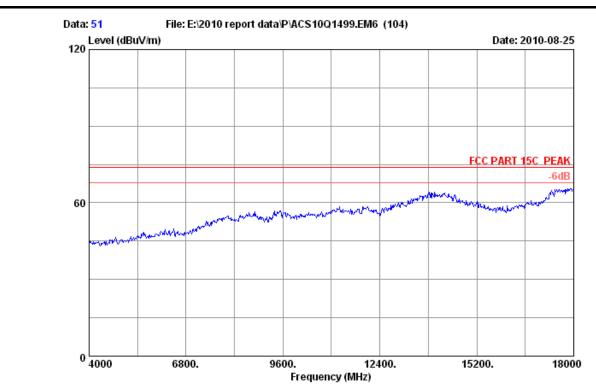
M/N : PW-AN401D/M-WA701ND

	-	Ant. Factor (dB/m)			Reading (dBuV)				Remark
1	1051.000	25.50	5.60	37.34	47.02	40.78	74.00	33.22	Peak
2	1399.000	26.19	6.49	36.69	44.92	40.91	74.00	33.09	Peak
3	1846.000	28.36	7.51	36.23	46.86	46.50	74.00	27.50	Peak
4	2026.000	29.21	7.97	36.12	51.86	52.92	74.00	21.08	Peak
5	2462.000	29.48	8.82	36.02	96.97	99.25	74.00	-25.25	Peak

#### Damarka:

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

FCC ID:WWMAN401XV1 page 4-51



Site no. : 10m Chamber Data no. : 51
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

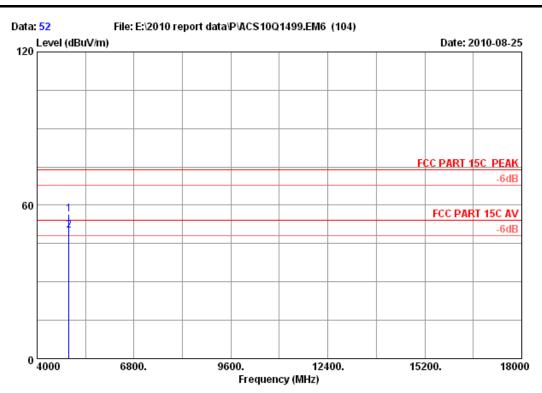
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

FCC ID: WWMAN401XV1 page 4-52



Site no. : 10m Chamber Data no. : 52 Dis. / Ant. : 3m Ant. pol. : VERTICAL 3115(0911)

: FCC PART 15C PEAK Limit

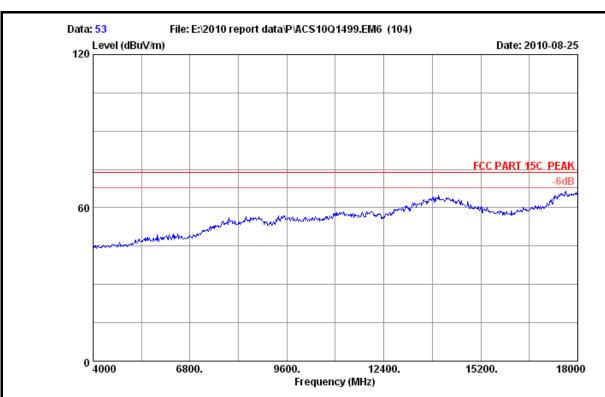
Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz Power
Test mode : IEEE802.11n ....
\*\*N : PW-AN401D/M-WA701ND : IEEE802.11n HT20 CH11 2462MHz Tx

		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss		_	Level		_	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4924.000	34.49	12.50	35.34	44.96	56.61	74.00	17.39	Peak
2	4924.000	34.49	12.50	35.34	38.42	50.07	54.00	3.93	Average

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

FCC ID:WWMAN401XV1 page 4-53



Site no. : 10m Chamber Data no. : 53

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

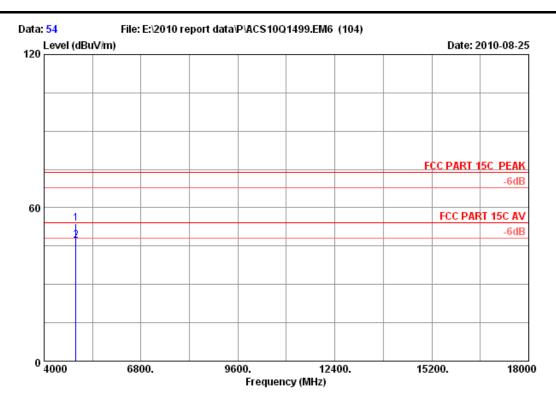
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

FCC ID: WWMAN401XV1 page 4-54



Site no. : 10m 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

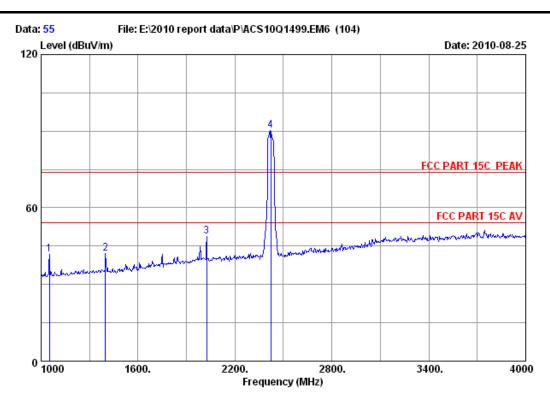
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

		Ant.	Cable	Amp.		Emission			
	-				_	Level		_	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	) (dB)	
1	4924.000	34.49	12.50	35.34	42.15	53.80	74.00	20.20	Peak
2	4924.000	34.49	12.50	35.34	35.48	47.13	54.00	6.87	Average

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

FCC ID: WWMAN401XV1 page 4-55



Site no. : 10m 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

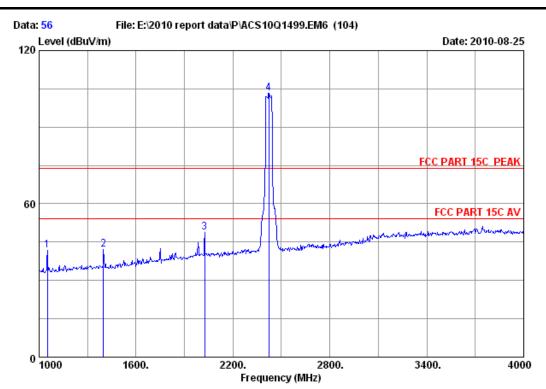
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND

	-				Reading (dBuV)	Emission Level (dBuV/m)		_	Remark
1	1051.000	25.50	5.60	37.34	47.88	41.64	74.00	32.36	Peak
2	1399.000	26.19	6.49	36.69	46.03	42.02	74.00	31.98	Peak
3	2026.000	29.21	7.97	36.12	47.62	48.68	74.00	25.32	Peak
4	2422.000	29.46	8.77	36.01	88.19	90.41	74.00	-16.41	Peak

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

FCC ID:WWMAN401XV1 page 4-56



Site no. : 10m Chamber Data no. : 56
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

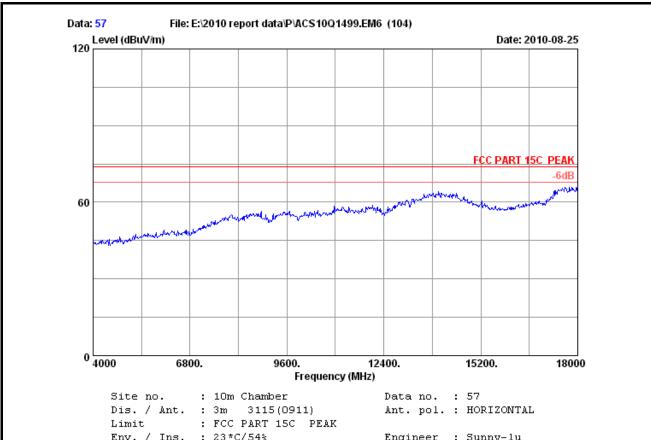
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor	loss			Emission Level (dBuV/m)		_	Remark
1	1051.000	25.50	5.60	37.34	47.88	41.64	74.00	32.36	Peak
2	1399.000	26.19	6.49	36.69	46.03	42.02	74.00	31.98	Peak
3	2026.000	29.21	7.97	36.12	47.62	48.68	74.00	25.32	Peak
4	2422.000	29.46	8.77	36.01	101.07	103.29	74.00	-29.29	Peak

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

FCC ID: WWMAN401XV1 page 4-57

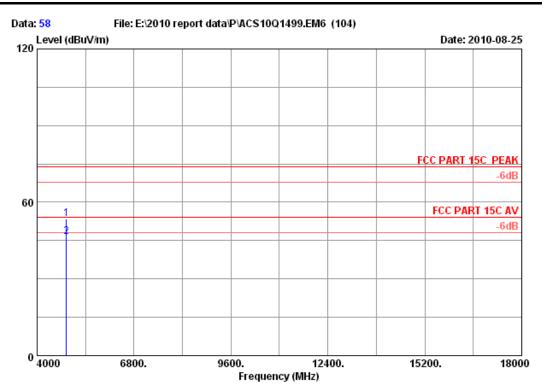


Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

: IEEE802.11n HT40 CH1 2422MHz Tx Test mode : PW-AN401D/M-WA701ND M/N

FCC ID: WWMAN401XV1 page 4-58



Site no. : 10m Chamber Data no. : 58

Dis. / Ant. : 3m Ant. pol. : HORIZONTAL 3115 (0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

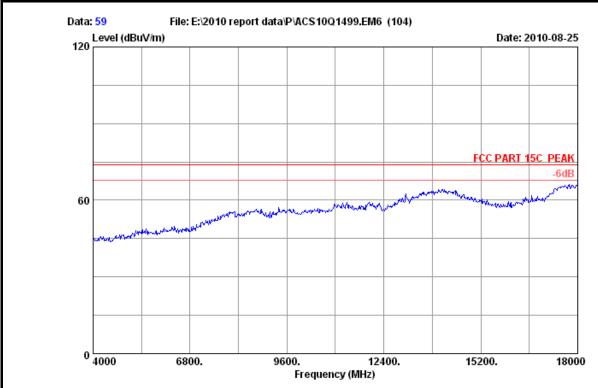
: 150M Wireless Lite-N Access Point EUT Power : DC 9V From Adapter Input AC 120V/60Hz Power
Test mode : IEEE802.lin n...
: PW-AN401D/M-WA701ND

: IEEE802.11n HT40 CH1 2422MHz Tx

-	Cable loss (dB)	Factor	Reading (dBuV)	Emission Level (dBuV/m)		_	Remark
4844.000 4844.000				53.64 46.43	74.00 54.00	20.36 7.57	Peak Average

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

FCC ID:WWMAN401XV1 page 4-59



Site no. : 10m Chamber Data no. : 59
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

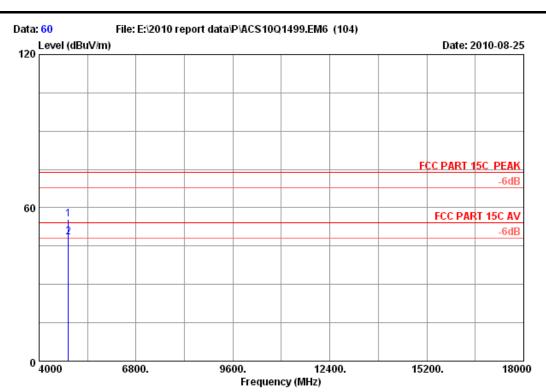
Limit : FCC PART 15C PEAK

Env. / Ins. : 23 \*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND



Site no. : 10m Chamber Data no. : 60
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

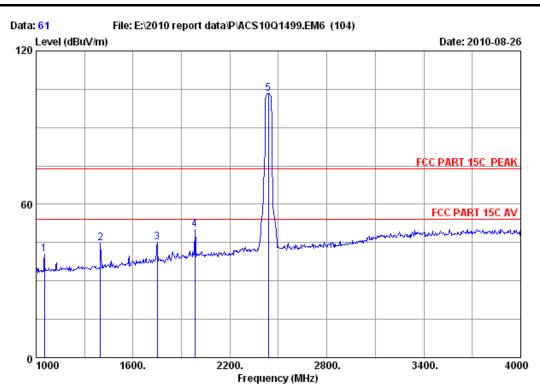
Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND

		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	4844.000	34.35	12.38	35.25	44.01	55.49	74.00	18.51	Peak
2	4844.000	34.35	12.38	35.25	36.87	48.35	54.00	5.65	Average

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

FCC ID:WWMAN401XV1 page 4-61



Site no. : 10m 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

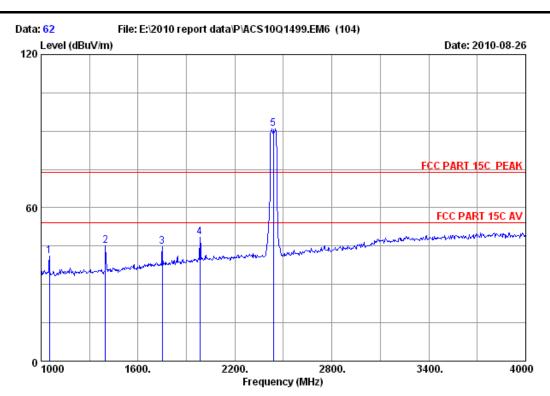
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH4 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

	Freq. (MHz)	Ant. Factor (dB/m)		Amp. Factor (dB)	Reading		Limit		Remark
1	1051.000	25.50	5.60	37.34	46.65	40.41	74.00	33.59	Peak
2	1399.000	26.19	6.49	36.69	48.93	44.92	74.00	29.08	Peak
3	1750.000	27.80	7.33	36.29	46.21	45.05	74.00	28.95	Peak
4	1984.000	29.11	7.87	36.06	49.12	50.04	74.00	23.96	Peak
5	2437.000	29.47	8.77	36.06	101.21	103.39	74.00	-29.39	Peak

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

FCC ID:WWMAN401XV1 page 4-62



Site no. : 10m 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

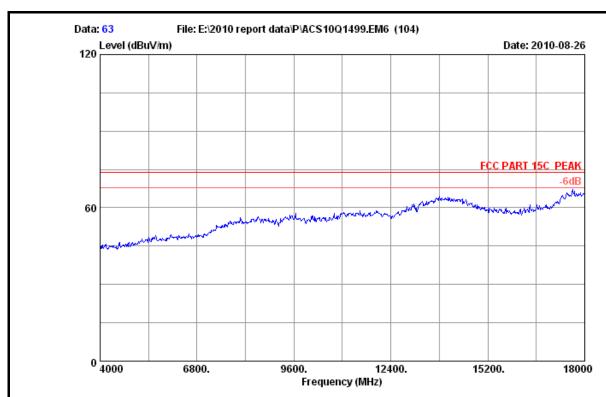
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH4 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Ant. Factor (dB/m)		Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/n		Remark
1	1051.000	25.50	5.60	37.34	47.47	41.23	74.00	32.77	Peak
2	1399.000	26.19	6.49	36.69	49.21	45.20	74.00	28.80	Peak
3	1750.000	27.80	7.33	36.29	45.96	44.80	74.00	29.20	Peak
4	1984.000	29.11	7.87	36.06	47.52	48.44	74.00	25.56	Peak
5	2437.000	29.47	8.77	36.06	88.64	90.82	74.00	-16.82	Peak

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

FCC ID: WWMAN401XV1 page 4-63



Site no. : 10m Chamber Data no. : 63

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

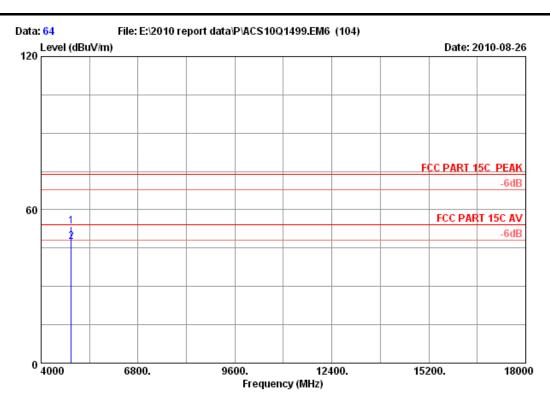
Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11n HT40 CH4 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

FCC ID: WWMAN401XV1 page 4-64



Site no. : 10m Chamber Data no. : 64

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

Limit : FCC PART 15C PEAK Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point EUT : DC 9V From Adapter Input AC 120V/60Hz Power

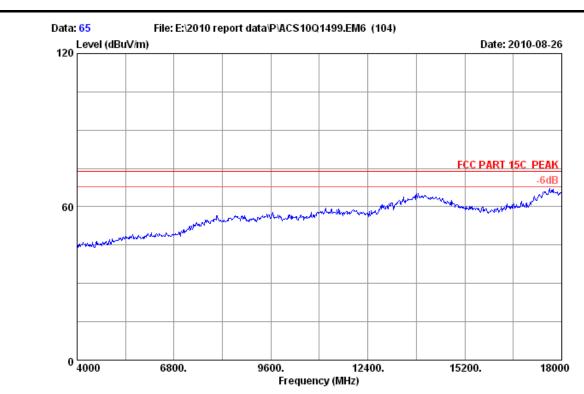
Test mode : IEEE802.11n HT40 CH4 2437MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor	Factor	Reading (dBuV)	Emission Level (dBuV/m)	Limits	_	Remark
_	4874.000 4874.000		 		53.51 47.40	74.00 54.00	20.49 6.60	Peak Average

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

FCC ID:WWMAN401XV1 page 4-65



Site no. : 10m Chamber Data no. : 65
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

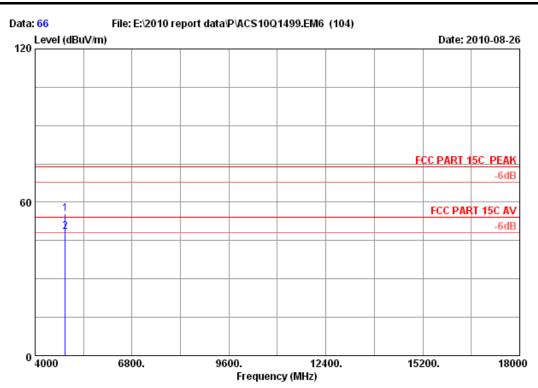
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11n HT40 CH4 2437MHz Tx

FCC ID: WWMAN401XV1 page 4-66



Site no. : 10m Chamber Data no. : 66 Dis. / Ant. : 3m Ant. pol. : VERTICAL 3115(0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

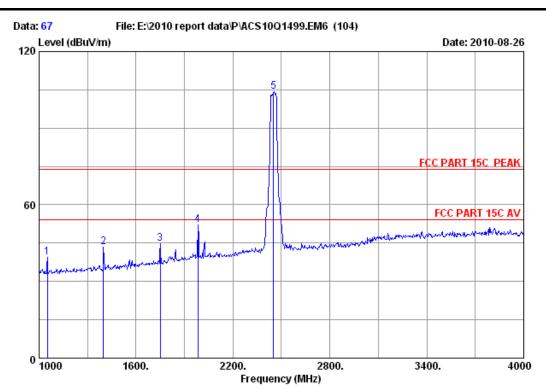
: 150M Wireless Lite-N Access Point EUT Power : DC 9V From Adapter Input AC 120V/60Hz Power
Test mode : IEEE802.lin m...
: PW-AN401D/M-WA701ND

: IEEE802.11n HT40 CH4 2437MHz Tx

-		Factor	Reading (dBuV)	Emission Level (dBuV/m)		_	Remark
4874.000 4874.000				55.33 48.43	74.00 54.00	18.67 5.57	Peak Average

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

FCC ID:WWMAN401XV1 page 4-67



Site no. : 10m 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

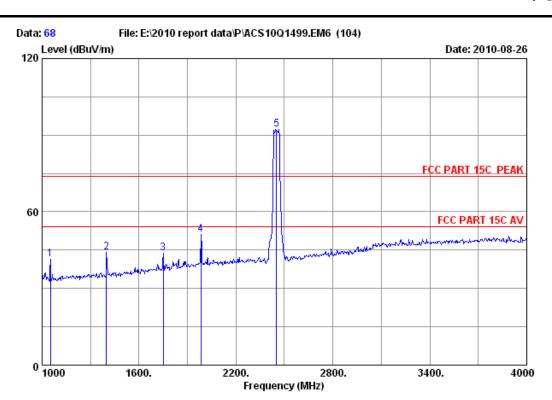
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Ant. Factor (dB/m)			Reading (dBuV)				Remark	
1	1051.000	25.50	5.60	37.34	45.79	39.55	74.00	34.45	Peak	
2	1399.000	26.19	6.49	36.69	47.41	43.40	74.00	30.60	Peak	
3	1750.000	27.80	7.33	36.29	46.08	44.92	74.00	29.08	Peak	
4	1984.000	29.11	7.87	36.06	51.24	52.16	74.00	21.84	Peak	
5	2452.000	29.47	8.82	36.06	102.12	104.35	74.00	-30.35	Peak	

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

FCC ID: WWMAN401XV1 page 4-68



Site no. : 10m Chamber Data no. : 68

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

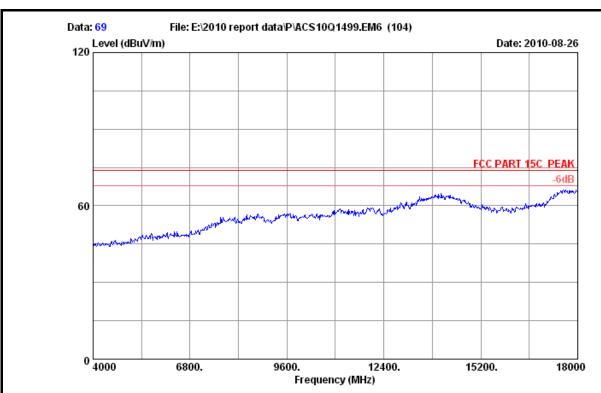
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

	Freq. (MHz)	Ant. Factor (dB/m)		Amp. Factor (dB)	Reading (dBuV)			s Margin n) (dB)	Remark
1	1051.000	25.50	5.60	37.34	47.57	41.33	74.00	32.67	Peak
2	1399.000	26.19	6.49	36.69	48.06	44.05	74.00	29.95	Peak
3	1750.000	27.80	7.33	36.29	44.99	43.83	74.00	30.17	Peak
4	1984.000	29.11	7.87	36.06	50.17	51.09	74.00	22.91	Peak
5	2452.000	29.47	8.82	36.06	90.08	92.31	74.00	-18.31	Peak

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

FCC ID:WWMAN401XV1 page 4-69



Site no. : 10m Chamber Data no. : 69
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

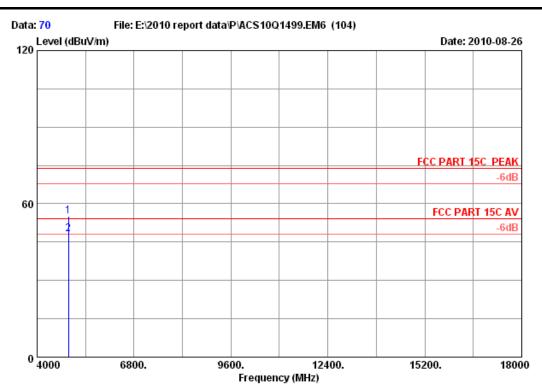
Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

FCC ID:WWMAN401XV1 page 4-70



Site no. : 10m Chamber Data no. : 70
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

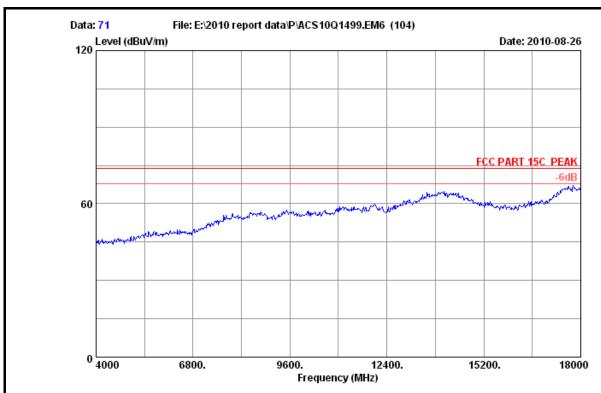
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

	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	4904.000	34.46	12.47	35.27	43.38	55.04	74.00	18.96	Peak
2	4904.000	34.46	12.47	35.27	36.42	48.08	54.00	5.92	Average

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

FCC ID: WWMAN401XV1 page 4-71



Site no. : 10m Chamber Data no. : 71

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

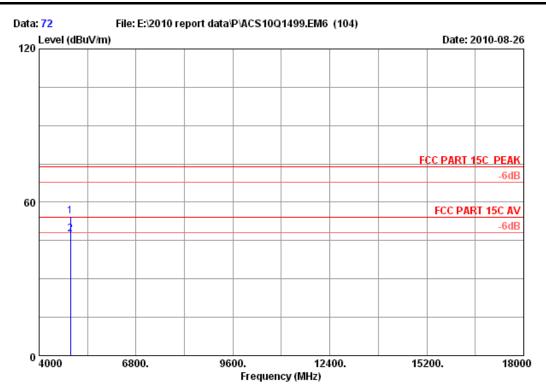
Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

FCC ID: WWMAN401XV1 page 4-72



Site no. : 10m Chamber Data no. : 72

Dis. / Ant. : 3m Ant. pol. : HORIZONTAL 3115(0911)

: FCC PART 15C PEAK Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point EUT Power : DC 9V From Adapter Input AC 120V/60Hz Power
Test mode : IEEE802.11n n...
: PW-AN401D/M-WA701ND

: IEEE802.11n HT40 CH7 2452MHz Tx

	-		Factor	Reading (dBuV)	Emission Level (dBuV/m)	Limits	_	Remark
1 2	4904.000 4904.000	 			54.34 47.50	74.00 54.00	19.66 6.50	Peak Average

- 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 in 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.

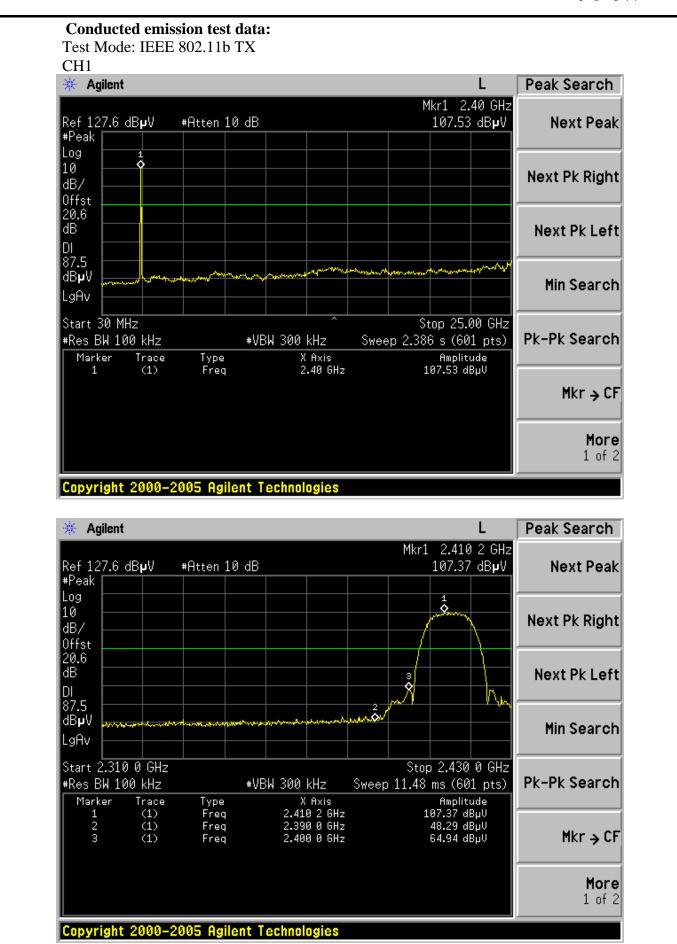
## 5.3.Test Procedure

The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz and measure all the emissions detected.

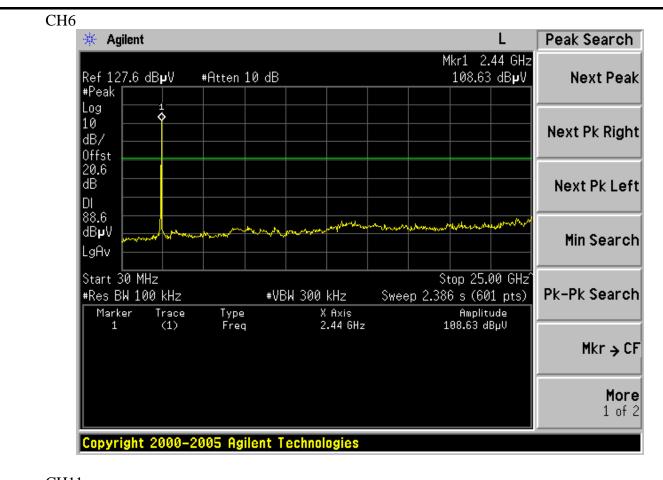
## 5.4.Test result

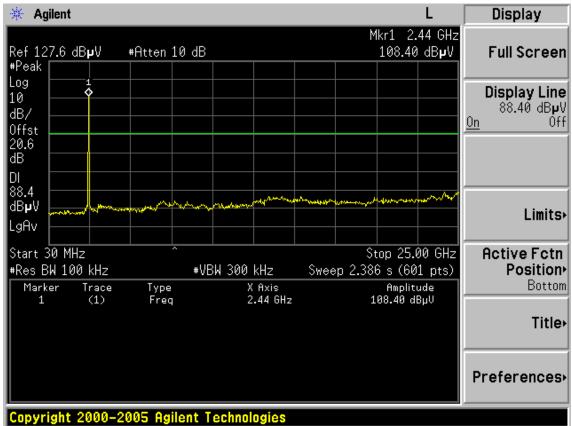
**PASS** (The testing data was attached in the next pages.)



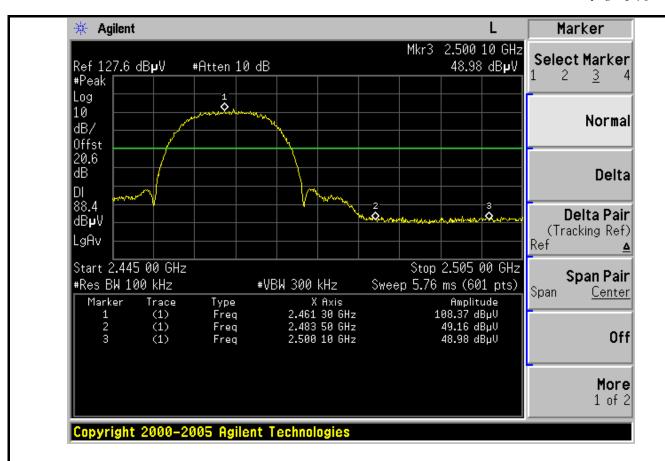




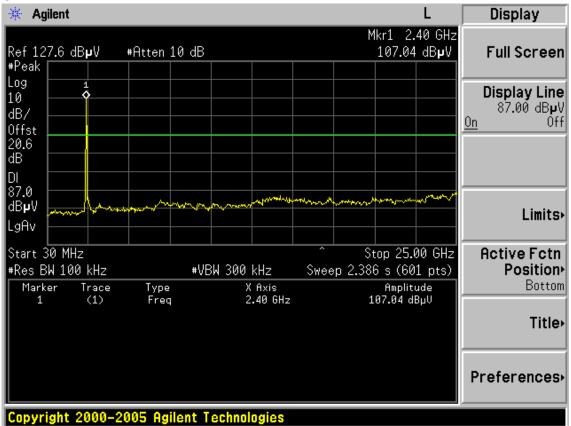




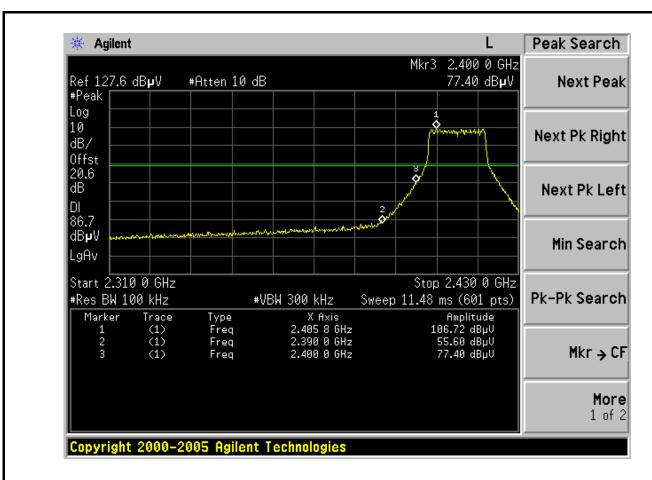


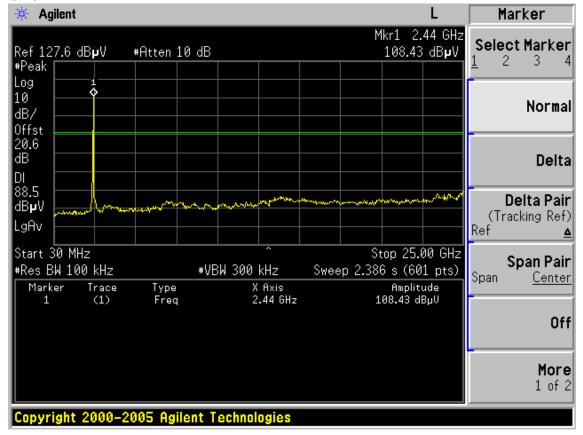


Test Mode: IEEE 802.11g TX

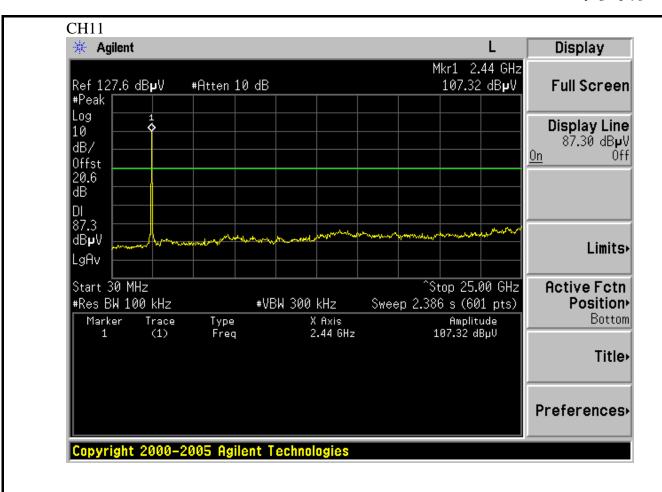


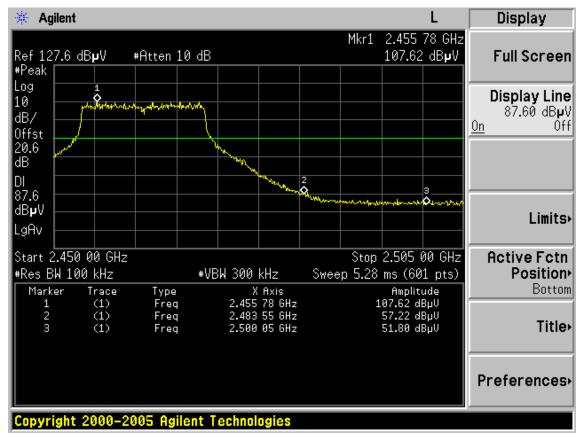




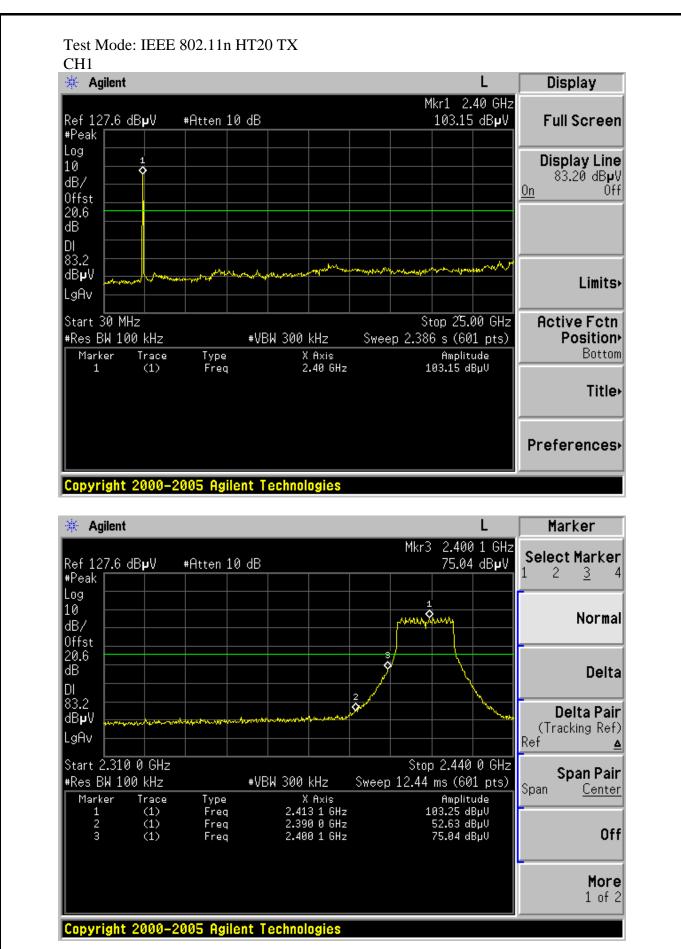




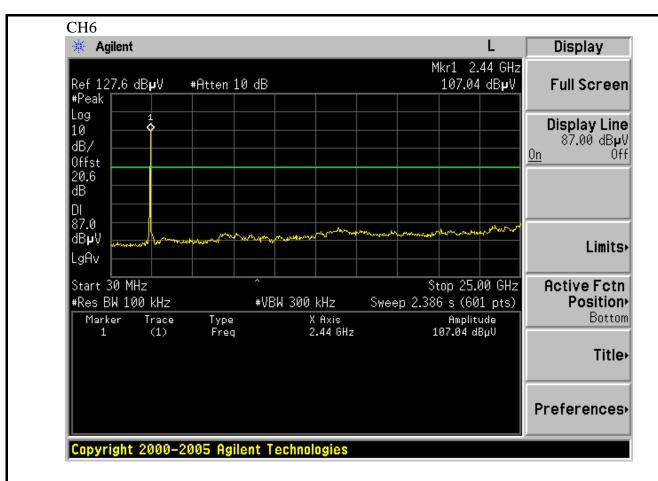


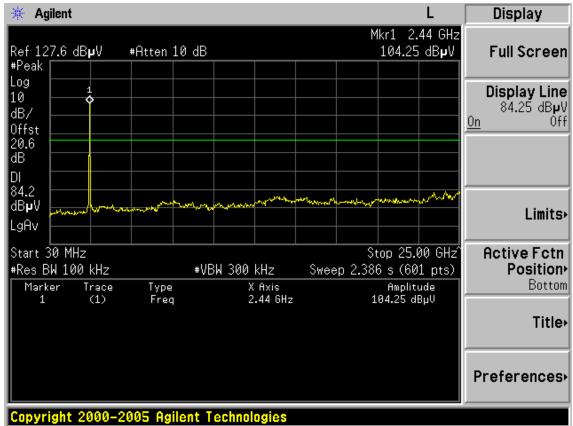




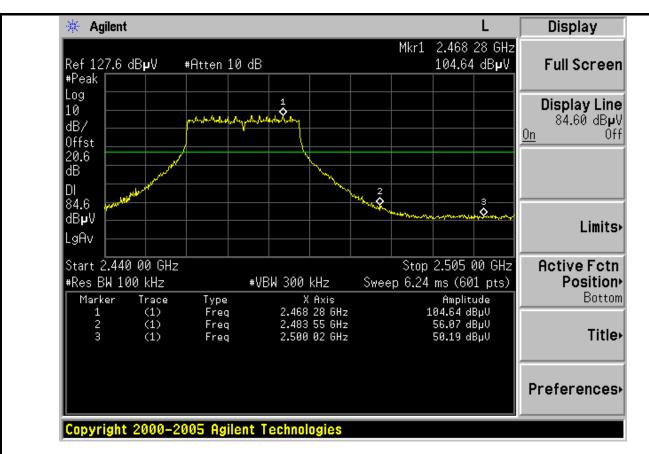




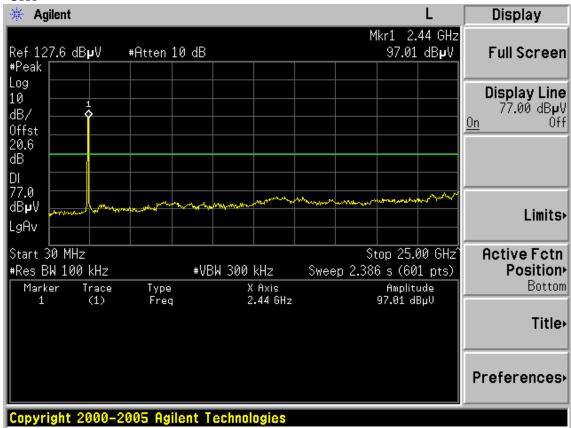




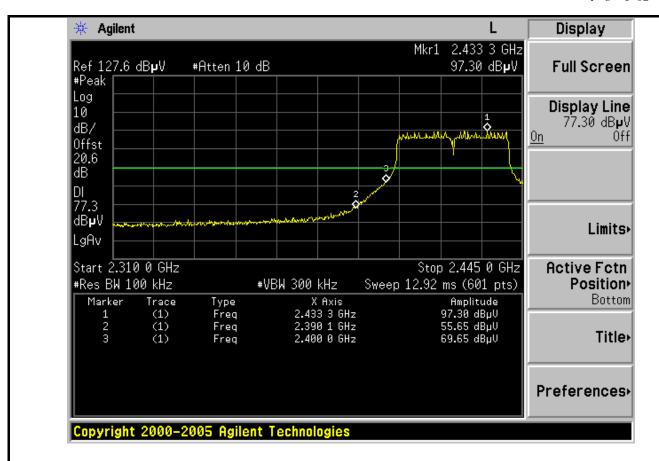


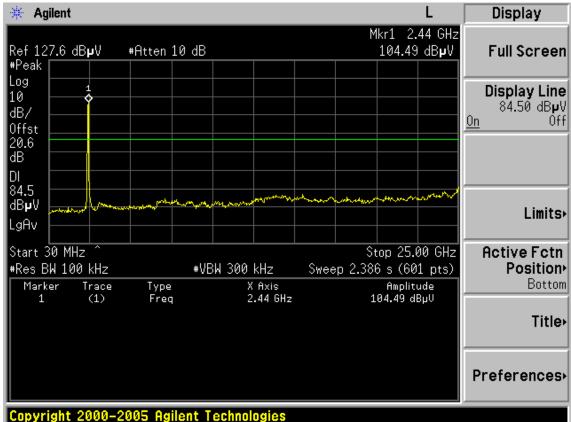


Test Mode: IEEE 802.11n HT40 TX

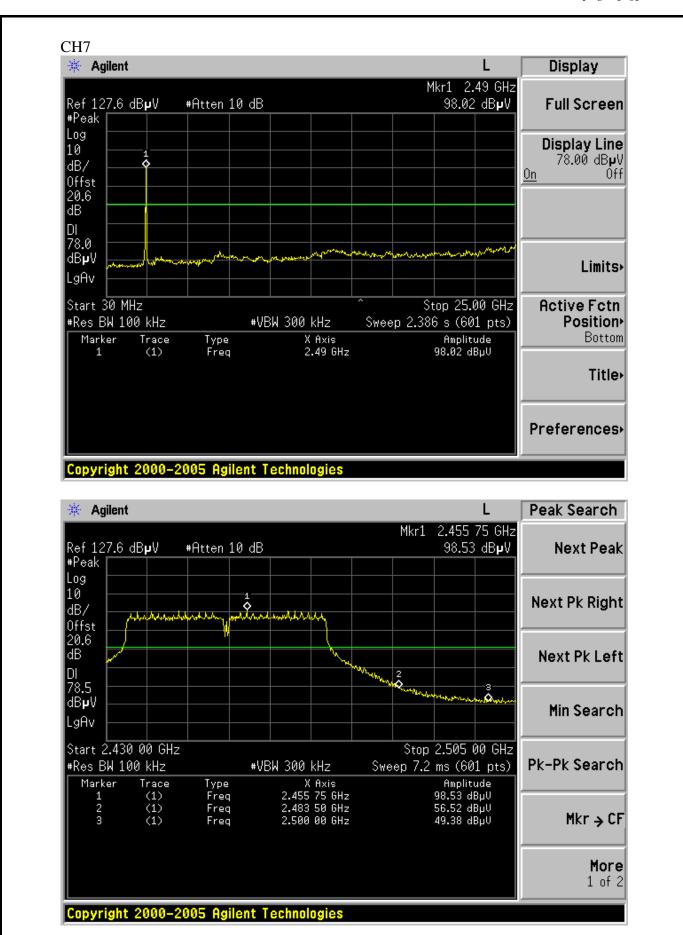














## 6. BAND EDGE COMPLIANCE TEST

## 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	SUCOFLEX102	28620/2	May.08,10	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,10	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX102	28610/2	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.

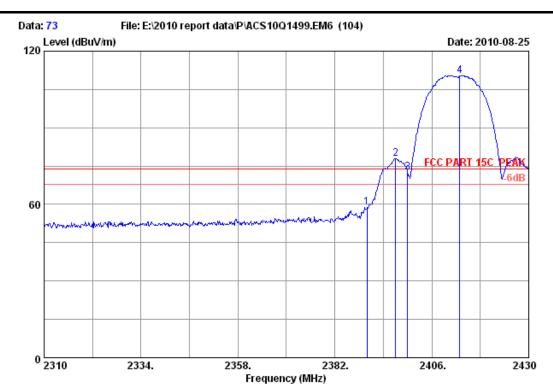
### 6.3. Test Produce

- 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 upper band-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.)

FCC ID: WWMAN401XV1 page 6-1



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

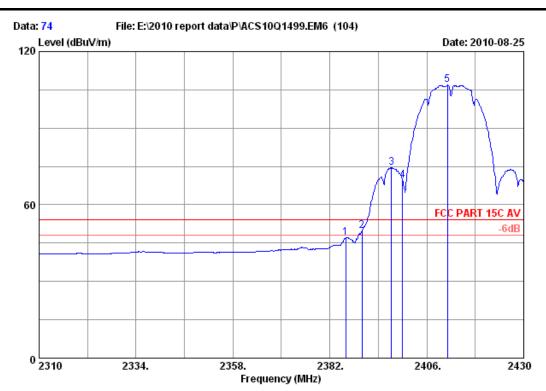
Test mode : IEEE802.11b CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	Ant Freq. Fact (MHz) (dB/	or loss			Emission Level (dBuV/m)	Limits	Margin	Remark	
2	2390.000 29. 2397.000 29.	44 8.72	36.09	75.97	58.84 78.04	74.00 74.00	15.16 -4.04	Peak Peak	
_	2400.000 29. 2412.960 29.				72.67 110.41	74.00 74.00	1.33 -36.41	Peak Peak	

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

FCC ID: WWMAN401XV1 page 6-2



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

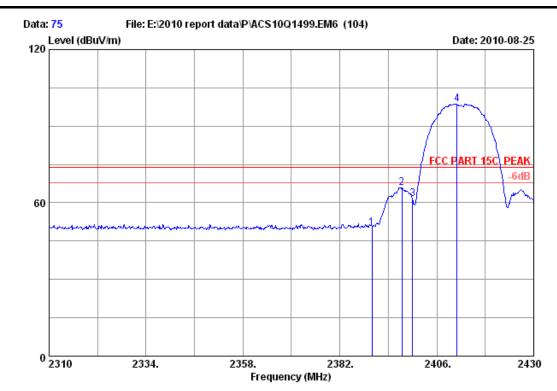
Test mode : IEEE802.11b CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	•	Reading (dBuV)	Emission Level (dBuV/m)	Limit: (dBuV/:	s Margin m) (dB)	Remark
1	2385.960	29.44	8.67	36.09	45.14	47.16	54.00	6.84	Average
2	2390.000	29.44	8.67	36.09	47.66	49.68	54.00	4.32	Average
3	2397.240	29.44	8.72	36.09	72.40	74.47	54.00	-20.47	Average
4	2400.000	29.44	8.72	36.09	67.60	69.67	54.00	-15.67	Average
5	2411.160	29.45	8.72	35.95	104.58	106.80	54.00	-52.80	Average

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

FCC ID: WWMAN401XV1 page 6-3



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

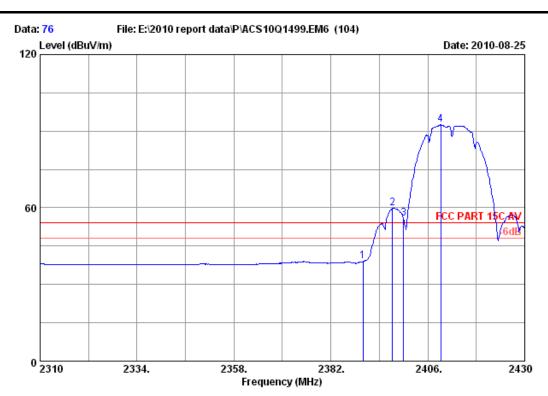
Test mode : IEEE802.11b CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Factor	loss	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)		s Margin n) (dB)	Remark	
1	2390.000	29.44	8.67	36.09	48.23	50.25	74.00	23.75	Peak	
2	2397.360	29.44	8.72	36.09	63.71	65.78	74.00	8.22	Peak	
3	2400.000	29.44	8.72	36.09	59.37	61.44	74.00	12.56	Peak	
4	2411.040	29.45	8.72	35.95	96.39	98.61	74.00	-24.61	Peak	

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

FCC ID: WWMAN401XV1 page 6-4



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

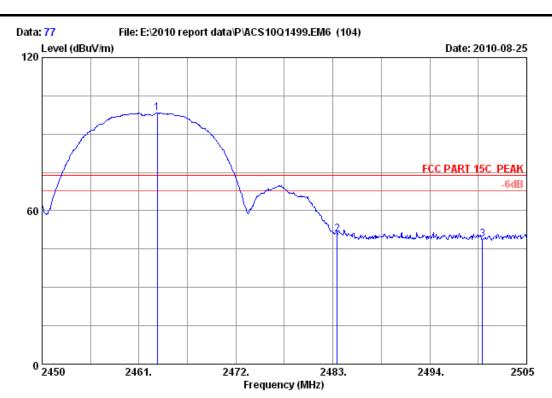
Test mode : IEEE802.11b CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

Freq. (MHz)	Ant. Factor (dB/m)		Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m	Margin ) (dB)	Remark
1 2390.000 2 2397.240 3 2400.000 4 2409.240	29.44	8.72 8.72	36.09 36.09	57.67 53.60	38.99 59.74 55.67 92.47	54.00 54.00 54.00 54.00	15.01 -5.74 -1.67 -38.47	Average Average Average Average

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

FCC ID: WWMAN401XV1 page 6-5



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

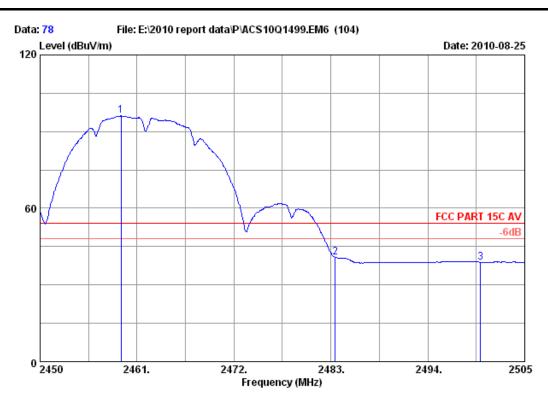
Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	Ant	. Cable	e Amp.		Emission				
	Freq. Fact	or loss	Factor	Reading	Level	Limit	s Margin	Remark	
	(MHz) (dB/	m) (dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/	m) (dB)		
1	2463.090 29.	48 8.82	36.02	95.96	98.24	74.00	-24.24	Peak	
2	2483.500 29.	49 8.87	35.97	48.58	50.97	74.00	23.03	Peak	
3	2500.000 29.	50 8.92	36.00	46.52	48.94	74.00	25.06	Peak	

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

FCC ID: WWMAN401XV1 page 6-6



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

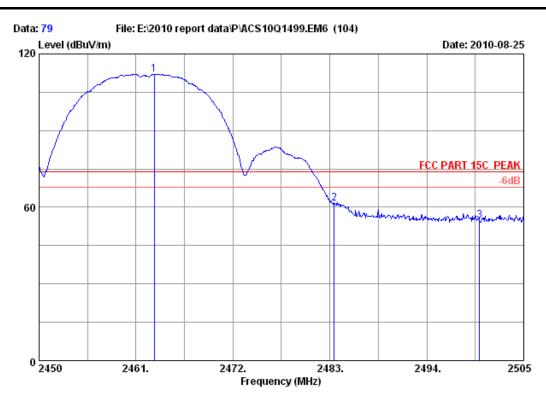
Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	-			Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit		Remark	
_	2459.185 2483.500 2500.000	29.49	8.87	35.97	38.41	96.14 40.80 38.88	54.00 54.00 54.00	-42.14 13.20 15.12	Average Average Average	

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

FCC ID: WWMAN401XV1 page 6-7



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

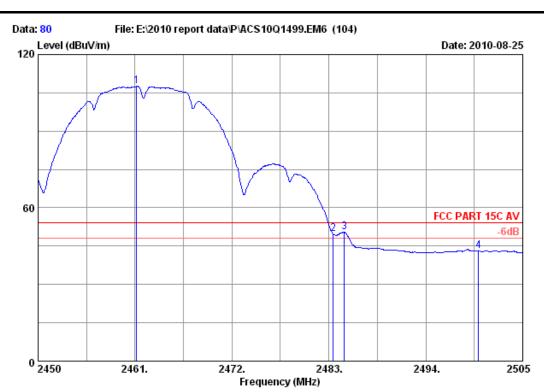
Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	-		loss			Emission Level (dBuV/m)	Limit	_	Remark	
					·			, (db) 		
1	2463.090	29.48	8.82	36.02	109.77	112.05	74.00	-38.05	Peak	
2	2483.500	29.49	8.87	35.97	59.18	61.57	74.00	12.43	Peak	
3	2500.000	29.50	8.92	36.00	52.55	54.97	74.00	19.03	Peak	

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

FCC ID: WWMAN401XV1 page 6-8



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

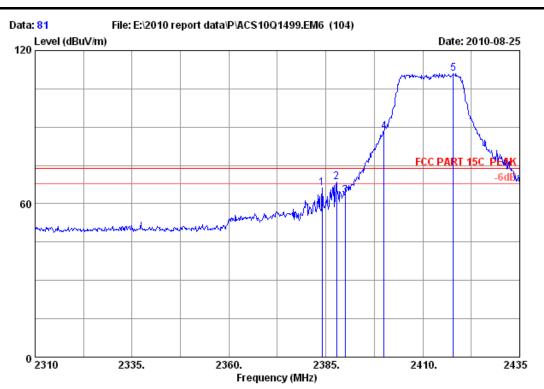
Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	An Freq. Fac (MHz) (dB	tor loss	: Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)			Remark
1	2461.165 29	.48 8.82	36.02	105.27	107.55	54.00	-53.55	Average
2	2483.500 29	.49 8.87	35.97	47.30	49.69	54.00	4.31	Average
3	2484.760 29	.49 8.87	35.97	48.12	50.51	54.00	3.49	Average
4	2500.000 29	.50 8.92	36.00	40.81	43.23	54.00	10.77	Average

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

FCC ID: WWMAN401XV1 page 6-9



Site no. : 10m Chamber Data no. : 81
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

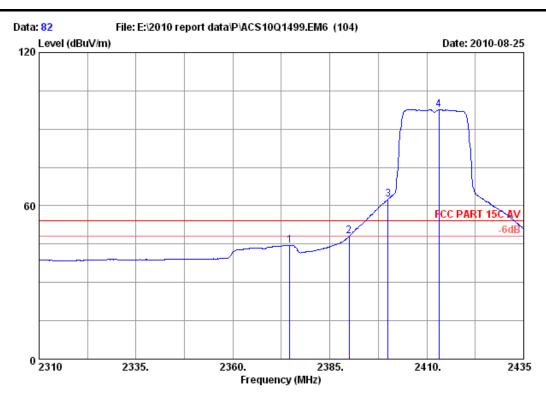
Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	-	Ant. Factor (dB/m)		Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)			Remark	
1	2384.000	29.43	8.67	36.00	63.95	66.05	74.00	7.95	Peak	
2	2387.750	29.44	8.67	36.09	66.59	68.61	74.00	5.39	Peak	
3	2390.000	29.44	8.67	36.09	61.18	63.20	74.00	10.80	Peak	
4	2400.000	29.44	8.72	36.09	86.16	88.23	74.00	-14.23	Peak	
5	2417.875	29.45	8.72	35.95	108.70	110.92	74.00	-36.92	Peak	

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

FCC ID: WWMAN401XV1 page 6-10



Site no. : 10m Chamber Data no. : 82 Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C AV Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point EUT : DC 9V From Adapter Input AC 120V/60Hz Power

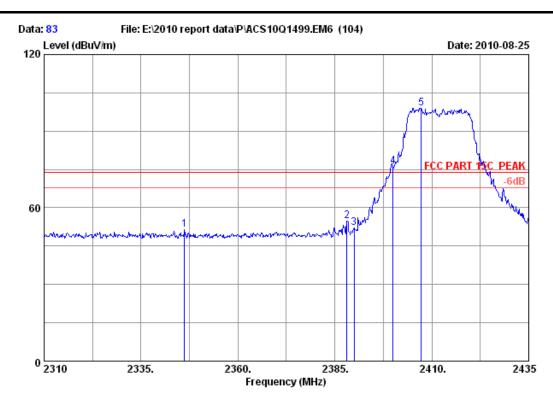
Test mode : IEEE802.11g CH1 2412MHz Tx

: PW-AN401D/M-WA701ND M/N

		Ant. Factor (dB/m)		Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)			Remark
1	2374.625	5 29.43	8.67	36.00	42.42	44.52	54.00	9.48	Average
2	2390.000	29.44	8.67	36.09	46.14	48.16	54.00	5.84	Average
3	2400.000	29.44	8.72	36.09	60.54	62.61	54.00	-8.61	Average
4	2413.125	5 29.45	8.72	35.95	95.32	97.54	54.00	-43.54	Average

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

FCC ID:WWMAN401XV1 page 6-11



Site no. : 10m Chamber Data no. : 83

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH1 2412MHz Tx

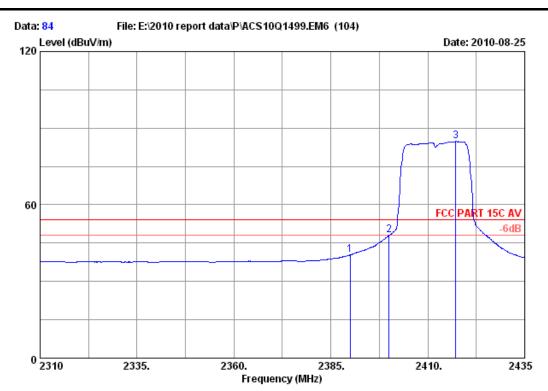
M/N : PW-AN401D/M-WA701ND

	-	Ant. Factor (dB/m)			Reading (dBuV)				Remark
1	2346.250	29.41	8.57	35.99	49.59	51.58	74.00	22.42	Peak
2	2388.125	5 29.44	8.67	36.09	52.80	54.82	74.00	19.18	Peak
3	2390.000	29.44	8.67	36.09	50.22	52.24	74.00	21.76	Peak
4	2400.000	29.44	8.72	36.09	74.18	76.25	74.00	-2.25	Peak
5	2407.250	29.45	8.72	35.95	96.82	99.04	74.00	-25.04	Peak

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

FCC ID:WWMAN401XV1 page 6-12



Site no. : 10m Chamber Data no. : 84

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

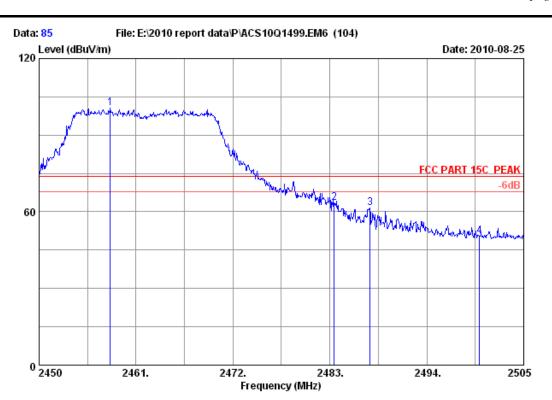
Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	Ant. Freq. Factor (MHz) (dB/m)	Cable Amp. loss Factor (dB) (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits Margin (dBuV/m) (dB)	Remark
_	2390.000 29.44 2400.000 29.44 2417.250 29.45	8.72 36.09	45.91	40.37 47.98 84.77	54.00 13.63 54.00 6.02 54.00 -30.77	Average Average Average

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

FCC ID: WWMAN401XV1 page 6-13



Site no. : 10m Chamber Data no. : 85

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

Limit : FCC PART 15C PEAK Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

: 150M Wireless Lite-N Access Point EUT : DC 9V From Adapter Input AC 120V/60Hz Power

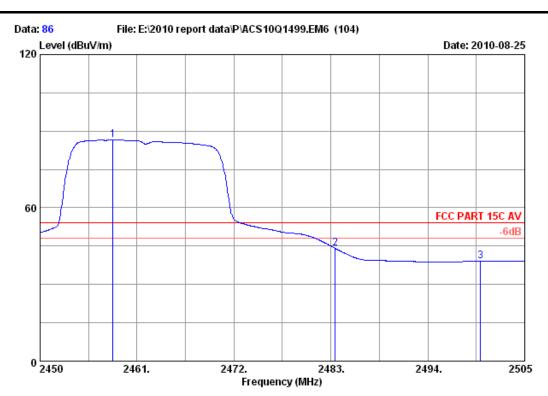
Test mode : IEEE802.11g CH11 2462MHz Tx

: PW-AN401D/M-WA701ND M/N

	-	Factor			Reading (dBuV)	Lmission Level (dBuV/m)		_	Remark
1	2458.085	29.48	8.82	36.02	98.25	100.53	74.00	-26.53	Peak
2	2483.500	29.49	8.87	35.97	60.98	63.37	74.00	10.63	Peak
3	2487.565	29.50	8.87	36.00	59.23	61.60	74.00	12.40	Peak
4	2500.000	29.50	8.92	36.00	48.09	50.51	74.00	23.49	Peak

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

FCC ID: WWMAN401XV1 page 6-14



Site no. : 10m Chamber Data no. : 86

Ant. pol. : HORIZONTAL Dis. / Ant. : 3m 3115(0911)

Limit : FCC PART 15C AV Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point : DC 9V From Adapter Input AC 120V/60Hz Power

Test mode : IEEE802.11g CH11 2462MHz Tx

: PW-AN401D/M-WA701ND M/N

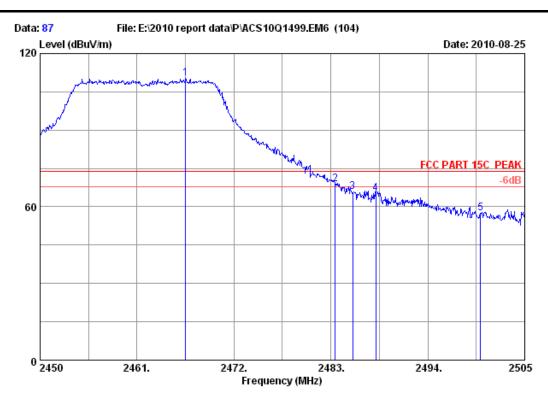
	-		loss	Factor		Level		Margin	Remark
	(MHz) (	(ub/m) 	(dB) 	(dB) 	(dBuV) 	(dBuV/m)	(abuv/n	i) (ub) 	
1	2458.250	29.48	8.82	36.02	84.32	86.60	54.00	-32.60	Average
2	2483.500	29.49	8.87	35.97	41.72	44.11	54.00	9.89	Average
3	2500.000	29.50	8.92	36.00	36.60	39.02	54.00	14.98	Average

#### Remarks:

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

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FCC ID: WWMAN401XV1 page 6-15



Site no. : 10m Chamber Data no. : 87

Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

Test mode : IEEE802.11g CH11 2462MHz Tx

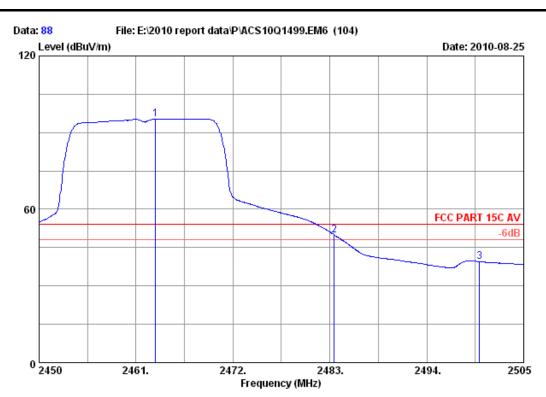
M/N : PW-AN401D/M-WA701ND

	-	Ant. Factor (dB/m)			Reading (dBuV)		Limit	s Margin m) (dB)	Remark	
1	2466.500	29.48	8.82	36.02	107.95	110.23	74.00	-36.23	Peak	
2	2483.500	29.49	8.87	35.97	66.44	68.83	74.00	5.17	Peak	
3	2485.500	29.49	8.87	35.97	63.30	65.69	74.00	8.31	Peak	
4	2488.115	29.50	8.87	36.00	62.96	65.33	74.00	8.67	Peak	
5	2500.000	29.50	8.92	36.00	55.08	57.50	74.00	16.50	Peak	

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

FCC ID: WWMAN401XV1 page 6-16



Site no. : 10m Chamber Data no. : 88 Dis. / Ant. : 3m Ant. pol. : VERTICAL 3115(0911)

: FCC PART 15C AV Limit

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

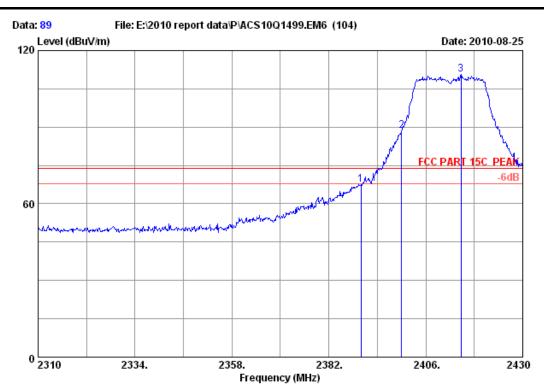
EUT : 150M Wireless Lite-N Access Point Power : DC 9V From Adapter Input AC 120V/60Hz

Power
Test mode : IEEE802.11g cm.:
"/W : PW-AN401D/M-WA701ND : IEEE802.11g CH11 2462MHz Tx

	-			Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit		Remark	
2	2463.200 2483.500 2500.000	29.49	8.87	35.97	47.58	95.28 49.97 39.48	54.00 54.00 54.00	-41.28 4.03 14.52	Average Average Average	

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

FCC ID: WWMAN401XV1 page 6-17



Site no. : 10m 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

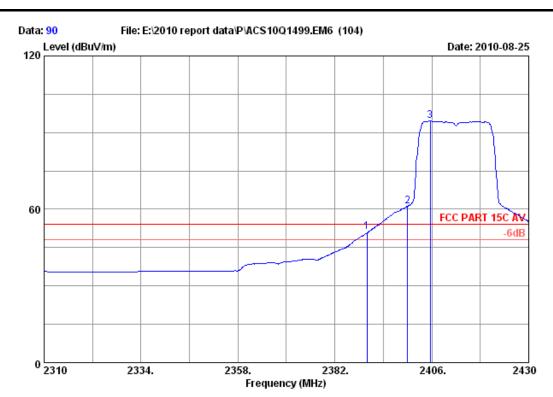
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

			Ant.	Cable	Amp.		Emission				
		Freq.	Factor	loss	Factor	Reading	Level	Limit	s Margin	Remark	
		(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/:	m) (dB)		
1	L	2390.000	29.44	8.67	36.09	65.53	67.55	74.00	6.45	Peak	
2	2	2400.000	29.44	8.72	36.09	86.54	88.61	74.00	-14.61	Peak	
3	}	2414.760	29.45	8.72	35.95	108.53	110.75	74.00	-36.75	Peak	

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

FCC ID:WWMAN401XV1 page 6-18



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

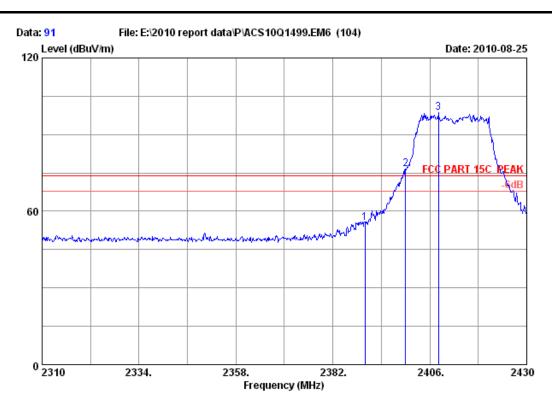
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	Freq. (MHz)	Factor		Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit		Remark
2	2390.000 2400.000 2405.640	29.44	8.72	36.09	59.14	51.10 61.21 94.53	54.00 54.00 54.00	2.90 -7.21 -40.53	Average Average Average

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

FCC ID: WWMAN401XV1 page 6-19



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

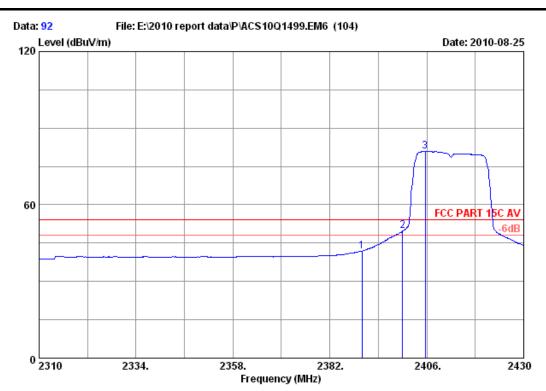
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	-		loss		Reading (dBuV)	Emission Level (dBuV/m)		_	Remark
2	2390.000 2400.000 2408.160	29.44	8.72	36.09	74.37	55.46 76.44 98.60	74.00 74.00 74.00	18.54 -2.44 -24.60	Peak Peak Peak Peak

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

FCC ID:WWMAN401XV1 page 6-20



Site no. : 10m 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 : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

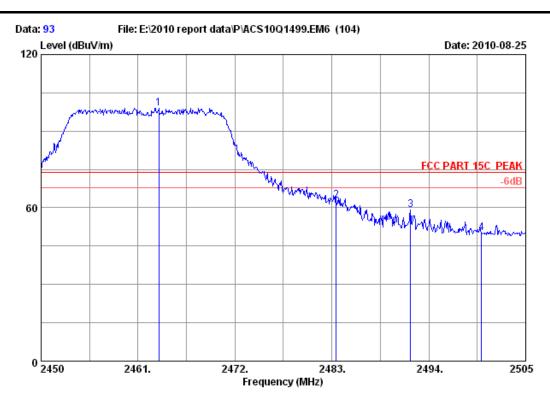
Test mode : IEEE802.11n HT20 CH1 2412MHz Tx

M/N : PW-AN401D/M-WA701ND

	Ant. Freq. Factor (MHz) (dB/m)	Cable loss (dB)	•	Reading (dBuV)	Emission Level (dBuV/m)	Limit	s Margin m) (dB)	Remark
_	2390.000 29.44				41.92	54.00	12.08	Average
_	2400.000 29.44 2405.640 29.45				49.69 80.92	54.00 54.00	4.31 -26.92	Average Average

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

FCC ID: WWMAN401XV1 page 6-21



Site no. : 10m 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

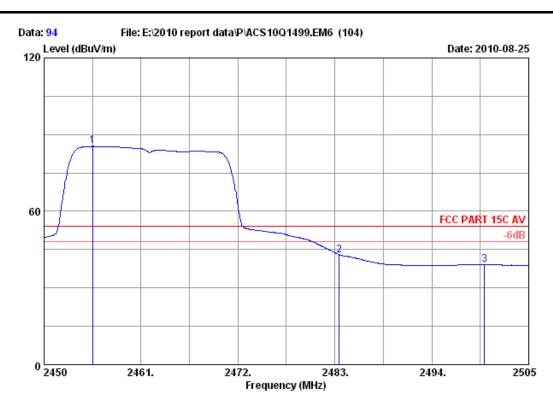
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	-		loss			Emission Level (dBuV/m)	Limits I	_	Remark
2	2463.365 2483.500	29.49	8.87	35.97	60.35	99.06 62.74	74.00	25.06	Peak Peak
_	2491.910 2500.000					59.13 50.02		14.87 23.98	Peak Peak

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

FCC ID:WWMAN401XV1 page 6-22



Site no. : 10m 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

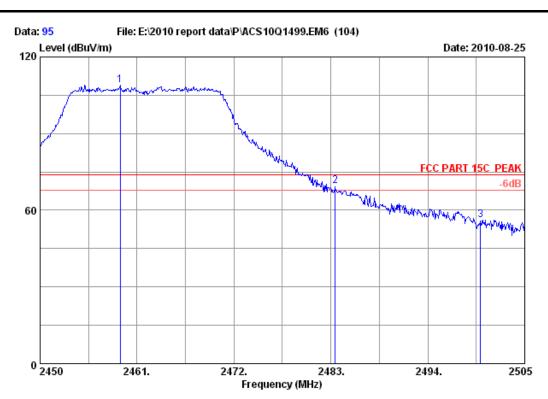
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	-			Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit:		Remark
_	2455.500 2483.500 2500.000	29.49	8.87	35.97	40.51	85.43 42.90 39.06	54.00 54.00 54.00	-31.43 11.10 14.94	Average Average Average

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

FCC ID:WWMAN401XV1 page 6-23



Site no. : 10m 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

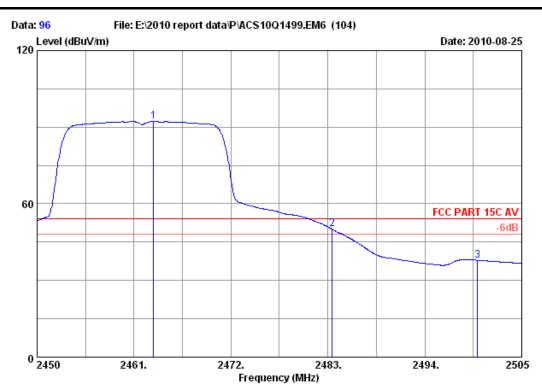
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	-		loss			Emission Level (dBuV/m)	Limit	_	Remark	
2	2459.075 2483.500 2500.000	29.49	8.87	35.97	66.99	108.87 69.38 56.10	74.00 74.00 74.00	-34.87 4.62 17.90	Peak Peak Peak Peak	-

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

FCC ID:WWMAN401XV1 page 6-24



Site no. : 10m 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

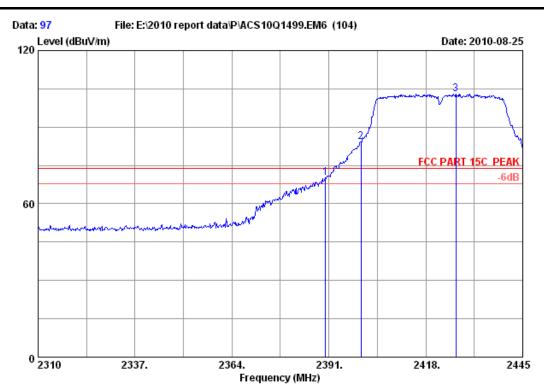
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT20 CH11 2462MHz Tx

M/N : PW-AN401D/M-WA701ND

	Ant Freq. Facto (MHz) (dB/r	or loss	•	Reading (dBuV)	Emission Level (dBuV/m)	Limit	s Margin m) (dB)	Remark	
1	2463.200 29.4	<del>1</del> 8 8.82	36.02	89.96	92.24	54.00	-38.24	Average	
2	2483.500 29.4	19 8.87	35.97	47.61	50.00	54.00	4.00	Average	
3	2500.000 29.	50 8.92	36.00	35.45	37.87	54.00	16.13	Average	

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

FCC ID: WWMAN401XV1 page 6-25



Site no. : 10m Chamber Data no. : 97
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

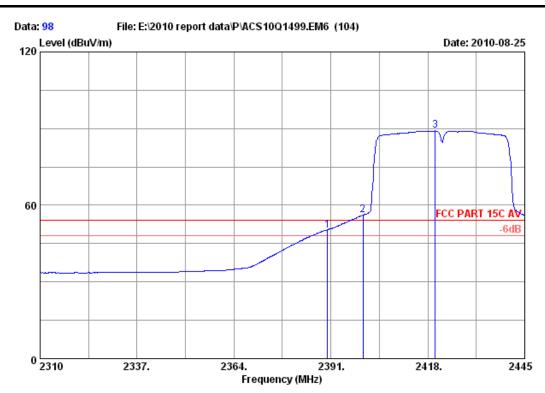
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND

Peak
Peak
Peak
F

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

FCC ID:WWMAN401XV1 page 6-26



Site no. : 10m Chamber Data no. : 98
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C AV

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

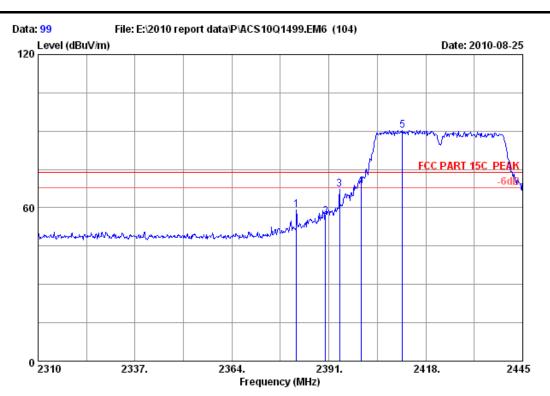
Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND

	-			Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limit		Remark
2	2390.000 2400.000 2420.025	29.44	8.72	36.09	54.16	50.26 56.23 89.09	54.00 54.00 54.00	3.74 -2.23 -35.09	Average Average Average

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

FCC ID: WWMAN401XV1 page 6-27



Site no. : 10m Chamber Data no. : 99

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

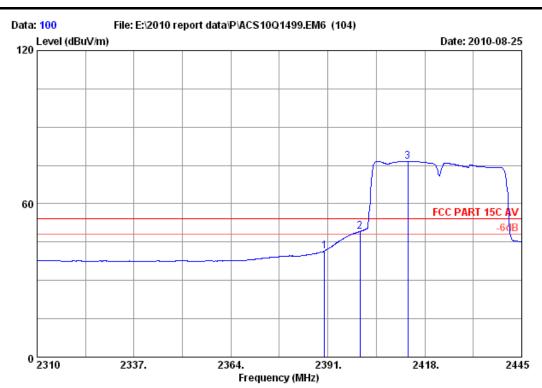
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND

	Freq. (MHz)	Ant. Factor (dB/m)		Amp. Factor (dB)	Reading (dBuV)		Limits	s Margin n) (dB)	Remark
_	2381.955					59.01 56.35	74.00 74.00	14.99 17.65	Peak Peak
_	2393.970				65.05	67.07	74.00	6.93	Peak
_	2400.000				66.18	68.25	74.00	5.75	Peak
5	2411.520	29.45	8.72	35.95	88.15	90.37	74.00	-16.37	Peak

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

FCC ID: WWMAN401XV1 page 6-28



Site no. : 10m Chamber Data no. : 100

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

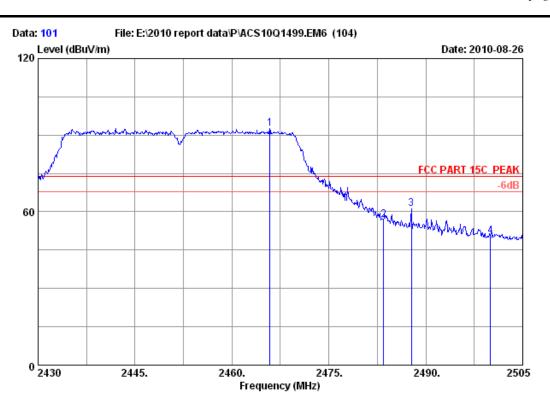
Test mode : IEEE802.11n HT40 CH1 2422MHz Tx

M/N : PW-AN401D/M-WA701ND

		nt. Cable ctor loss B/m) (dB)	•	Reading (dBuV)	Emission Level (dBuV/m)			Remark
2	2390.000 29 2400.000 29 2413.275 29	9.44 8.72	36.09	47.11	41.56 49.18 76.64	54.00 54.00 54.00	12.44 4.82 -22.64	Average Average Average

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

FCC ID: WWMAN401XV1 page 6-29



Site no. : 10m Chamber Data no. : 101

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

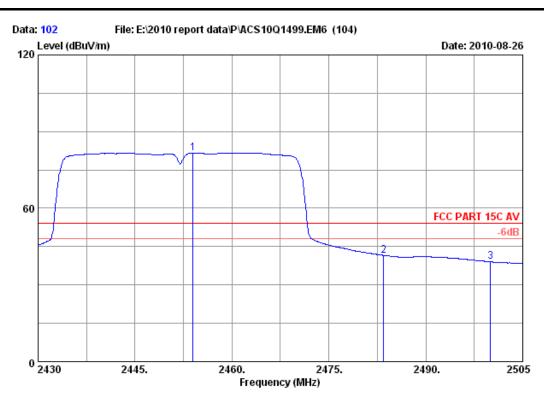
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

	-		loss		Reading (dBuV)	Level (dBuV/m)	Limits (dBuV/m)	_	Remark
_	2465.850					92.59	74.00 -		Peak
2	2483.500	29.49	8.87	35.97	54.59	56.98	74.00	17.02	Peak
3	2487.750	29.50	8.87	36.00	58.69	61.06	74.00	12.94	Peak
4	2500.000	29.50	8.92	36.00	48.04	50.46	74.00	23.54	Peak

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

FCC ID:WWMAN401XV1 page 6-30



Site no. : 10m Chamber Data no. : 102

Dis. / Ant. : 3m 3115(0911) Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz

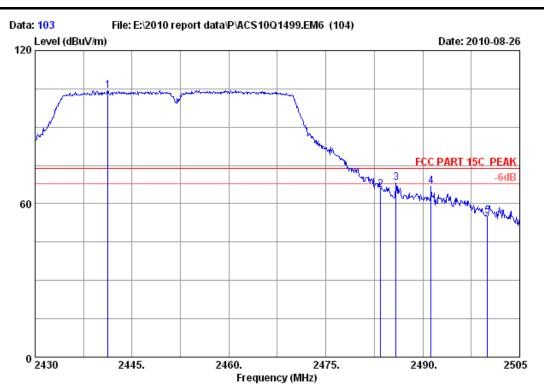
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

	-			Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits	_	Remark	
2	2454.000 2483.500 2500.000	29.49	8.87	35.97	39.12	81.72 41.51 39.01	54.00 54.00 54.00	-27.72 12.49 14.99	Average Average Average	

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

FCC ID: WWMAN401XV1 page 6-31



Site no. : 10m Chamber Data no. : 103
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

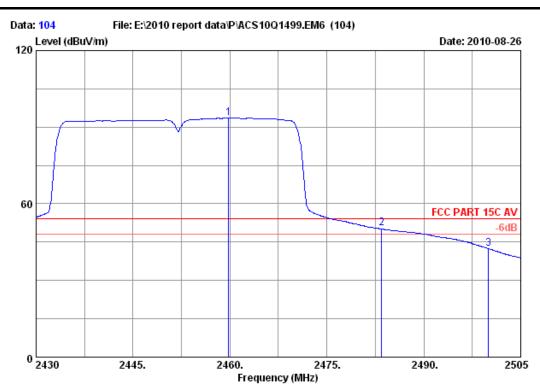
EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

	An Freq. Fac (MHz) (dB	tor loss		Reading (dBuV)		Limit	s Margin m) (dB)	Remark	
1	2441.250 29	.47 8.77	36.06	102.24	104.42	74.00	-30.42	Peak	
2	2483.500 29	.49 8.87	35.97	63.03	65.42	74.00	8.58	Peak	
3	2485.875 29	.49 8.87	35.97	65.66	68.05	74.00	5.95	Peak	
4	2491.275 29	.50 8.87	36.00	64.45	66.82	74.00	7.18	Peak	
5	2500.000 29	.50 8.92	36.00	52.86	55.28	74.00	18.72	Peak	

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

FCC ID:WWMAN401XV1 page 6-32



Site no. : 10m Chamber Data no. : 104
Dis. / Ant. : 3m 3115(0911) Ant. pol. : VERTICAL

Limit : FCC PART 15C AV

Env. / Ins. : 23\*C/54% Engineer : Sunny-lu

EUT : 150M Wireless Lite-N Access Point
Power : DC 9V From Adapter Input AC 120V/60Hz
Test mode : IEEE802.11n HT40 CH7 2452MHz Tx

M/N : PW-AN401D/M-WA701ND

		Cable Amp loss Fact (dB) (dB)		Emission Level (dBuV/m)		_	Remark
1	2459.775 29.48	8.82 36.0	2 91.23	93.51	54.00	-39.51	Average
2	2483.500 29.49	8.87 35.9	7 48.20	50.59	54.00	3.41	Average
3	2500.000 29.50	8.92 36.0	0 40.03	42.45	54.00	11.55	Average

- 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	SUCOFLEX102	28618/2	May.08,10	1Year

#### 7.2.Limit

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

### 7.3.Test Procedure

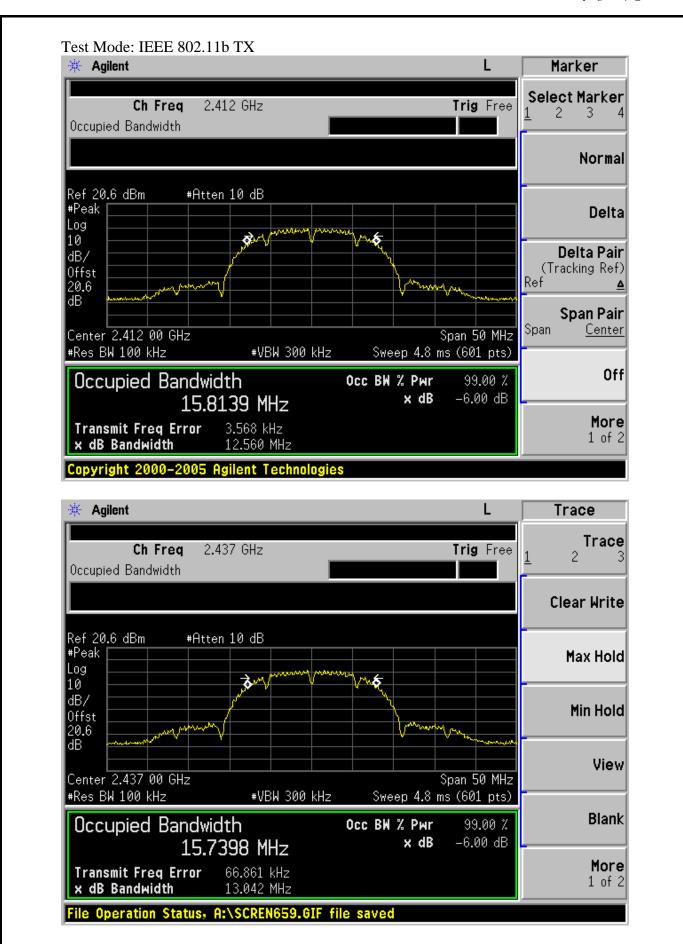
The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300 kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

#### 7.4.Test Results

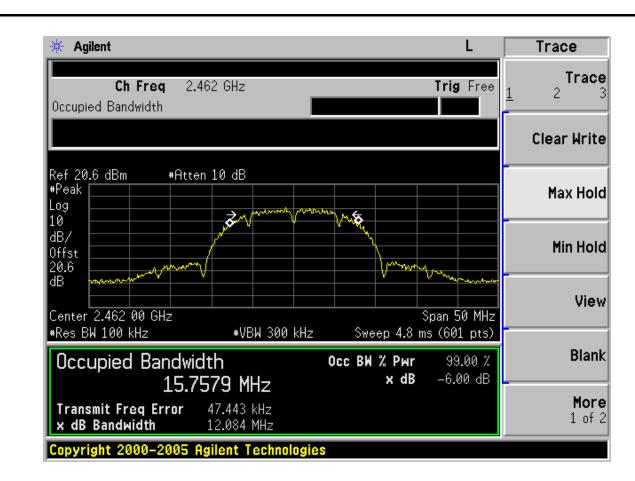
EUT:150M Wireless Lite-N Access Point						
M/N:PW-AN401D/M-WA701ND						
Test date:2010-09-07	Pressure:	100.6 kpa	Humidity: 60 %			
Tested by: Sunny-lu Test site: RF Site Temperature: 25						

Cable loss: 0.6	dB	Attenuator loss: 20 dB	Antenna Gain: 4 dBi					
Test Mode CH		6dB bandwidth (MHz)	Limit (KHz)					
	CH1	12.560	>500					
11b	СН6	13.042	>500					
	CH11	12.084	>500					
	CH1	16.520	>500					
11g	CH6	16.567	>500					
	CH11	16.590	>500					
11	CH1	17.791	>500					
11n HT20	CH6	17.715	>500					
11120	CH11	17.698	>500					
11	CH1	36.389	>500					
11n HT40	CH4	36.171	>500					
11140	CH7	36.433	>500					
Conclusion: Pa	Conclusion: PASS							

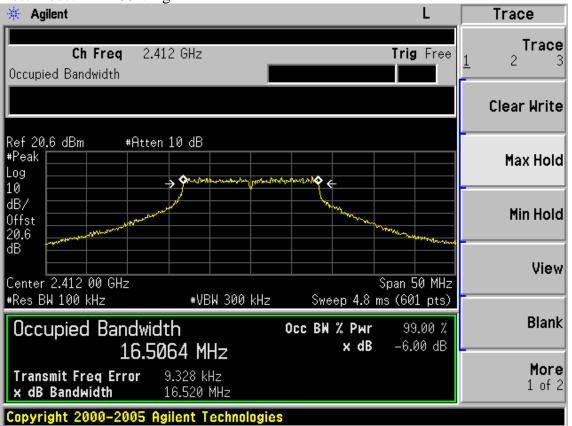




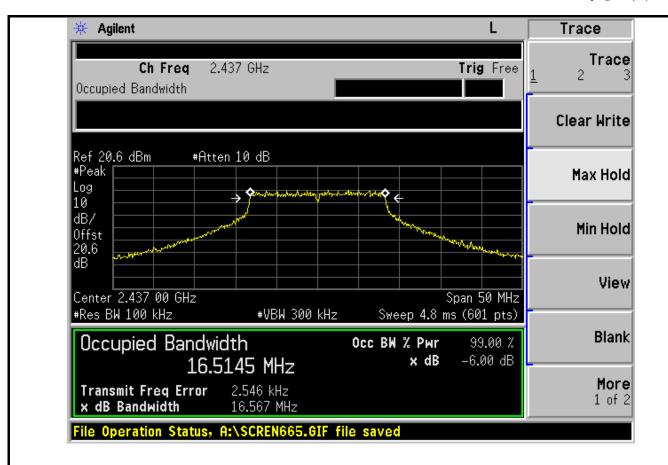


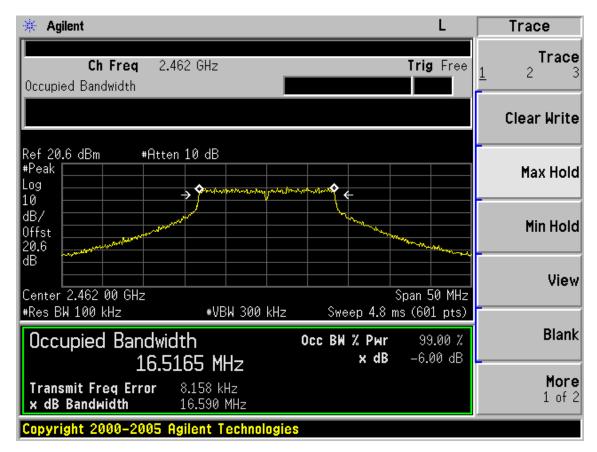


Test Mode: IEEE 802.11g TX

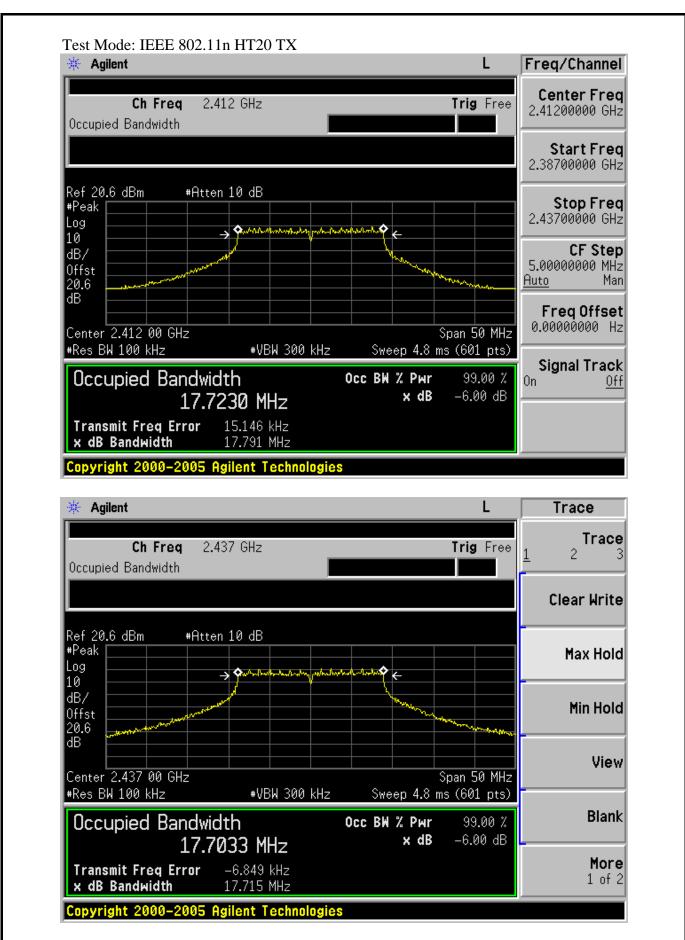




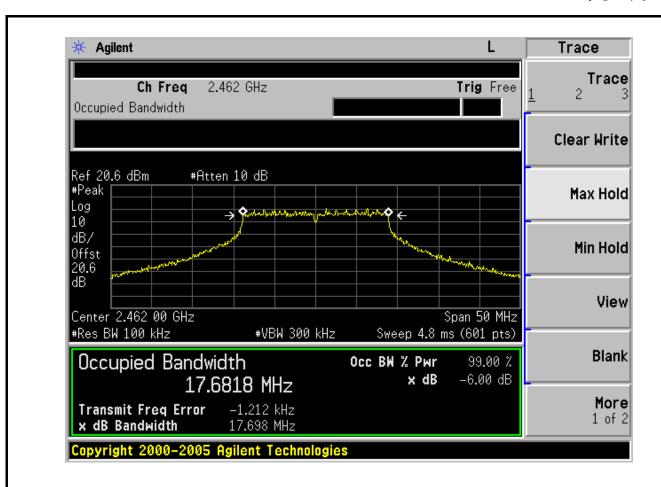












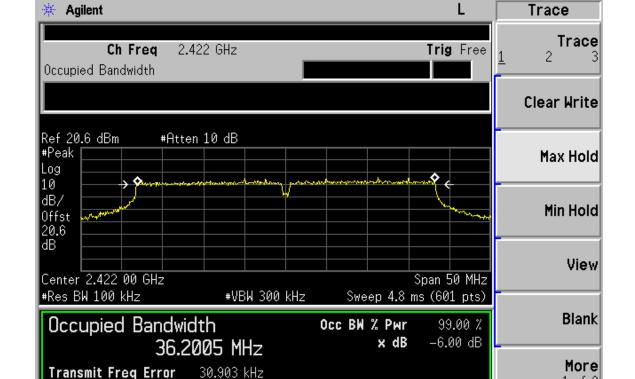
Test Mode: IEEE 802.11n HT40 TX

Transmit Freq Error

36.389 MHz

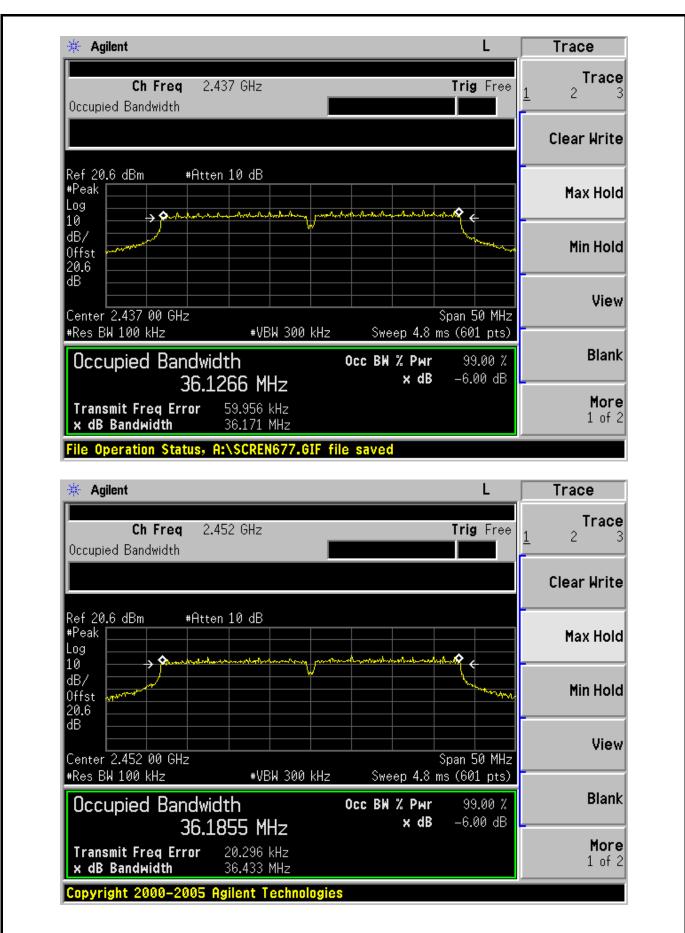
Copyright 2000-2005 Agilent Technologies

x dB Bandwidth



1 of 2







#### 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	1Year
2	Power sensor	Anritsu	MA2491A	0033005	Oct.20.09	1Year
3.	Attenuator	Agilent	8491B	MY39262165	May.08,10	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX 102	28618/2	May.08,10	1Year
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.

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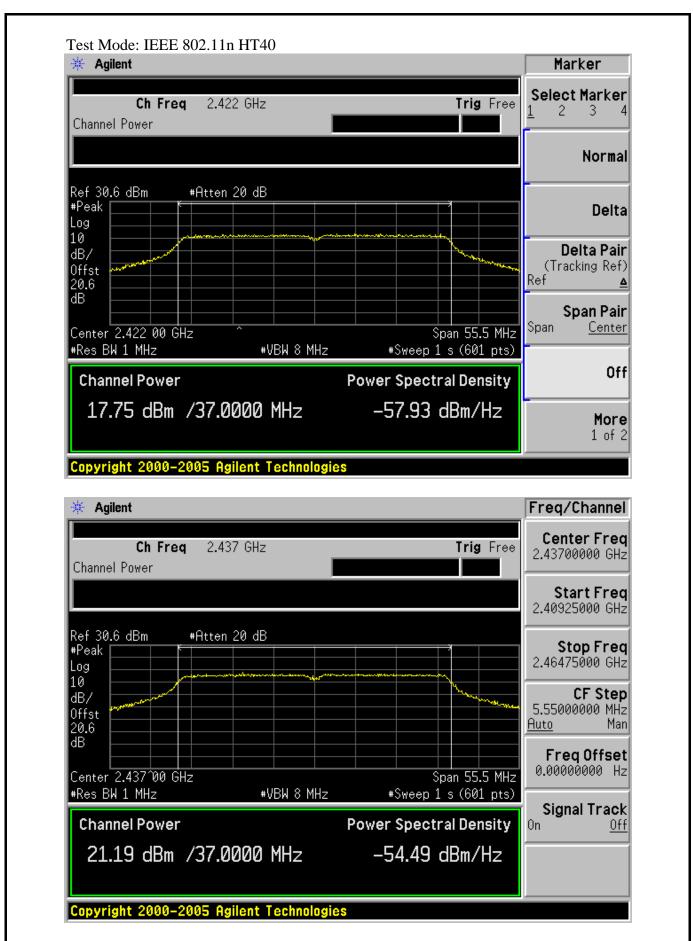
FCC ID: WWMAN401XV1 page 8-2

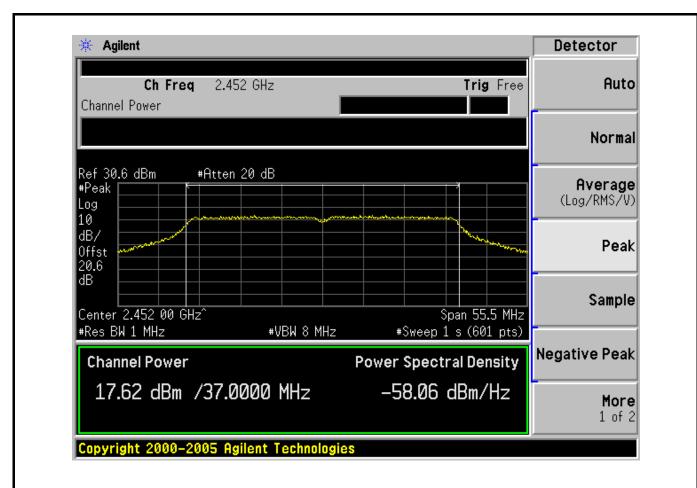
## 8.4.Test Results

EUT:150M Wireless Lite-N Access Point				
M/N:PW-AN401D/M-WA701ND				
Test date:2010-09-07	Pressure:	100.6 kpa	Humidity: 60 %	
Tested by:Sunny-lu	Test site:	RF Site	Temperature: 25 ℃	

Cable loss: 0.6dB		Attenuator loss: 20 dB	Antenna Gain: 4 dBi	
Test Mode	СН	Peak output Power (dBm)	Limit (dBm)	
	CH1	22.05	30	
11b	CH6	22.76	30	
	CH11	22.56	30	
	CH1	21.72	30	
11g	CH6	24.25	30	
	CH11 18.72		30	
11n HT20	CH1	20.60	30	
	CH6	24.05	30	
П120	CH11	18.60	30	
11	CH1	17.75	30	
11n HT40	CH4	21.19	30	
П140	CH7	17.62	30	
Conclusion: P.	Conclusion: PASS			









## 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.

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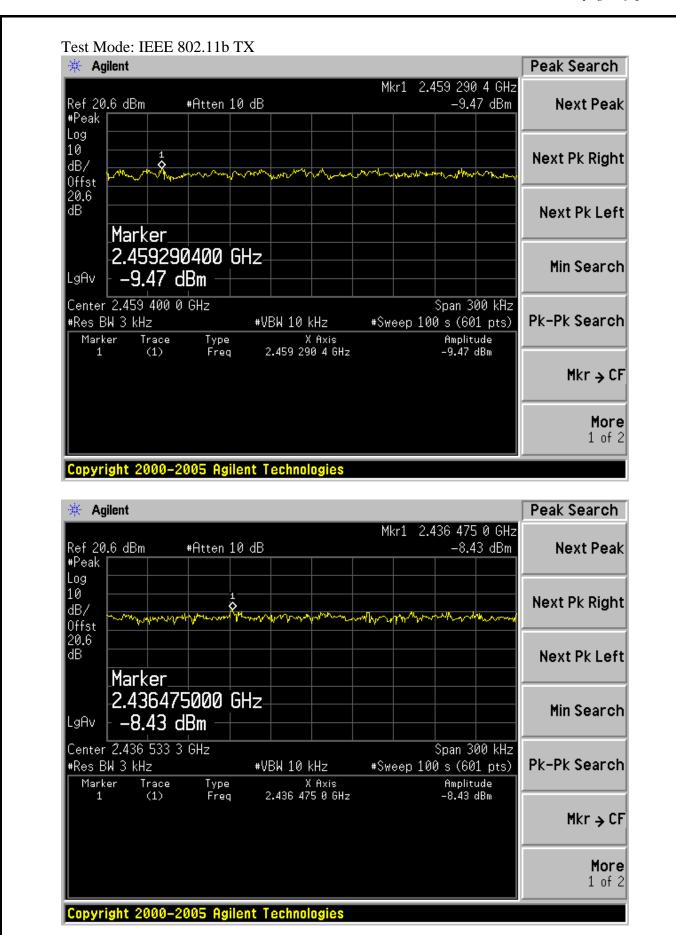
FCC ID: WWMAN401XV1 page 9-2

## 9.4.Test Results

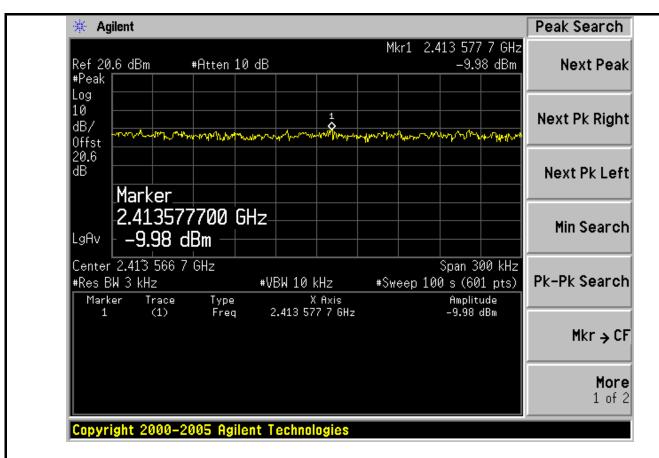
EUT:150M Wireless Lite-N Access Point				
M/N:PW-AN401D/M-WA701ND				
Test date:2010-09-07				
Tested by:Sunny-lu	Test site: RF Site	Temperature: 25°C		

Cable loss: 0.6 dB		Attenuator loss: 20 dB	Antenna Gain: 4 dBi	
Test Mode	СН	Power density (dBm/3KHz)	Limit (dBm/3KHz)	
	CH1	-9.98	8	
11b	CH6	-8.43	8	
	CH11	-9.47	8	
	CH1	-12.27	8	
11g	CH6	-10.30	8	
	CH11	-14.51	8	
1.1	CH1	-13.80	8	
11n HT20	CH6	-9.46	8	
11120	CH11	-15.30	8	
11n HT40	CH1	-17.71	8	
	CH4	-13.99	8	
	CH7	-17.95	8	
Conclusion: PASS				

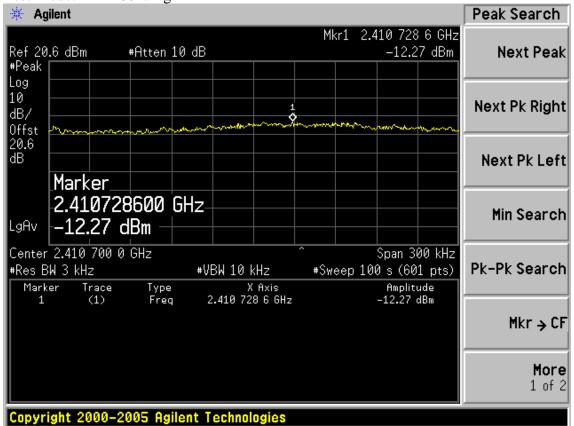




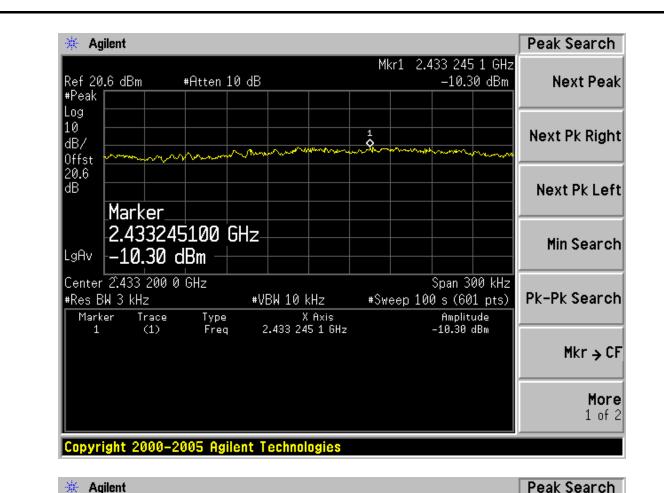


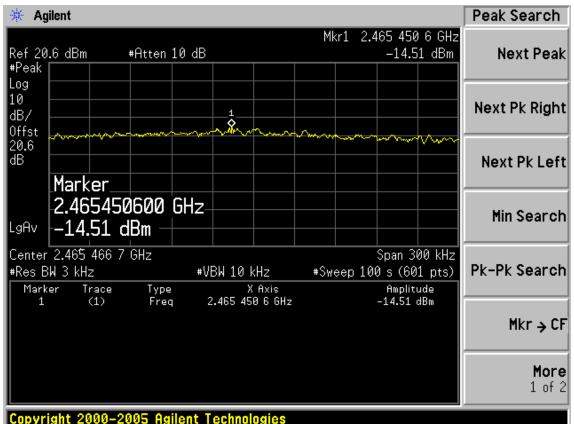


Test Mode: IEEE 802.11g TX

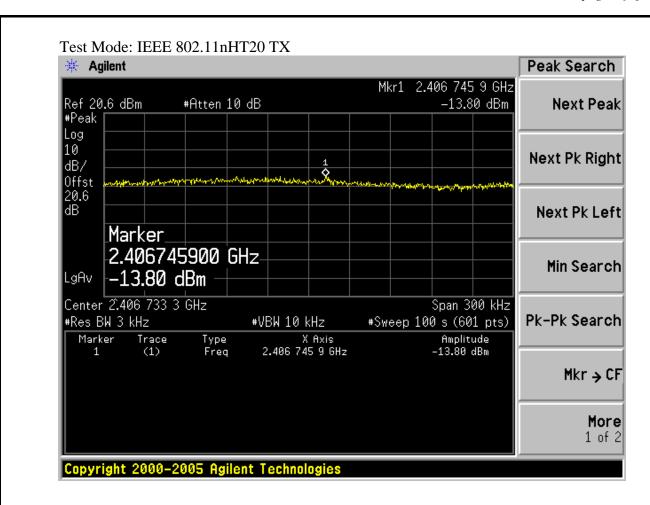


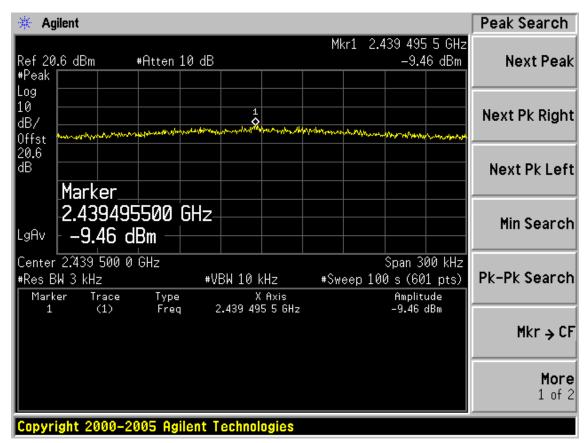




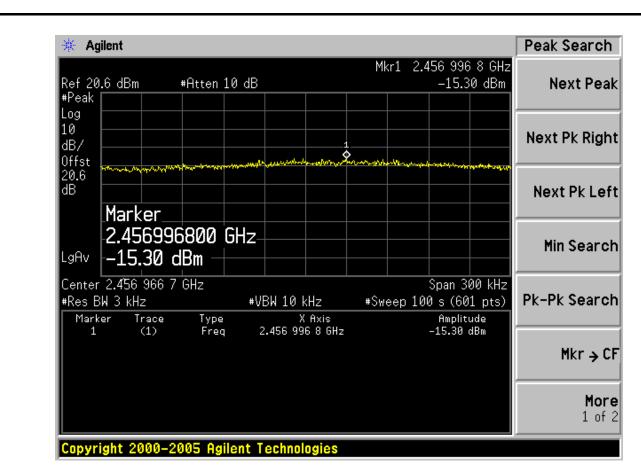




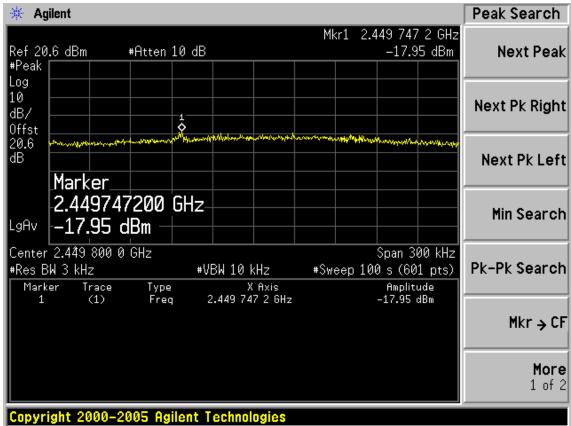




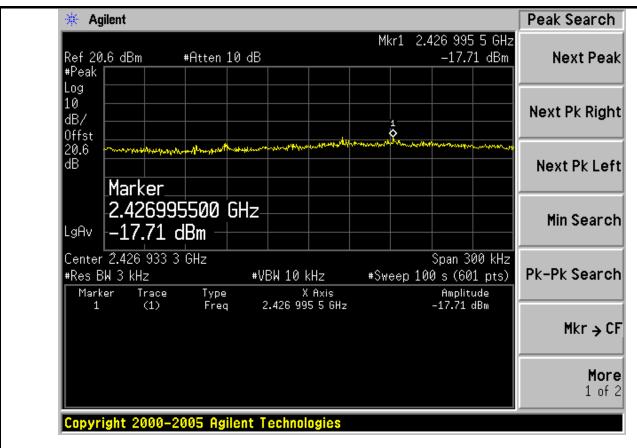


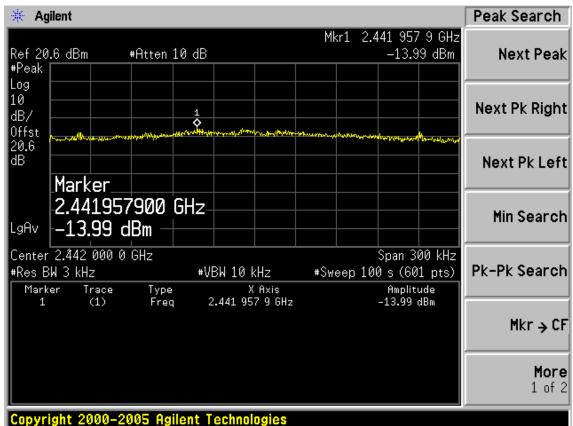


Test Mode: IEEE 802.11nHT40 TX











## 10. ANTENNA REQUIREMENT

#### 10.1 STANDARD APPLICABLE

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

#### 10.2 ANTENNA CONNECTED CONSTRUCTION

The antennas used for this product is dipole antenna with SMA-B connecter 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 4dBi.



11.DEVIATION TO TEST SPECIFICATIONS
[ NONE]