

FCC PART 15C TEST REPORT FOR CERTIFICATION On Behalf of

Proware Technologies Co., Ltd.

300M Wireless N Mini PCI Module

Model No.: PW-MN561

FCC ID: WWMMN561V3

Prepared for: Proware Technologies Co., Ltd.

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

District, Shenzhen

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

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Report Number : ACS-F11184

Date of Test : Aug.18~28, 2011

Date of Report : Sep.08, 2011



TABLE OF CONTENTS

SC1	ription	Page
	SUMMARY OF STANDARDS AND RESULTS	1.1
	1.1. Description of Standards and Results	
	GENERAL INFORMATION	
	2.1. Description of Device (EUT)	
	2.2. Test Information	
	2.3. Tested Supporting System Details	
	2.4. Block diagram of connection between the EUT and simulators	
	2.5. Test Facility	2-4
	2.6. Measurement Uncertainty (95% confidence levels, k=2)	
	POWER LINE CONDUCTED EMISSION TEST	3-1
	3.1. Test Equipments	
	3.2. Block Diagram of Test Setup	3-1
	3.3. Power Line Conducted Emission Test Limits	
	3.4. Configuration of EUT on Test	
	3.6. Test Procedure	
	3.7. Power Line Conducted Emission Test Results	
	RADIATED EMISSION TEST	
	4.1. Test Equipment	
	4.2. Block Diagram of Test Setup	
	4.3. Radiated Emission Limit	
	4.4. EUT Configuration on Test	
	4.5. Operating Condition of EUT	
	4.6. Test Procedure	
	4.7. Radiated Emission Test Results	
	CONDUCTED SPURIOUS EMISSIONS	
	5.1. Test Equipment	
	5.2. Limit	
	5.3. Test Procedure	
	BAND EDGE COMPLIANCE TEST	
	6.1. Test Equipment	
	6.2. Limit	
	6.4. Test Results	
	6dB Bandwidth Test	
	7.1. Test Equipment	
	7.1. Test Equipment	
	7.3. Test Procedure	
	7.4. Test Results	
	OUTPUT POWER TEST	8-1
	8.1. Test Equipment	
	8.2. Limit (FCC Part 15C 15.247 b(3))	
	8.3. Test Procedure	
	8.4. Test Results	8-2



FCC ID:WWMMN561V3

AUDIX Technology (Shenzhen) Co., Ltd.

	9.1. Test Equipment	9-1
	9.2. Limit	9-1
	9.3. Test Procedure	9-1
	9.4. Test Results	9-2
10.	ANTENNA REQUIREMENT	10-1
	10.1. STANDARD APPLICABLE	10-1
	10.2. ANTENNA CONNECTED CONSTRUCTION	10-1
11.	MPE ESTIMATION	11-1
	11.1. Limit for General Population/ Uncontrolled Exposures	11-1
	11.2. Estimation Result	11-2
12.	DEVIATION TO TEST SPECIFICATIONS	12-1
13.	PHOTOGRAPH OF TEST	13-1
	13.1. Photos of Power Line Conducted Emission Test	13-1
	13.2. Photos of Radiated Emission Test	13-2
14.	PHOTOGRAPH OF EUT	14-1



TEST REPORT CERTIFICATION

Applicant : Proware Technologies Co., Ltd.

Manufacturer : Proware Technologies Co., Ltd.

EUT Description : 300M Wireless N Mini PCI Module

FCC ID : WWMMN561V3

(A) MODEL NO. : PW-MN561

(B) SERIAL NO. : N/A

(C) POWER SUPPLY: DC 3.3V From PC Input

(D) TEST VOLTAGE: DC 3.3V From PC 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. This report contains data that are not covered by the NVLAP accreditation. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC and IC requirements.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

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.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Prepared by:

| Blove Ye / Assistant | Stamp only for EMC | Dept. Report | Signature: | Le | Lu / Manager | Ken Lu / Manager | Ken Lu / Manager | Ken Lu / Manager | Lu /



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: WWMMN561V3 page 2-1

2. GENERAL INFORMATION

2.1.Description of Device (EUT)

Product Name : 300M Wireless N Mini PCI Module

Model Number : PW-MN561

FCC ID : WWMMN561V3

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: 6Channels

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

IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20, HT40: OFDM (64QAM, 16QAM,

QPSK,BPSK)

Antenna Assembly

Gain

MIMO 2X2 Dipole Antenna, 0dBi Gain

Applicant : Proware Technologies Co., Ltd.

2nd 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

Date of Test : Aug. 18~28, 2011

Date of Receipt : Aug.17, 2011

Sample Type : Prototype production



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 informa	ation	
Mode	data rate	Channel	Frequency
	(Mpbs)(see Note)		(MHz)
IEEE 802.11b	1	Low:CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
IEEE 802.11g	6	Low:CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
IEEE 802.11n HT20	6.5	Low:CH1	2412
	6.5	Middle: CH6	2437
	6.5	High: CH11	2462
IEEE 802.11n HT40	13.5	Low:CH1	2422
	13.5	Middle: CH4	2437
	13.5	High: CH7	2452

Note1: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.

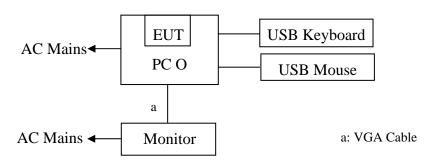
Note2:This device use MIMO 2X2 antennas, for 802.11b/g mode, based exploratory test, when transmit with Chain 2 have worse emissions, so the final radiated emissions test for 802.11b/g mode were tested with chain 2 transmit mode.



2.3. Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number	Approved type	
1	Personal	Test PC O	DELL	Studio 540	H14XK2X	☑FCC DoC ☑BSMI ID:R33002	
1	_	Power Cord: Unshie Display Card: HD36		•			
2	Monitor	ACS-EMC-LM04R	DELL	1907FPt	CN-009759-71618 -6AP-ACPP	☑FCC DoC ☑BSMI ID: R3A002	
2		Power Cord: Unshielded, Detachable, 1.8m VGA Cable: Shielded, Detachable, 2.0m (with two cores) DVI Cable: Shielded, Detachable, 2.0m (with two cores)					
3	USB Keyboard	ACS-EMC- K03R	DELL	SK-8115	CN-ODJ313-7161 6-711-04WJ	☑ FCC DoC ☑BSMI ID: T3A002	
		Power Cord: shielde	d, Undetachab	le, 2.0m			
4	USB Mouse	ACS-EMC-M03R	DELL	M056UO	512023253	☑ FCC DoC ☑BSMI ID: R41108	
		Power Cord: shielde	d, Undetachab	le, 1.8m			

2.4. Block diagram of connection between the EUT and simulators



(EUT: 300M Wireless N Mini PCI Module)



FCC ID: WWMMN561V3 page 2-4

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 : Certificated by FCC, USA

Registration Number: 90454 Valid Date: Mar.31, 2012

3m & 10m Anechoic Chamber : Certificated by FCC, USA

Registration Number: 794232 Valid Date: Dec.30, 2012

EMC Lab. : Certificated by Industry Canada

Registration Number: IC 5183A-1

Valid Date: Jun.13, 2014

: Certificated by DAkkS, Germany Registration No: D-PL-12151-01-01

Valid Date: Feb.01, 2014

Accredited by NVLAP, USA NVLAP Code: 200372-0 Valid Date: Mar.31, 2012



FCC ID: WWMMN561V3 page 2-5

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

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	3.2 dB(150kHz to 30MHz)
	3.6 dB(30~200MHz, Polarize: H)
Uncertainty for Radiation Emission test	3.7 dB(30~200MHz, Polarize: V)
in 3m chamber	4.0 dB(200M~1GHz, Polarize: H)
	3.7 dB(200M~1GHz, Polarize: V)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.57dB
Uncertainty for Conduction Spurious emission test	2.00 dB
Uncertainty for Output power test	0.73 dB
Uncertainty for Power density test	2.00 dB
Uncertainty for Frequency range test	$7x10^{-8}$
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and	0.6℃
humidity	3%

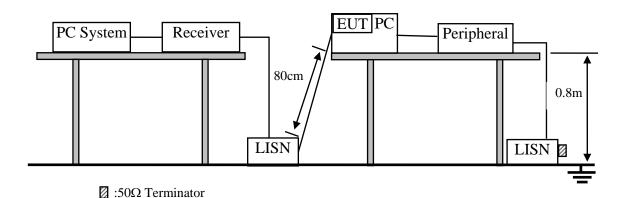


3. POWER LINE CONDUCTED EMISSION TEST

3.1.Test Equipments

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	838693/001	Nov.05, 10	1 Year
2.	L.I.S.N.#1	Rohde & Schwarz	ESH2-Z5	834066/011	Nov.05, 11	1 Year
3.	Terminator	Hubersuhner	50Ω	No. 1	May.08, 11	1 Year
4.	RF Cable	Fujikura	3D-2W	LISN Cable 1#	May.08, 11	1Year
5.	Coaxial Switch	Anritsu	MP59B	M55367	May.08, 11	1 Year
6.	Passive Probe	Rohde & Schwarz	ESH2-Z3	299.7810.52	May.08, 11	1 Year
7.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100341	May.08, 11	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: WWMMN561V3 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.

3.4.1.300M Wireless N Mini PCI Module (EUT)

Model Number : PW-MN561

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 O 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 PC 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.

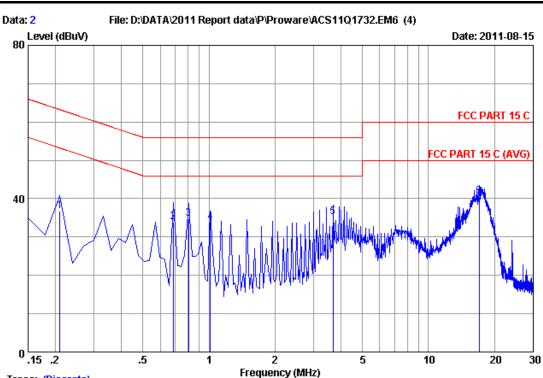
The bandwidth of test receiver (R & S ESHS10) is set at 10kHz.

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:WWMMN561V3 page 3-3



Trace: (Discrete)

Site no :1#conduction Data No :2

Dis./Ant. :** 2011 ESH2-Z5 LINE

Limit :FCC PART 15 C

Env./Ins. :29.5*C/55% Engineer :Leo-Li

EUT :300M Wireless N Mini PCI Module Power Rating :DC 3.3V From PC Input AC 120V/60Hz

Test Mode :Tx Mode

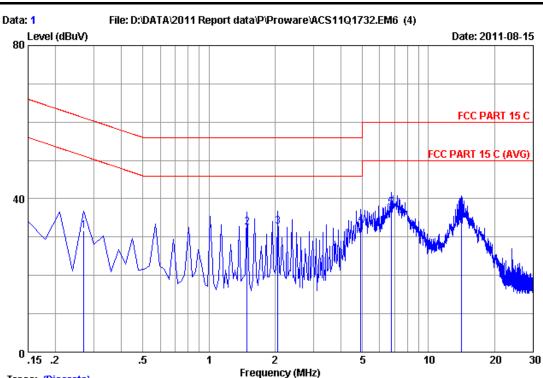
M/N:PW-MN561

		LISN	Cable		Emissio	n		
No	Freq	Factor	Loss	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dB)	
1	0.20970	0.17	9.98	26.52	36.67	63.22	26.55	QP
2	0.68730	0.19	9.97	23.78	33.94	56.00	22.06	QP
3	0.80670	0.21	9.97	24.52	34.70	56.00	21.30	QP
4	1.016	0.23	9.98	23.56	33.77	56.00	22.23	QP
5	3.672	0.34	9.94	24.96	35.24	56.00	20.76	QP
6	16.985	0.98	9.96	29.61	40.55	60.00	19.45	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: WWMMN561V3 page 3-4



Trace: (Discrete)

Site no :1#conduction Data No :1

Dis./Ant. :** 2011 ESH2-Z5 NEUTRAL

Limit :FCC PART 15 C

Env./Ins. :29.5*C/55% Engineer :Leo-Li

EUT :300M Wireless N Mini PCI Module Power Rating :DC 3.3V From PC Input AC 120V/60Hz

Test Mode :Tx Mode M/N:PW-MN561

LISN Cable Emission No Freq Factor Loss Reading Level Limits Margin Remark (MHz) (dB) (dBuV) (dBuV) (dBuV) (dB) 1 0.26940 0.21 9.98 21.50 31.69 61.14 0.25 9.97 22.22 32.44 56.00 23.56 1.493 OP 2.060 0.27 9.96 22.47 32.70 56.00 4 4.926 0.33 9.93 22.94 33.20 56.00 22.80 OP 5 6.747 0.38 9.92 27.43 37.73 60.00 22.27 OP 23.17 14.090 0.57 9.92 26.34 36.83 60.00

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.



4. RADIATED EMISSION TEST

4.1.Test Equipment

Frequency rang: 30~1000MHz

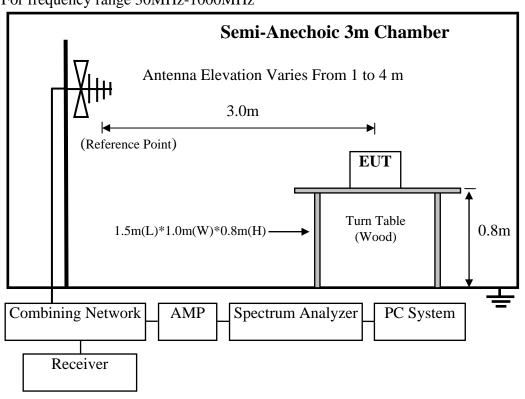
	equently rung.			<u> </u>	5	
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.06,10	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 11	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 11	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 11	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2598	Oct.26, 10	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 11	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 11	1 Year

Frequency rang: above 1GHz~18GHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4407B	MY41440292	May.08, 11	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	July.01, 11	1 Year
3	Amplifier	Agilent	8449B	3008A00863	May.08, 11	1 Year
4	RF Cable	Hubersuhner	SUCOFLEX102	28622/2	May.08, 11	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	May.08, 11	1 Year

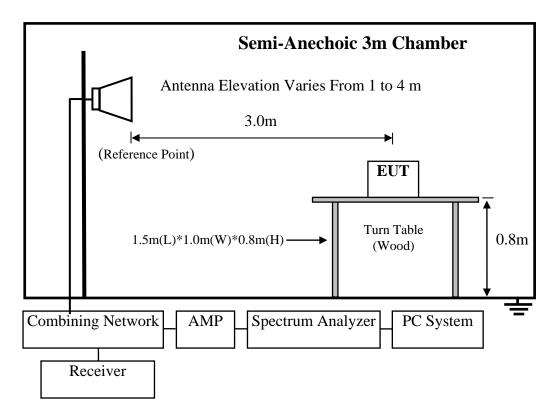
4.2.Block Diagram of Test Setup

For frequency range 30MHz-1000MHz





For frequency range above 1GHz~18GHz



4.3. Radiated Emission Limit

4.3.1.15.209 limits

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



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

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

4.4.EUT Configuration on Test

The configurations of EUT are listed in Section 3.5.

4.5. Operating Condition of EUT

Same as Conducted Emission test that is listed in Section 3.6. except the test set up replaced by Section 4.2.

4.6.Test Procedure

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

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

The bandwidth of the Spectrum's VBW is set at 3MHz and RBW is set at 1MHz for peak emissions measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emissions measure above 1GHz

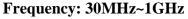
The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

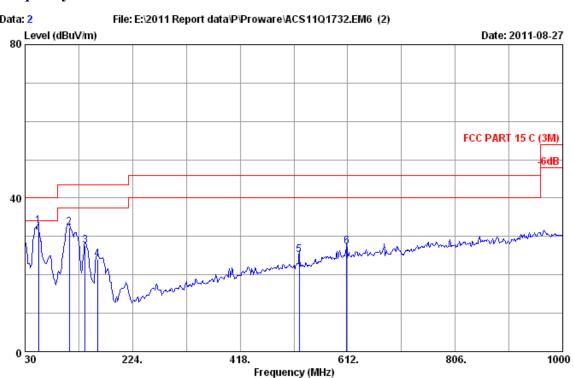


page 4-4

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.







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

Dis. / Ant. : 3m 2010 CBL6111C 2598 Ant. pol. : HORIZONTAL

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

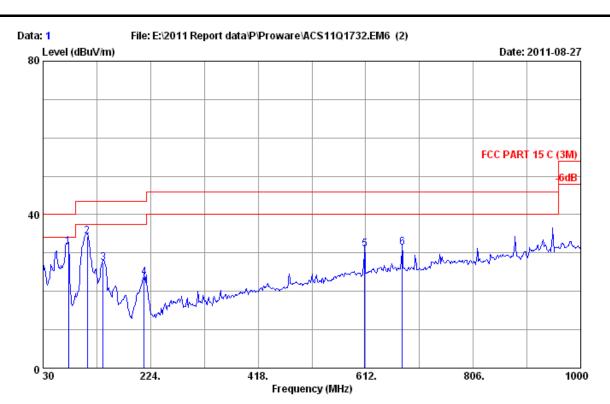
EUT : 300M Wireless N Mini PCI Module Power rating : DC 3.3V From PC Input AC 120V/60Hz

Test Mode : Tx Mode M/N:PW-MN561

No.	Freq.	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark	
1	54.250	7.54	0.86	24.25	32.65	40.00	7.35	QP	
2	109.540	11.40	1.24	19.76	32.40	43.50	11.10	QP	
3	138.640	12.02	1.43	14.10	27.55	43.50	15.95	QP	
4	160.950	11.02	1.57	11.58	24.17	43.50	19.33	QP	
5	524.700	18.35	4.12	2.78	25.25	46.00	20.75	QP	
6	610.060	19.70	4.55	3.06	27.31	46.00	18.69	QP	

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

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



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

Dis. / Ant. : 3m 2010 CBL6111C 2598 Ant. pol. : VERTICAL

Limit : FCC PART 15 C (3M)

Env. / Ins. : 24*C/56% Engineer : Leo-L:

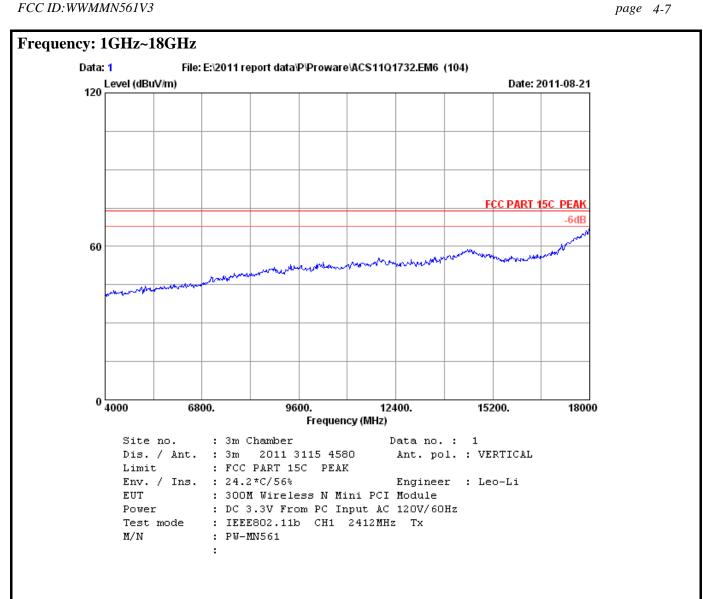
EUT : 300M Wireless N Mini PCI Module Power rating : DC 3.3V From PC Input AC 120V/60Hz

Test Mode : Tx Mode M/N:PW-MN561

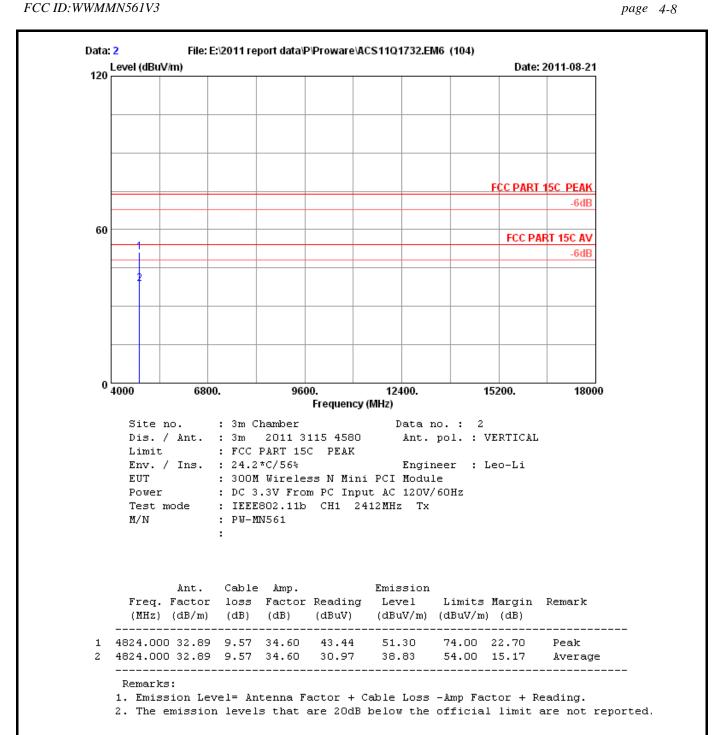
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	75.590	7.38	1.01	23.31	31.70	40.00	8.30	QP
2	109.540	11.40	1.24	21.63	34.27	43.50	9.23	QP
3	138.640	12.02	1.43	13.85	27.30	43.50	16.20	QP
4	212.360	10.06	1.97	11.68	23.71	43.50	19.79	QP
5	610.060	19.70	4.55	6.75	31.00	46.00	15.00	QP
6	677.960	20.72	4.89	5.80	31.41	46.00	14.59	QP

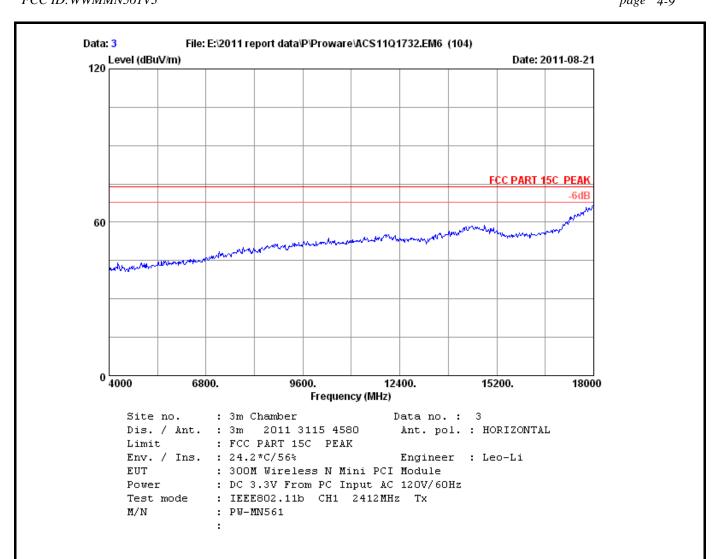
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.

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



CCC ID. WWW.MN1541W2

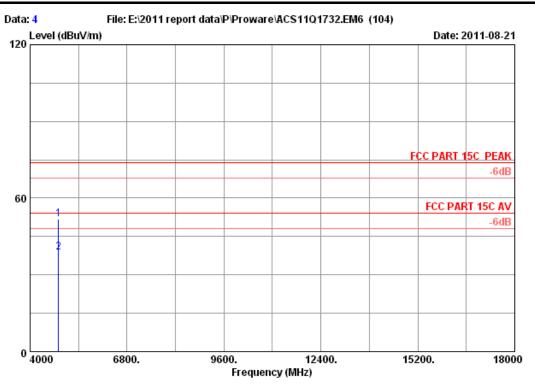




FCC ID: WWMMN561V3

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-10



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

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

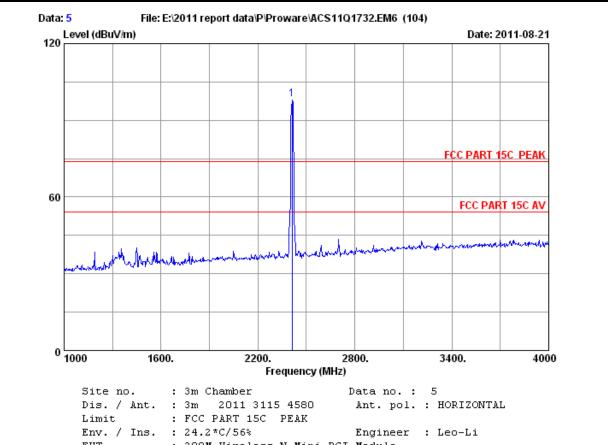
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH1 2412MHz Tx

M/N : PW-MN561

:

	Ant. Freq. Facto (MHz) (dB/m		Factor	_			_	Remark	
1	4824.000 32.8	9 9.57	34.60	44.12	51.98	74.00	22.02	Peak	
2	4824.000 32.8	9 9.57	34.60	30.94	38.80	54.00	15.20	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.



Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH1 2412MHz Tx

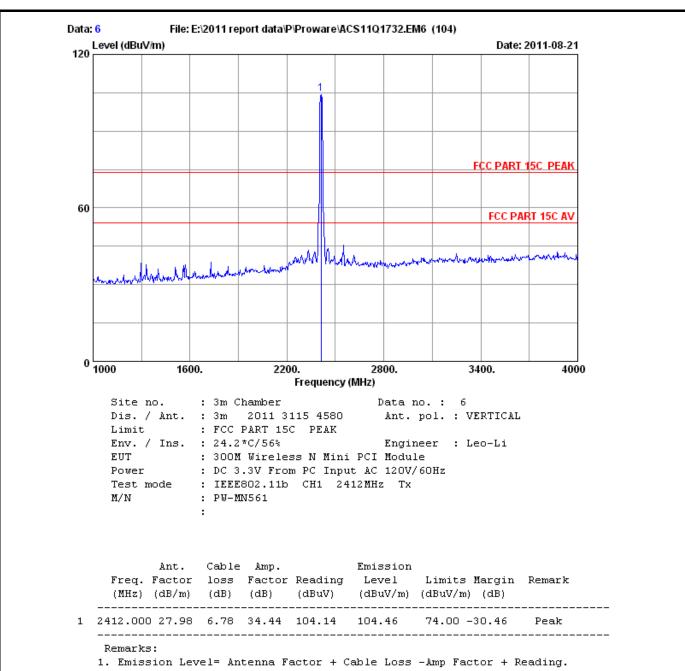
M/N : PW-MN561

:

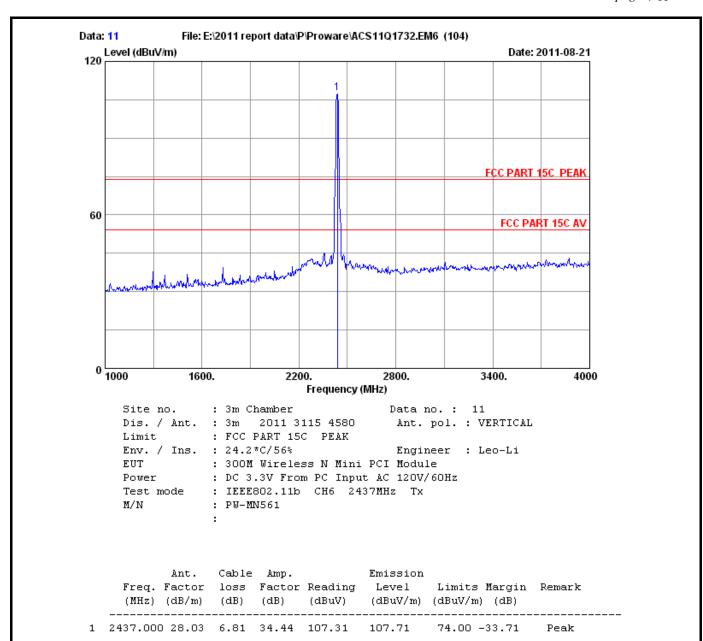
	Ant.	Cable	Amp.		Emission		
Freq.	Factor	loss	Factor	Reading	Level	Limits Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m) (dB)	
0.440 000		6 70	04 44	00.05	00.07	74 00 04 07	D 1-

1 2412.000 27.98 6.78 34.44 97.95 98.27 74.00 -24.27 Peak

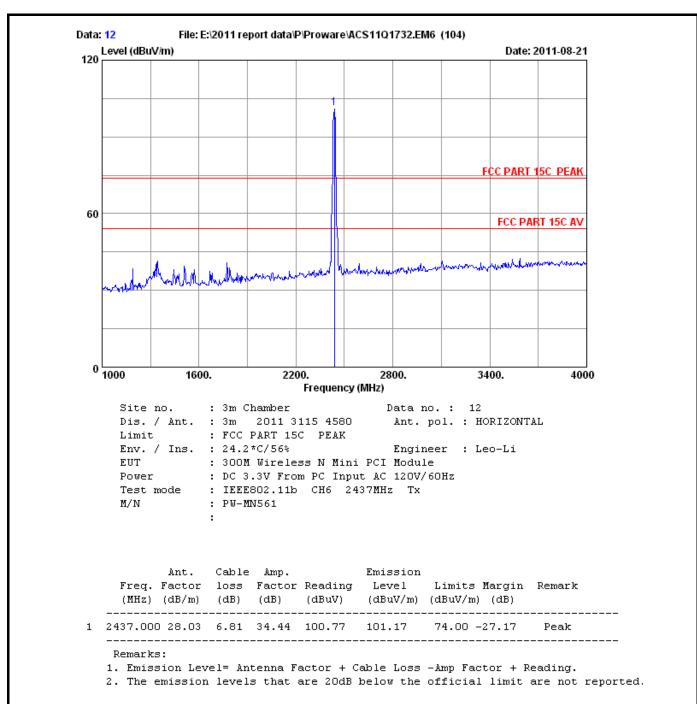
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



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



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

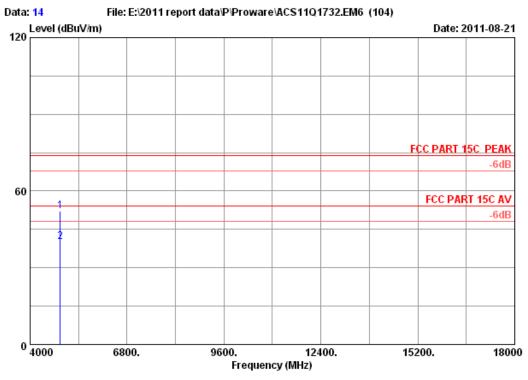




FCC ID: WWMMN561V3

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-16



Site no. : 3m Chamber Data no. : 14

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH6 2437MHz Tx

M/N : PW-MN561

:

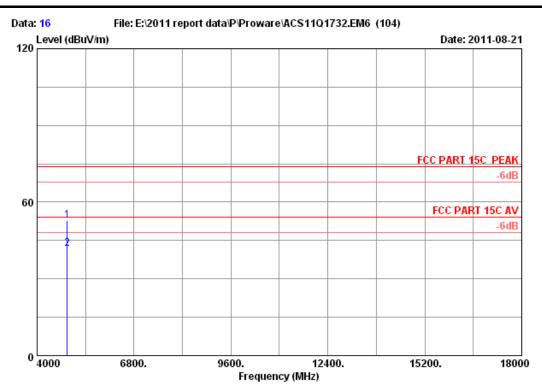
	•	Factor		Factor	_	Emission Level (dBuV/m)		_	Remark
1	4874.000	32.98	9.62	34.60	44.21	52.21	74.00	21.79	Peak
2	4874.000	32.98	9.62	34.60	32.05	40.05	54.00	13.95	Average

- 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: WWMMN561V3

page 4-18



Site no. : 3m Chamber Data no. : 16

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

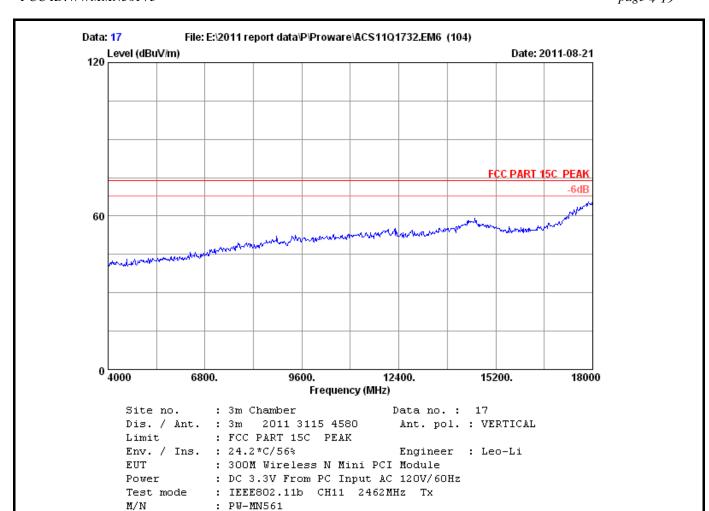
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH6 2437MHz Tx

M/N : PW-MN561

:

	Ant. Freq. Factor (MHz) (dB/m)	Factor	_	Emission Level (dBuV/m)		_	Remark
_	4874.000 32.98 4874.000 32.98	 		52.92 41.87	74.00 54.00		Peak Average

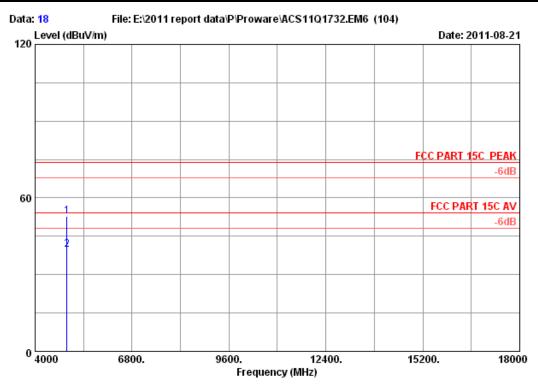
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



FCC ID: WWMMN561V3

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-20



Site no. : 3m Chamber Data no. : 18
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11b CH11 2462MHz Tx

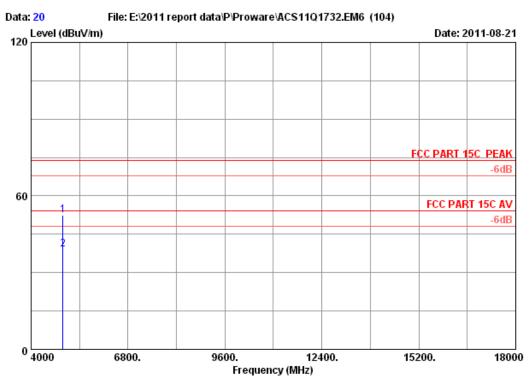
M/N : PW-MN561

:

-	Factor	loss	_	Emission Level (dBuV/m)		_	Remark	
4924.000			 	52.91 39.85	74.00 54.00		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.





Site no. : 3m Chamber Data no. : 20

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

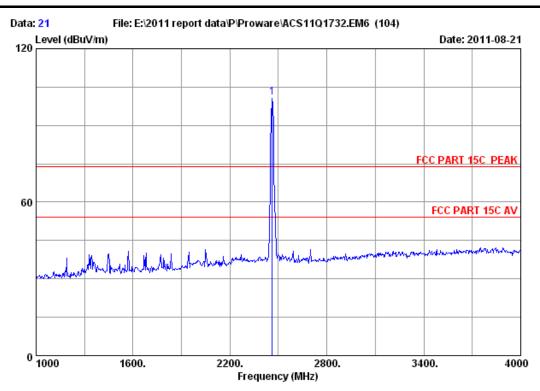
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-MN561

:

Freq. F	loss	Factor	Reading	Emission Level (dBuV/m)		_	Remark
4924.000 4924.000	 		44.31 30.97	52.45 39.11	74.00 54.00		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.



Site no. : 3m Chamber Data no. : 21

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-MN561

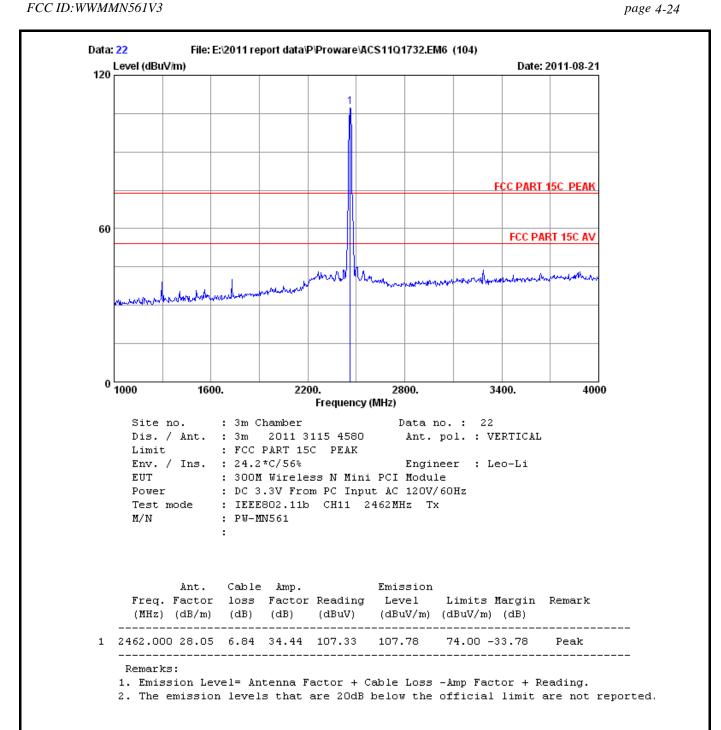
:

	Ant.	Cable	Amp.		Emission		
-				_		Limits Margin (dBuV/m) (dB)	Remark
2462.000	28.05	6.84	34.44	100.51	100.96	74.00 -26.96	Peak

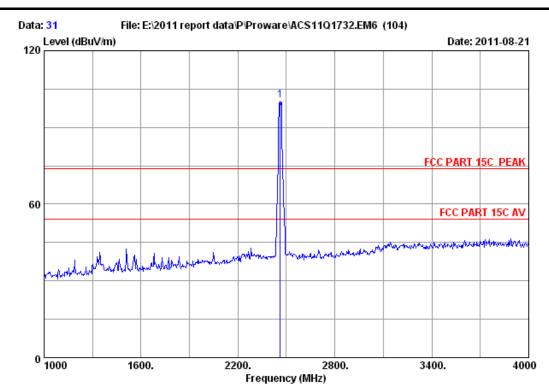
2462.000 28.05 6.84 34.44 100.51 100.96 74.00 -26.96 Peak

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

ECC ID WWW.MANSCINO







Site no. : 3m Chamber Data no. : 31

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

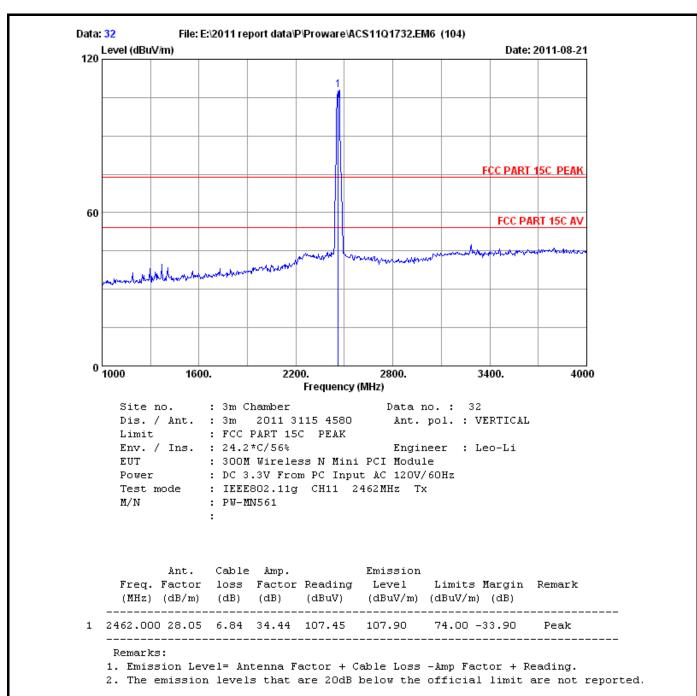
Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

: 300M Wireless N Mini PCI Module : DC 3.3V From PC Input AC 120V/60Hz Power Test mode : IEEE802.11g CH11 2462MHz Tx

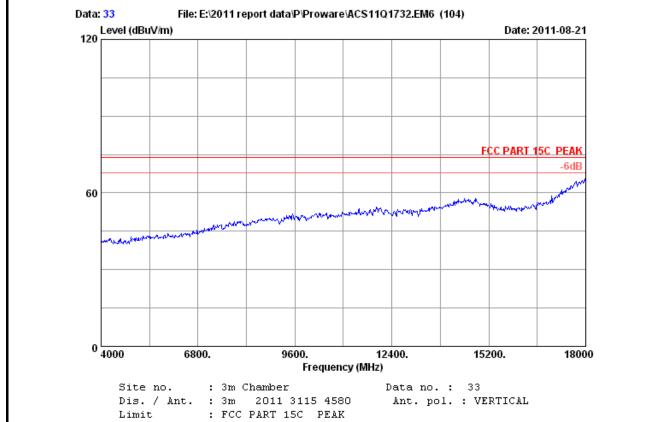
: PW-MN561

	Ant.	Cable	Amp.		Emission		
Freq.	Factor	loss	Factor	Reading	Level	Limits Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m) (dB)	
2462.000	28.05	6.84	34.44	100.29	100.74	74.00 -26.74	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.





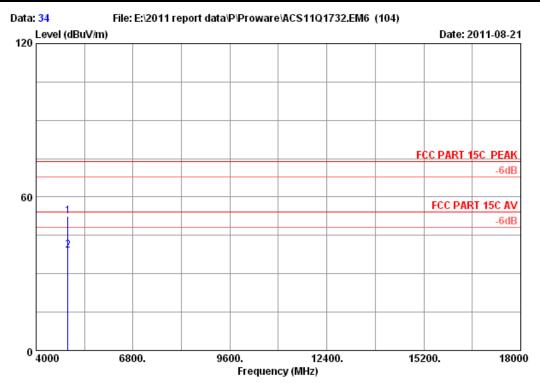


Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH11 2462MHz Tx

: PW-MN561 M/N





: 3m Chamber Site no. Data no.: 34 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

: FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

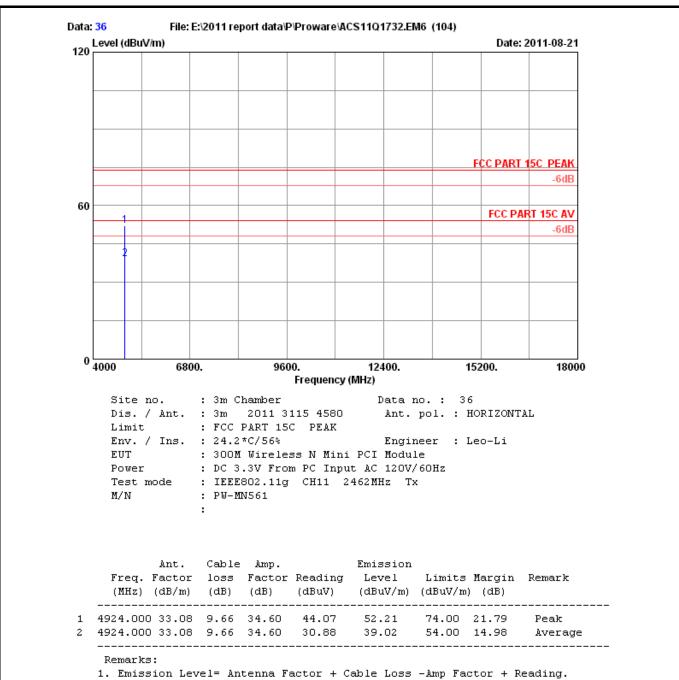
: 300M Wireless N Mini PCI Module : DC 3.3V From PC Input AC 120V/60Hz : IEEE802.11g CH11 2462MHz Tx Test mode

: PW-MN561 M/N

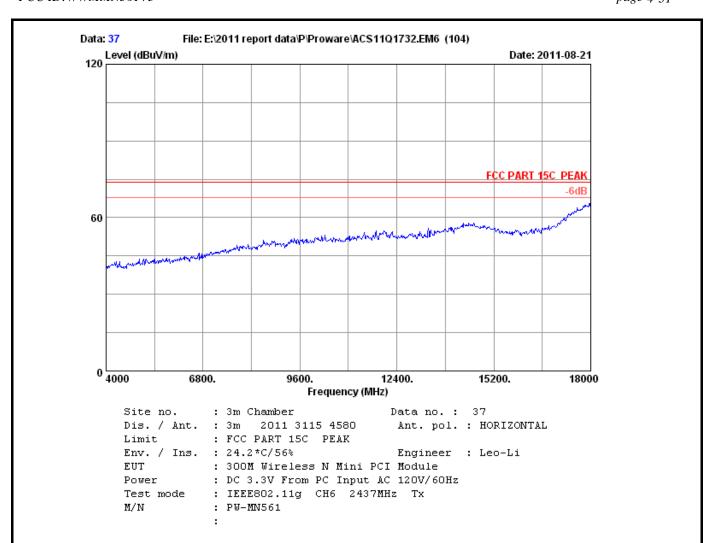
	Freq. Fa	actor		Factor	Reading	Emission Level (dBuV/m)		_	Remark
1	4924.000 3	3.08	9.66	34.60	44.36	52.50	74.00	21.50	Peak
2	4924.000 3	33.08	9.66	34.60	31.02	39.16	54.00	14.84	Average

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



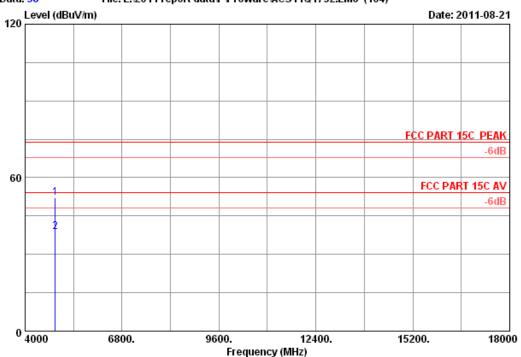


2. The emission levels that are 20dB below the official limit are not reported.









Site no. : 3m Chamber Dis. / Ant. : 3m 2011 3115 4580 Data no. : 38

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

: 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz

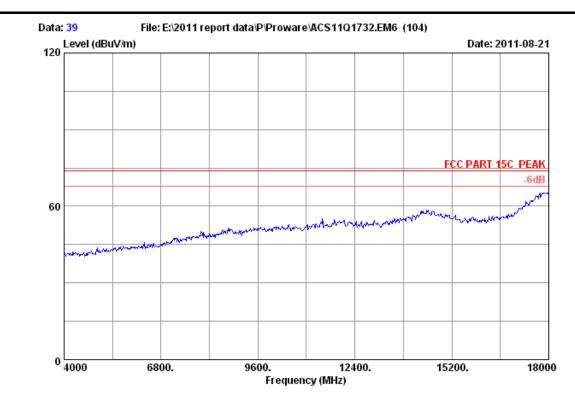
Test mode : IEEE802.11g CH6 2437MHz Tx

M/N : PW-MN561

	Freq. Factor	r Reading		Limits Margin (dBuV/m) (dB)	n Remark
_	4874.000 32.98 4874.000 32.98	 	52.15 38.75	74.00 21.85 54.00 15.25	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.

page 4-33



Site no. : 3m Chamber Data no. : 39

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

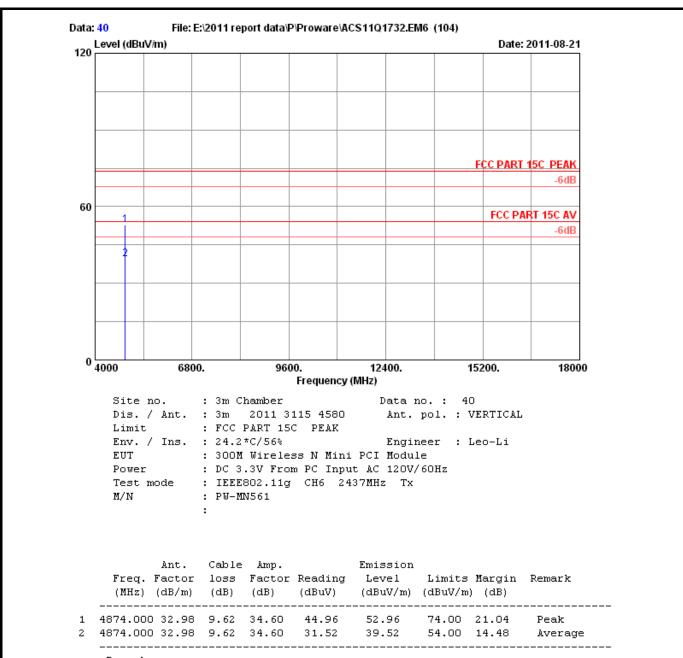
Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11g CH6 2437MHz Tx

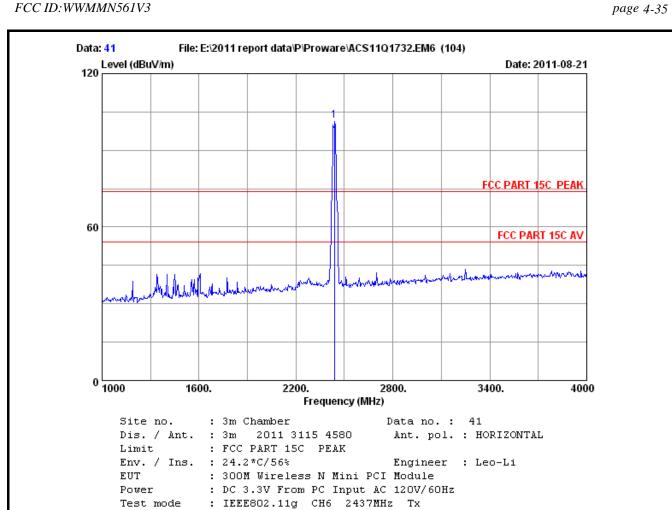
M/N : PW-MN561

:



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

CC ID WWW.MN561V2



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: PW-MN561

Ant. Cable Amp. Emission
Freq. Factor loss Factor Reading Level Limits Margin Remark

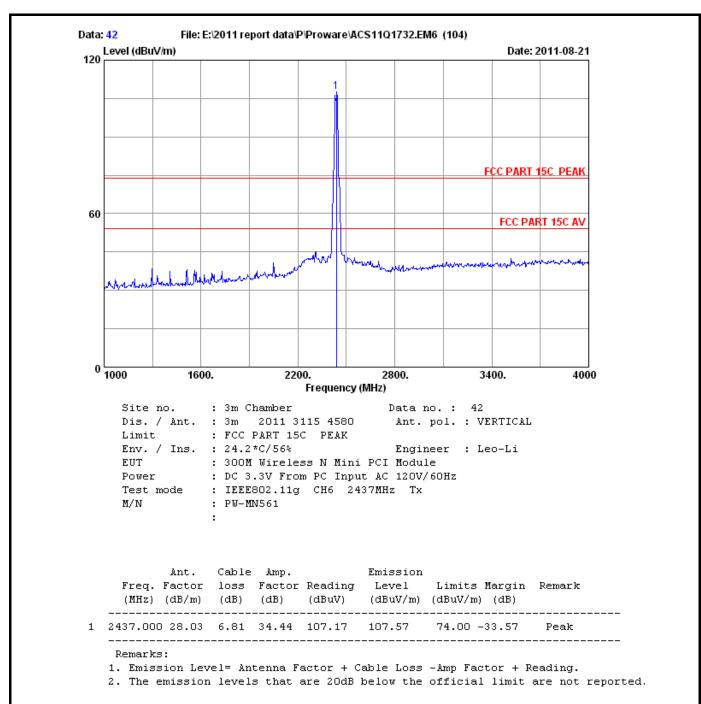
(MHz) (dB/m) (dB) (dB) (dBuV) (dBuV/m) (dBuV/m) (dB)

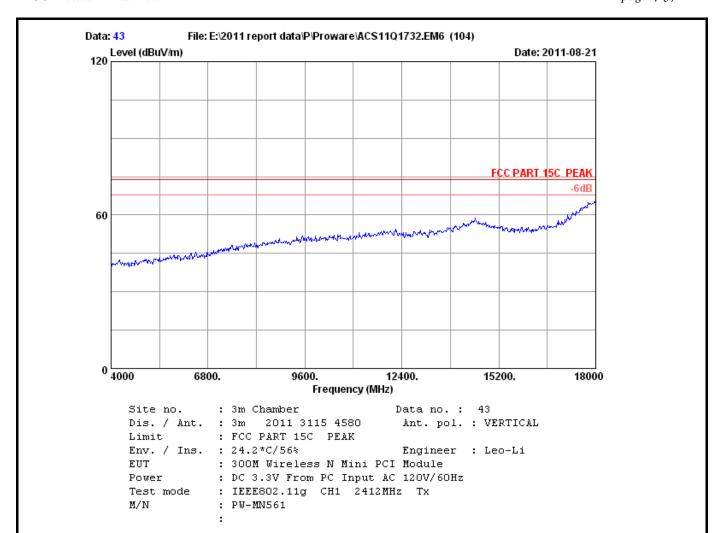
1 2437.000 28.03 6.81 34.44 101.12 101.52 74.00 -27.52 Peak

Remarks:

M/N

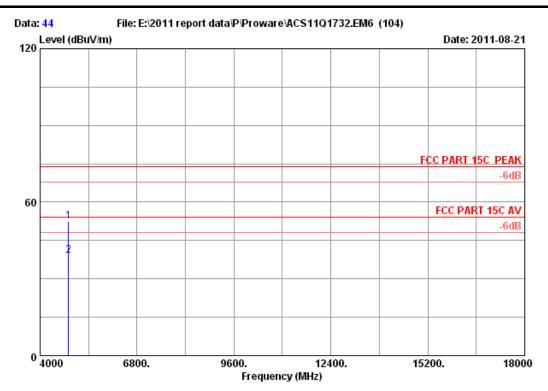
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.





AUDIX Technology (Shenzhen) Co., Ltd.

page 4-38



Site no. : 3m Chamber Data no. : 44

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-MN561

:

		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	32.89	9.57	34.60	44.59	52.45	74.00	21.55	Peak
2	4824.000	32.89	9.57	34.60	31.11	38.97	54.00	15.03	Average

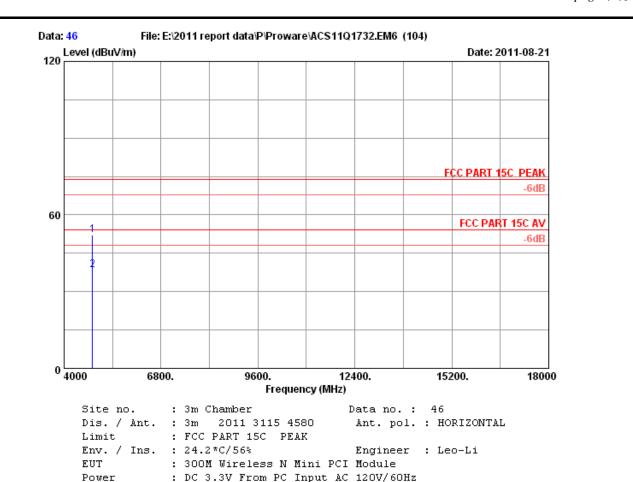
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

CCC ID. WWW.MN561W2



AUDIX Technology (Shenzhen) Co., Ltd.

page 4-40



	Freq. Fac	nt. Cable tor loss 3/m) (dB)	Factor	_			_	Remark
_	4824.000 32 4824.000 32			44.19 30.69	52.05 38.55	74.00 54.00		Peak Average

: IEEE802.11g CH1 2412MHz Tx

: PW-MN561

Remarks:

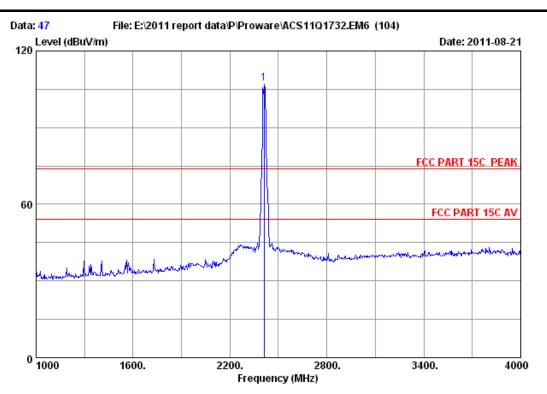
Test mode

M/N

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

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-41



Site no. : 3m Chamber Data no. : 47

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

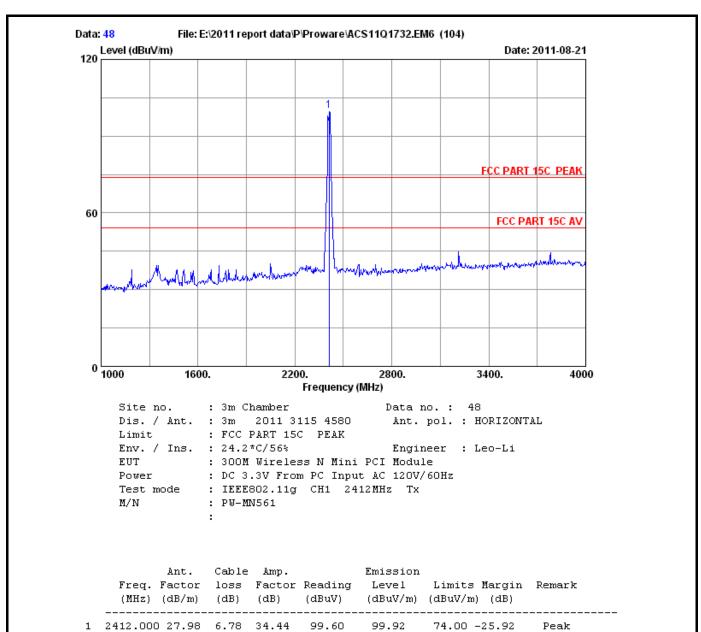
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-MN561

:

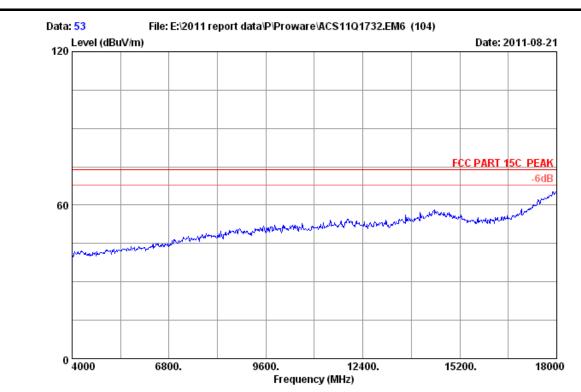
	Ant.	Cable	Amp.		Emission		
Freq.	Factor	loss	Factor	Reading	Level	Limits Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m) (dB)	
2412.000	27.98	6.78	34.44	106.82	107.14	74.00 -33.14	Peak

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



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

page 4-43



Site no. : 3m Chamber Data no. : 53

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

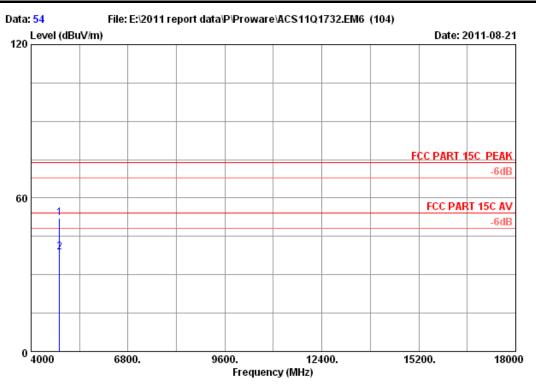
EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH1 2412MHz Tx

M/N : PW-MN561

:

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-44



Site no. : 3m Chamber Data no. : 54

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH1 2412MHz Tx

M/N : PW-MN561

:

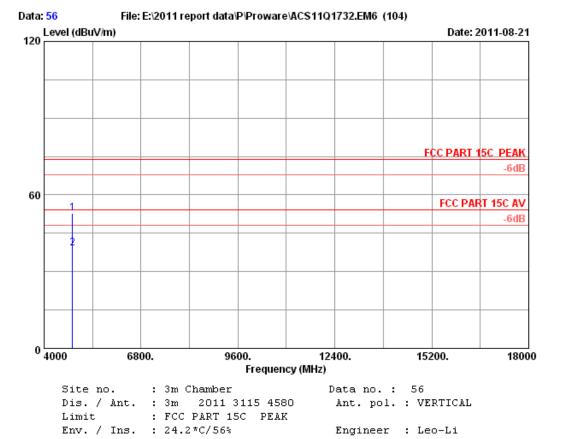
	-	Factor	loss	_	Emission Level (dBuV/m)		_	Remark
_	4824.000 4824.000			 	52.21 38.73	74.00 54.00		Peak Average

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



AUDIX Technology (Shenzhen) Co., Ltd.

page 4-46



EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH1 2412MHz Tx

M/N : PW-MN561

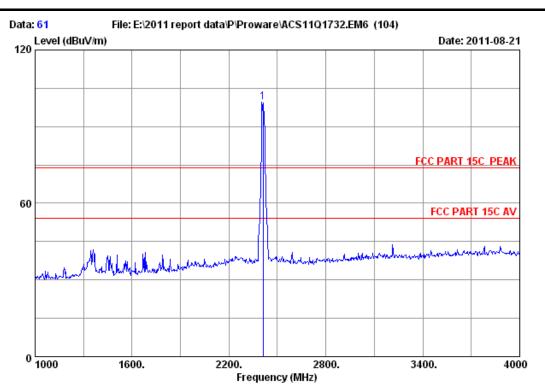
:

	-	Factor	loss	_	Emission Level (dBuV/m)		_	Remark	
_	4824.000 4824.000			 	52.78 39.12	74.00 54.00		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.

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-47



Site no. : 3m Chamber Data no. : 61

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT20 CH1 2412MHz Tx

M/N : PW-MN561

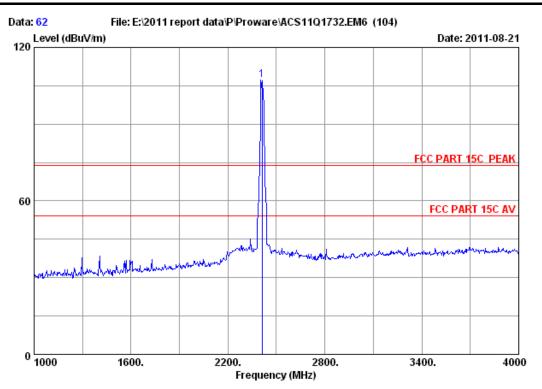
:

	Ant.	Cable	Amp.		Emission		
Freq.	Factor	loss	Factor	Reading	Level	Limits Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m) (dB)	
2412.000	27.98	6.78	34.44	99.37	99.69	74.00 -25.69	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.

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-48



Site no. : 3m Chamber Data no. : 62
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH1 2412MHz Tx

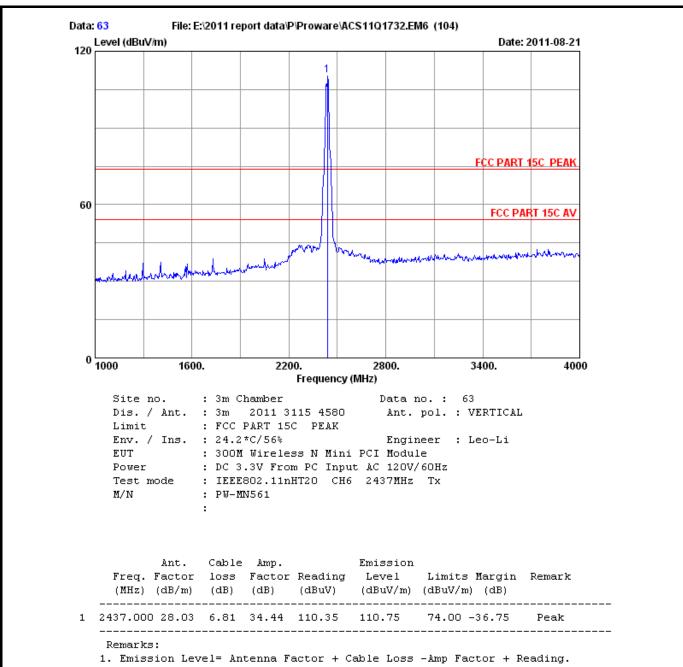
M/N : PW-MN561

:

	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 2412.000 27.98 6.78 34.44 107.12 107.44 74.00 -33.44 Peak

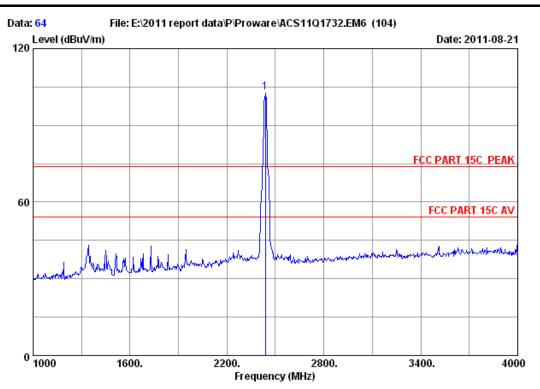
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



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

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-50



Site no. : 3m Chamber Data no. : 64

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

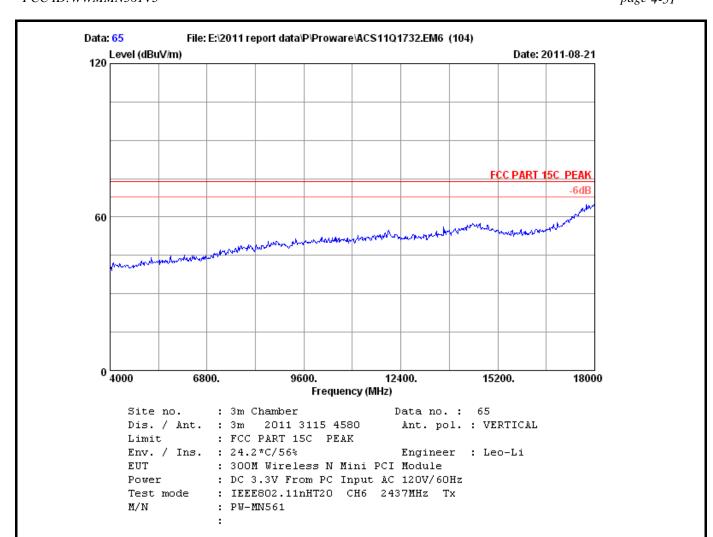
EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH6 2437MHz Tx

M/N : PW-MN561

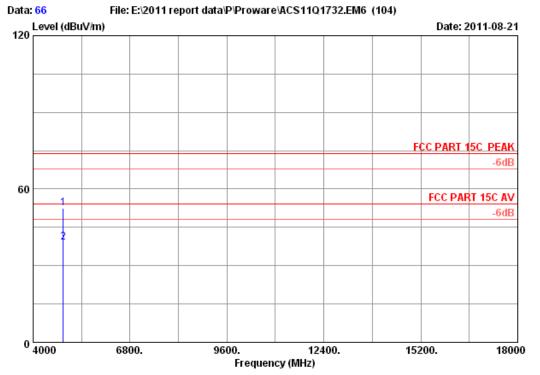
:

		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	2437.000	28.03	6.81	34.44	102.47	102.87	74.00 -28.87	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.







Site no. : 3m Chamber Data no. : 66
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT20 CH6 2437MHz Tx

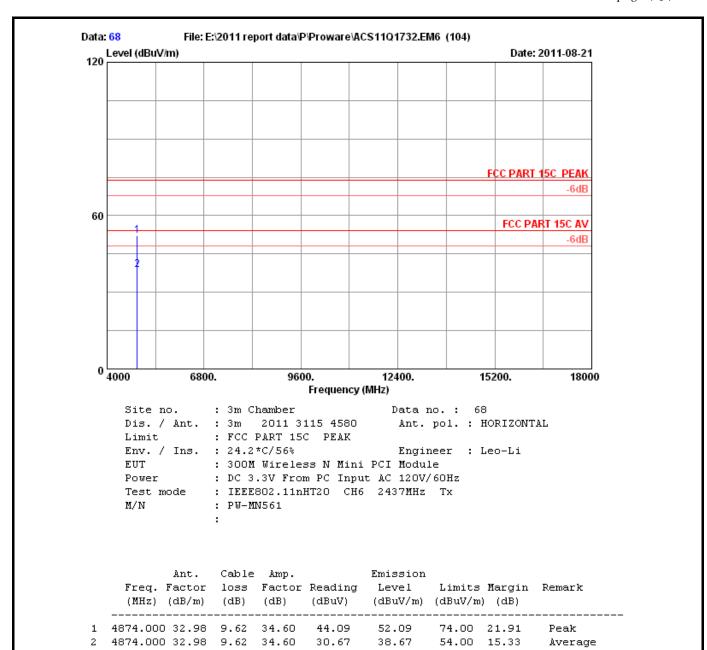
M/N : PW-MN561

:

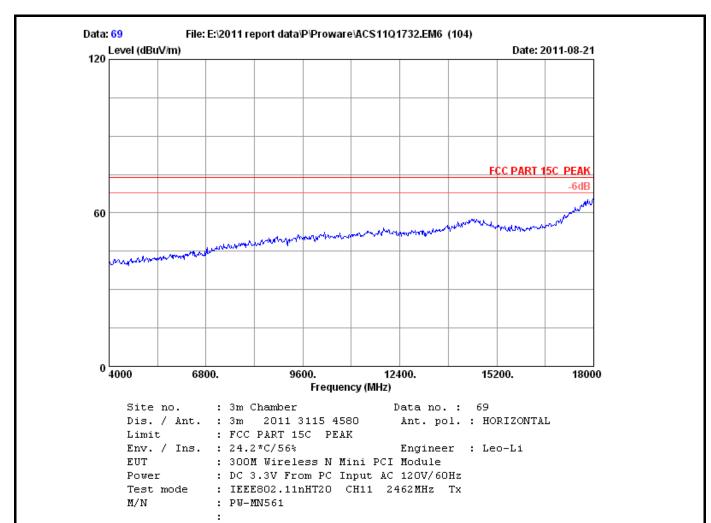
	Ant.	Cable	Amp.		Emission						
	Freq. Factor	loss	Factor	Reading	Level	Limits	Margin	Remark			
	(MHz) (dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)				
1	4874.000 32.98	9.62	34.60	44.55	52.55	74.00	21.45	Peak			
2	4874.000 32.98	9.62	34.60	31.12	39.12	54.00	14.88	Average			

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



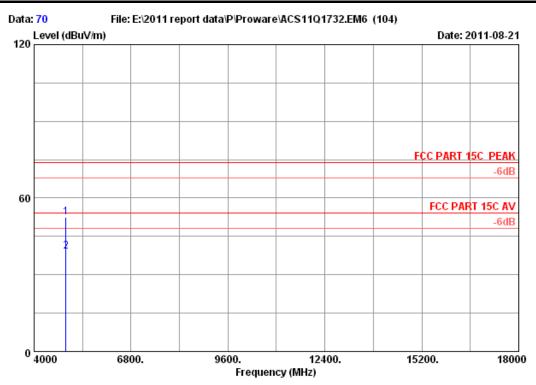


- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



AUDIX Technology (Shenzhen) Co., Ltd.

page 4-56



Site no. : 3m Chamber Data no. : 70

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

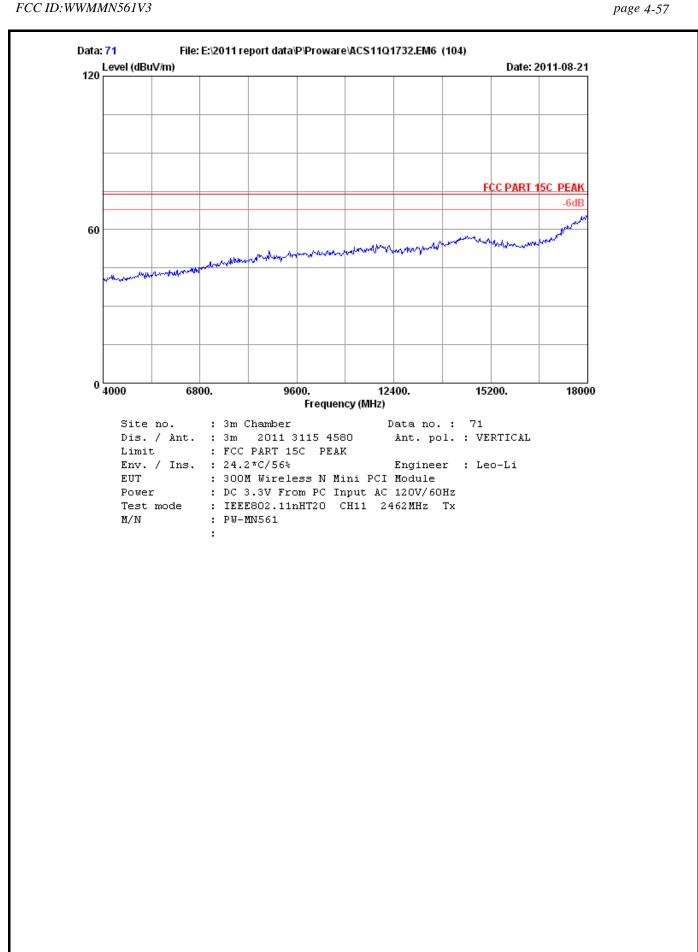
EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH11 2462MHz Tx

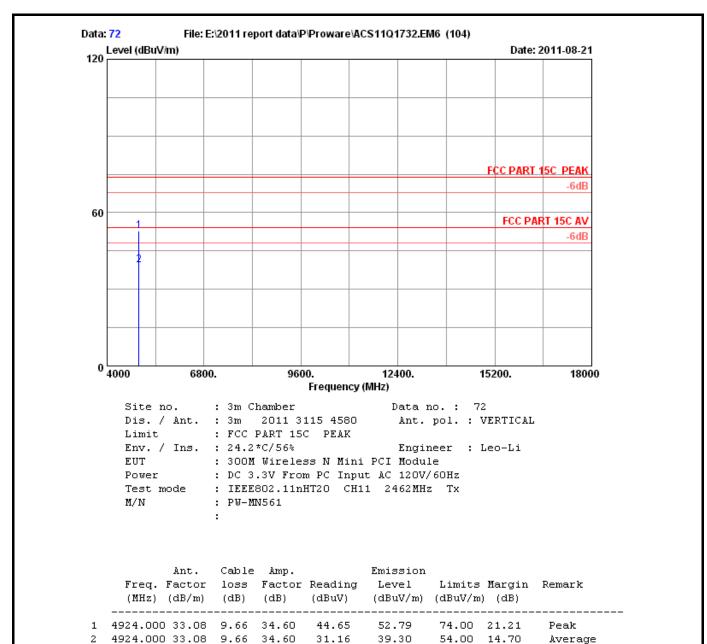
M/N : PW-MN561

:

	-		loss	Factor	_	Emission Level (dBuV/m)		_	Remark
1	4924.000	33.08	9.66	34.60	44.28	52.42	74.00	21.58	Peak
2	4924.000	33.08	9.66	34.60	30.81	38.95	54.00	15.05	Average

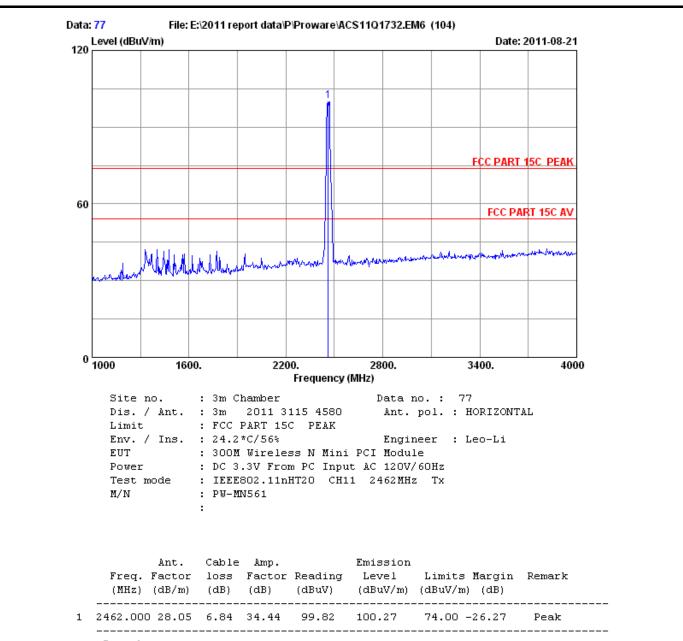
- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.





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

page 4-59

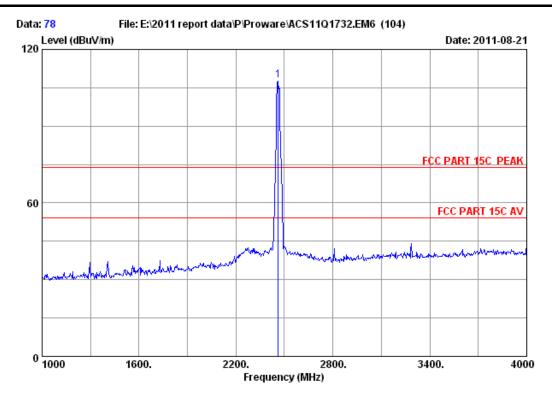


- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.

FCC ID: WWMMN561V3

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-60



Site no. : 3m Chamber Data no. : 78
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH11 2462MHz Tx

M/N : PW-MN561

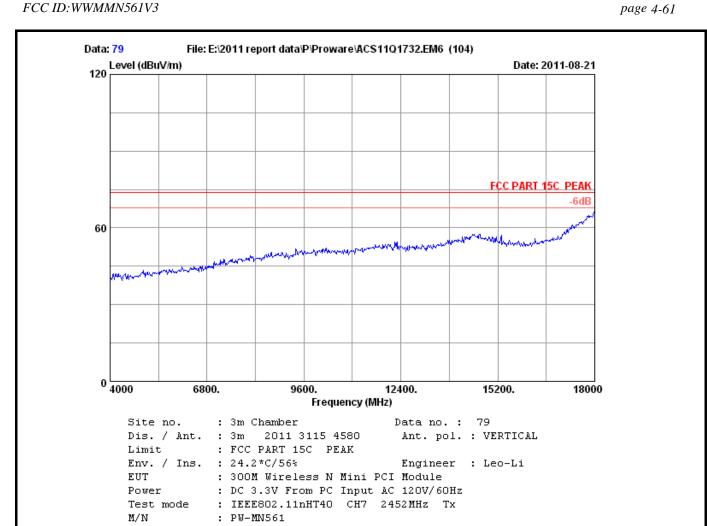
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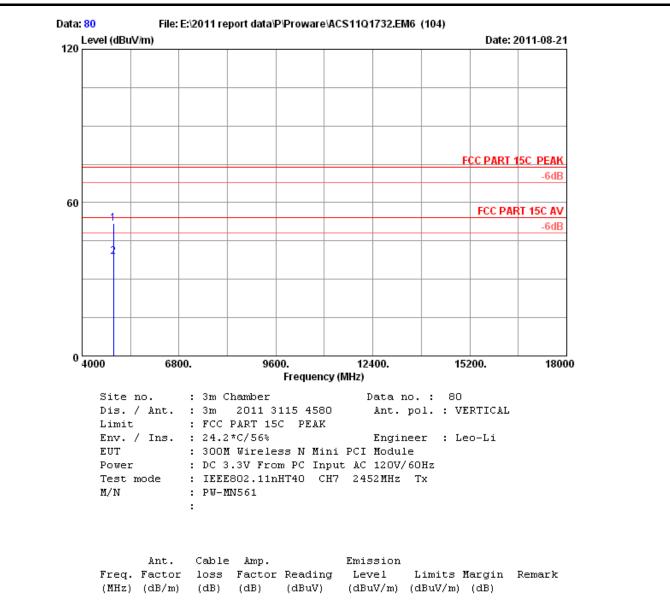
	Ant.	Cable	Amp.		Emission		
Freq.	Factor	loss	Factor	Reading	Level	Limits Margin	Remark
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m) (dB)	

1 2462.000 28.05 6.84 34.44 107.39 107.84 74.00 -33.84 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.

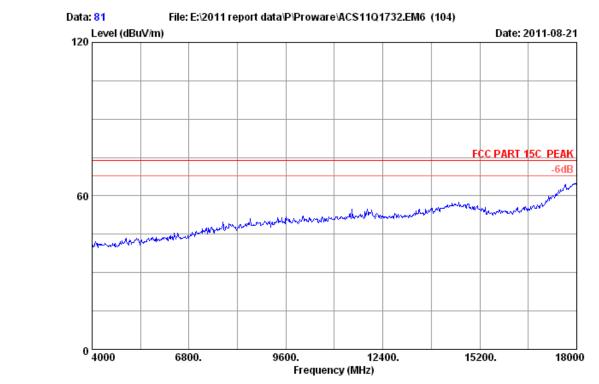
page 4-61





		Anc.	capie	Amp.		rmission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	4904.000	33.04	9.64	34.60	43.89	51.97	74.00	22.03	Peak
2	4904.000	33.04	9.64	34.60	30.83	38.91	54.00	15.09	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.



Site no. : 3m Chamber Data no. : 81

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH7 2452MHz Tx

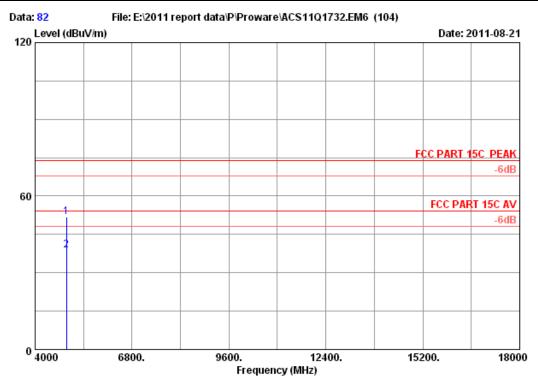
M/N : PW-MN561

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FCC ID: WWMMN561V3

AUDIX Technology (Shenzhen) Co., Ltd.

page 4-64



Site no. : 3m Chamber Data no. : 82

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

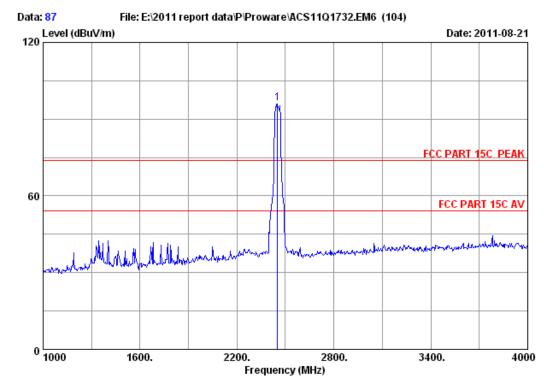
EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT40 CH7 2452MHz Tx

M/N : PW-MN561

:

	-	Factor		Factor	_	Emission Level (dBuV/m)		_	Remark
1	4904.000	33.04	9.64	34.60	43.61	51.69	74.00	22.31	Peak
2	4904.000	33.04	9.64	34.60	30.74	38.82	54.00	15.18	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.



Site no. : 3m Chamber Data no. : 87

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT40 CH7 2452MHz Tx

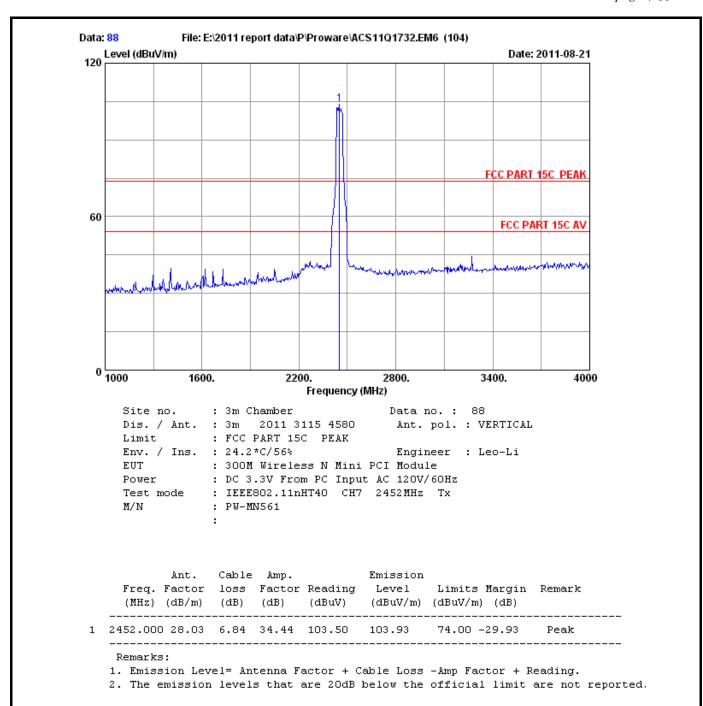
M/N : PW-MN561

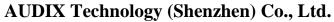
:

	Ant.	Cable	Amp.		Emission				
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		

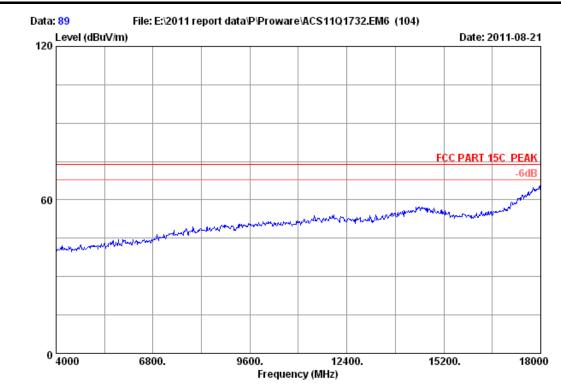
1 2452.000 28.03 6.84 34.44 95.85 96.28 74.00 -22.28 Peak

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









Site no. : 3m Chamber Data no.: 89

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

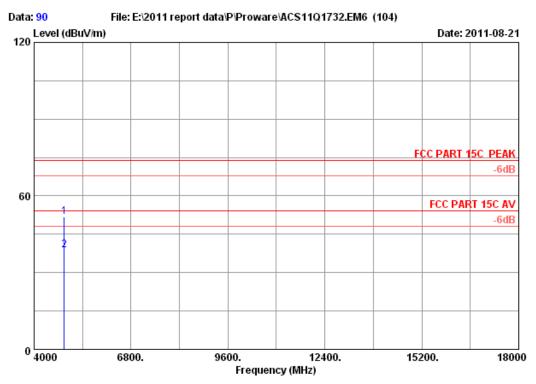
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz : IEEE802.11nHT40 CH4 2437MHz Tx Test mode

: PW-MN561 M/N

FCC ID:WWMMN561V3

FCC ID: WWMMN561V3

page 4-68



Site no. : 3m Chamber Data no. : 90

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH4 2437MHz Tx

M/N : PW-MN561

:

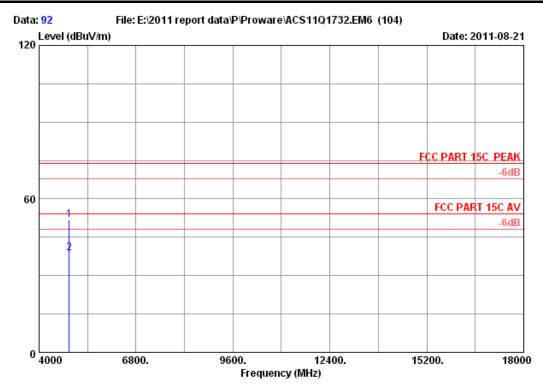
	-	loss	Factor	_	Emission Level (dBuV/m)		_	Remark
_	4874.000 4874.000	 			51.78 38.63	74.00 54.00		Peak Average

- 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: WWMMN561V3

page 4-70



Site no. : 3m Chamber Data no. : 92
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

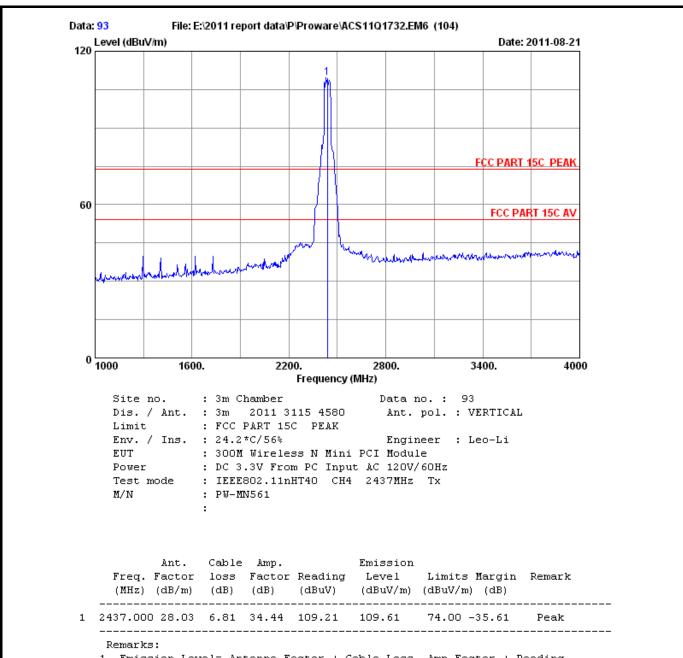
EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT40 CH4 2437MHz Tx

M/N : PW-MN561

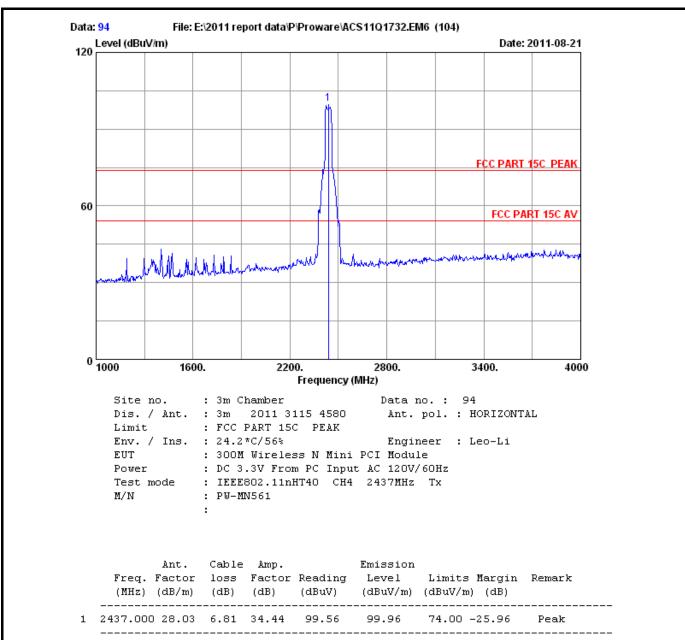
:

	-	Factor		Factor	_	Emission Level (dBuV/m)		_	Remark	
1	4874.000	32.98	9.62	34.60	43.97	51.97	74.00	22.03	Peak	_
2	4874.000	32.98	9.62	34.60	30.85	38.85	54.00	15.15	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.

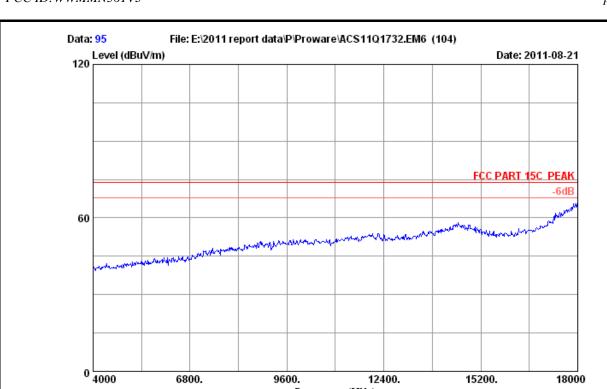


- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.



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





Site no. : 3m Chamber Data no. : 95

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Frequency (MHz)

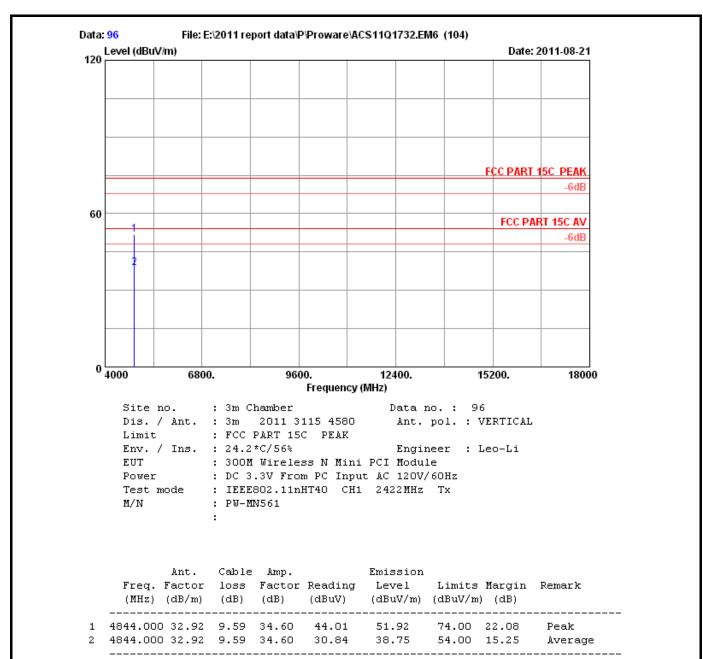
Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH1 2422MHz Tx

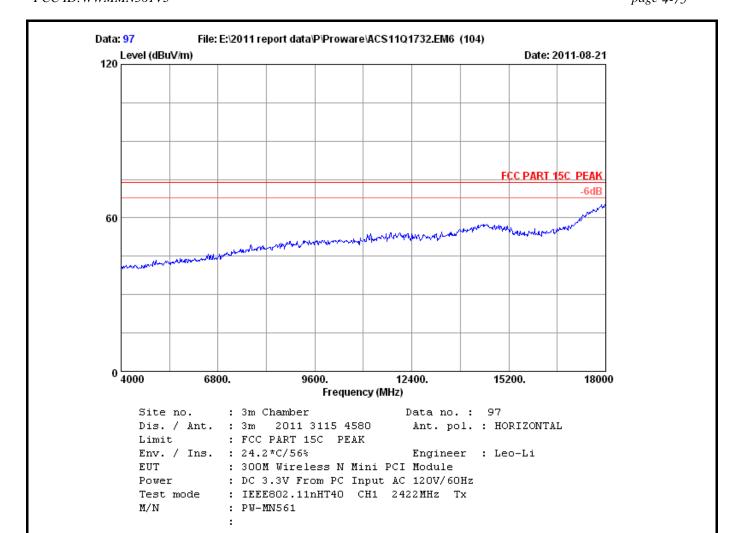
M/N : PW-MN561

:

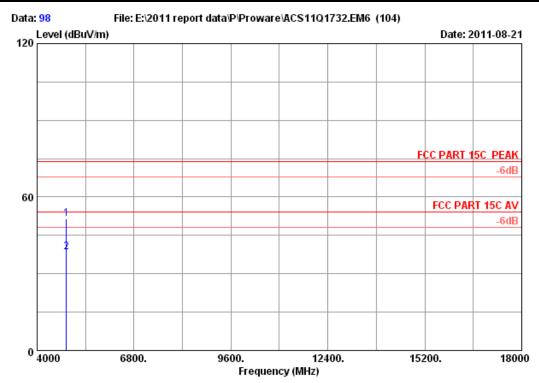


- 1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
- 2. The emission levels that are 20dB below the official limit are not reported.









Site no. : 3m Chamber Data no. : 98

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

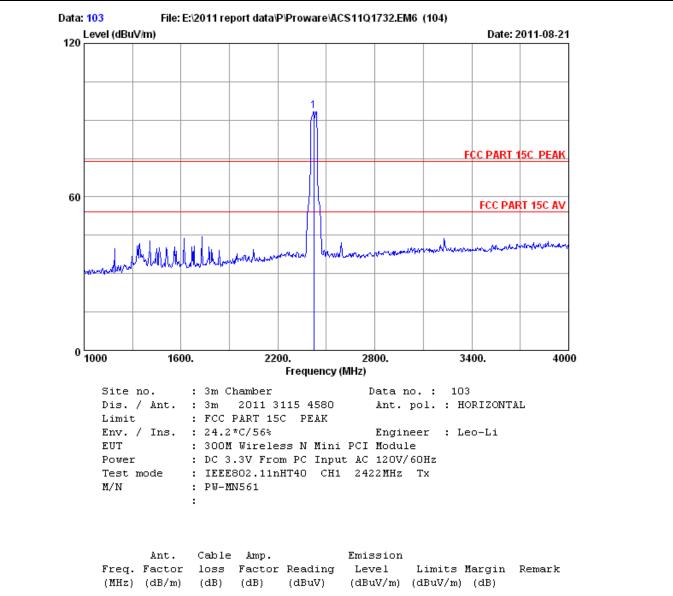
EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT40 CH1 2422MHz Tx

M/N : PW-MN561

:

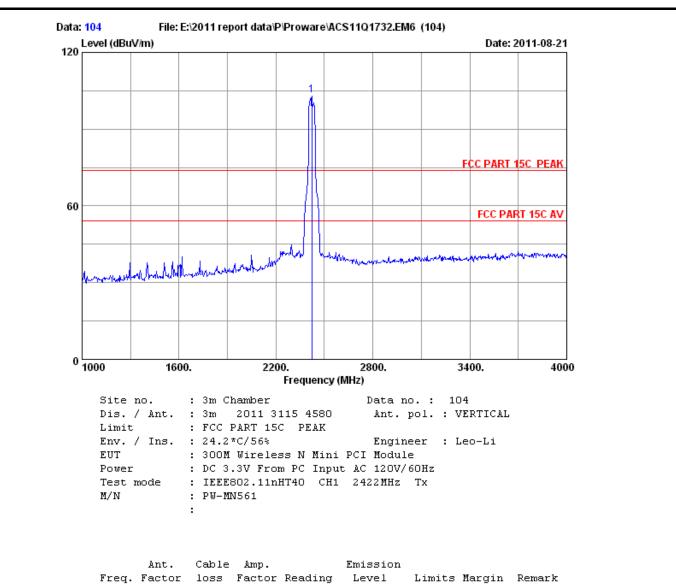
	-	Factor		Factor	_	Emission Level (dBuV/m)		_	Remark	
1	4844.000	32.92	9.59	34.60	43.61	51.52	74.00	22.48	Peak	
2	4844.000	32.92	9.59	34.60	30.58	38.49	54.00	15.51	Average	

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



1 2422.000 28.00 6.78 34.44 93.35 93.69 74.00 -19.69 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.



- 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.08,11	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08,11	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,11	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.

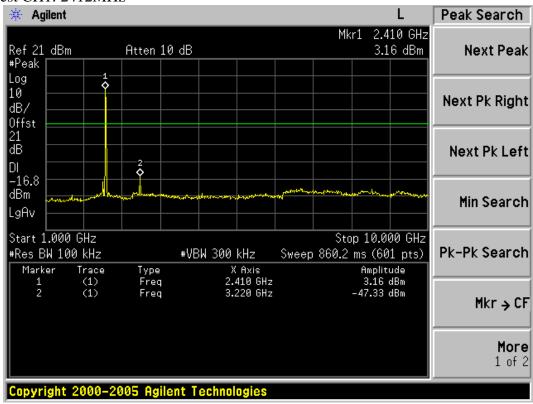


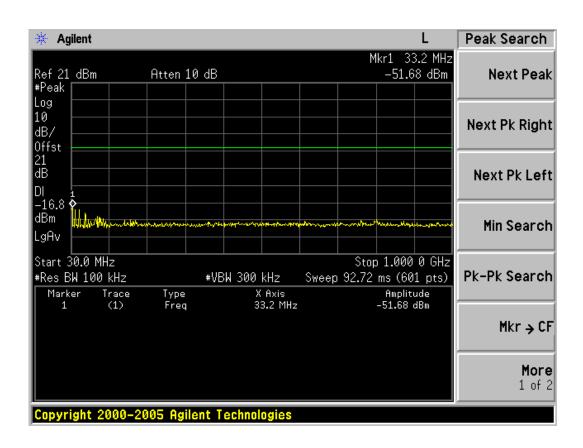
Conducted emission test data:

Chain 0:

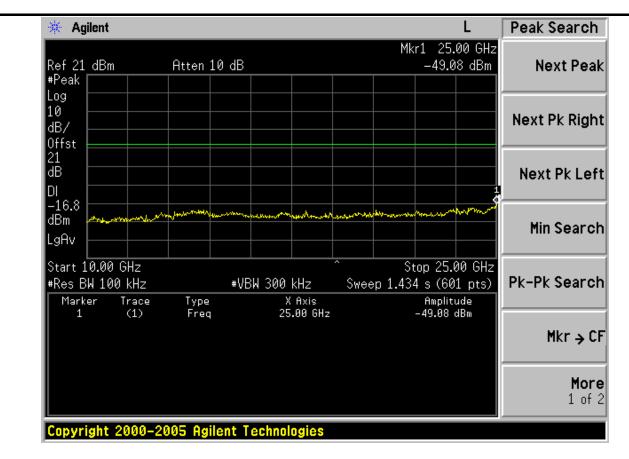
Test Mode: IEEE 802.11b TX

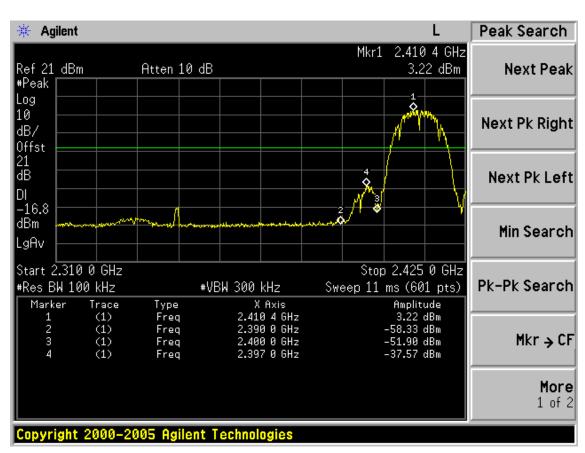
Test CH1: 2412MHz



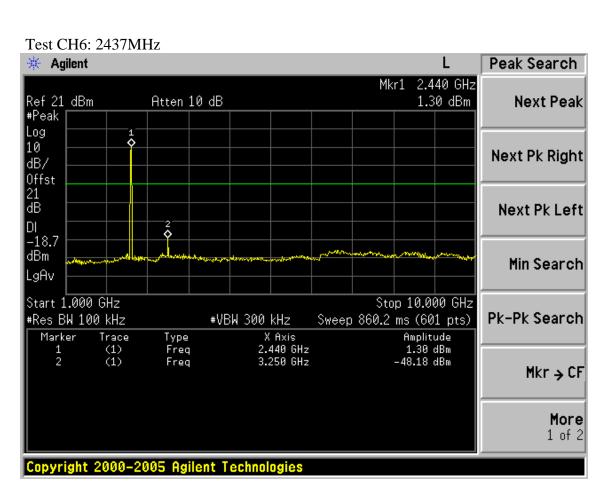


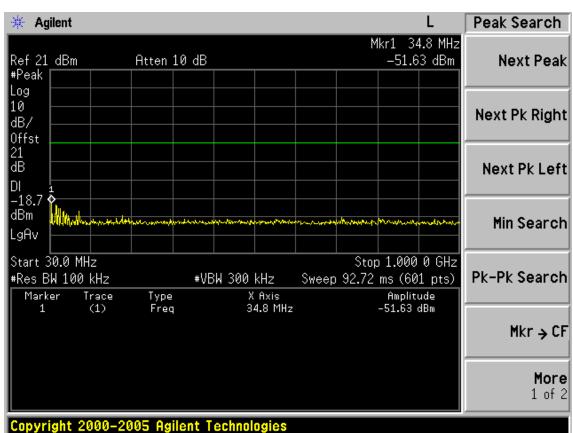




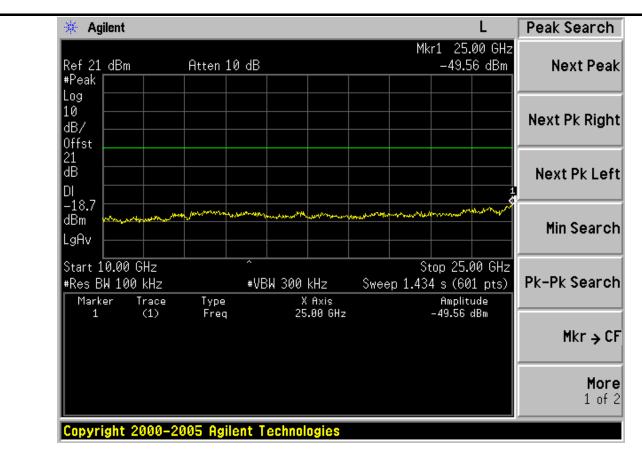


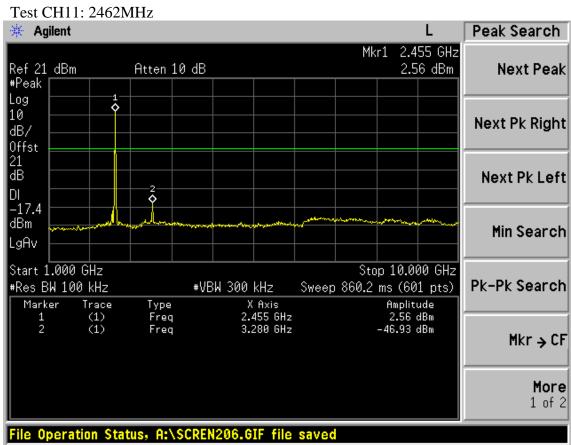




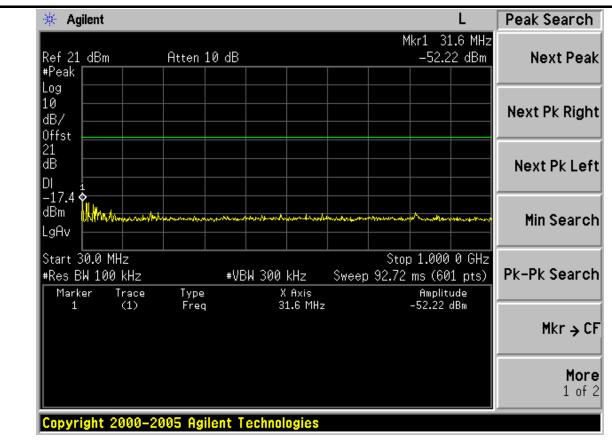


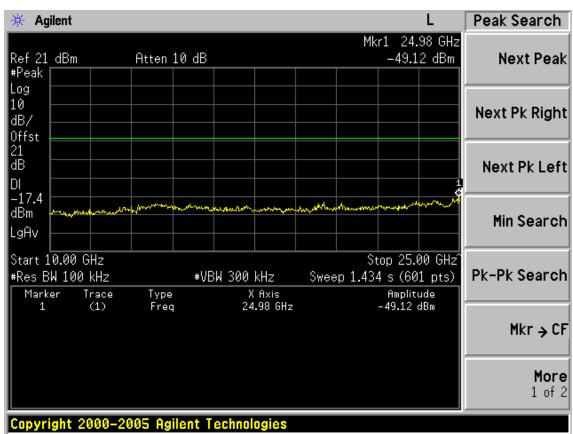




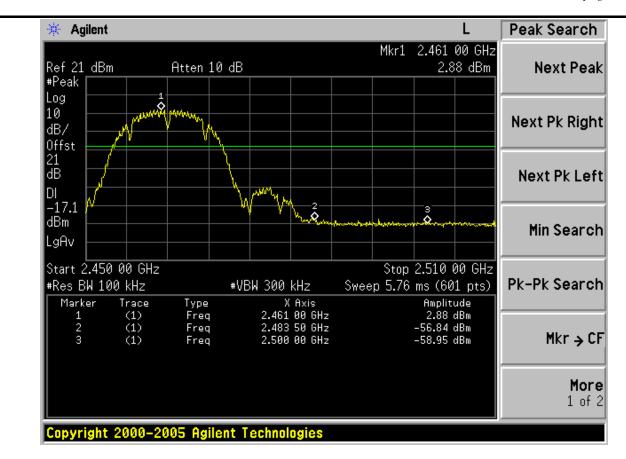






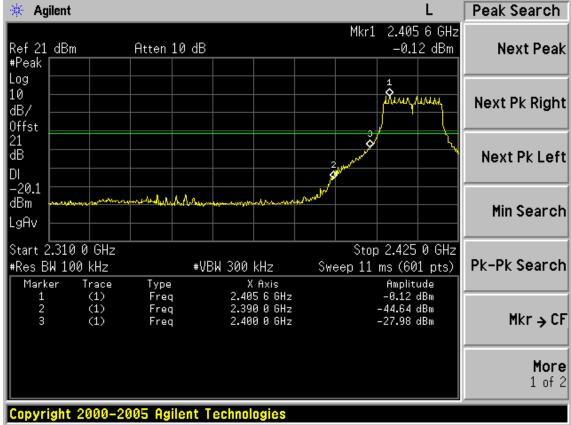




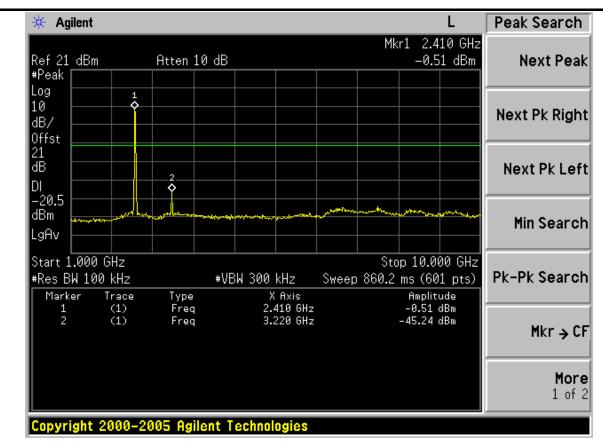


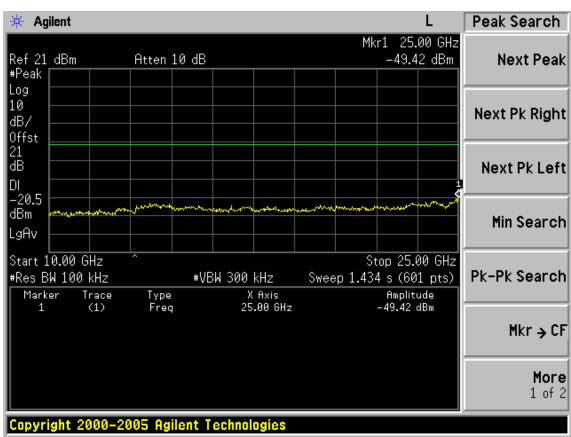
Test Mode: IEEE 802.11g TX

Test CH1: 2412MHz

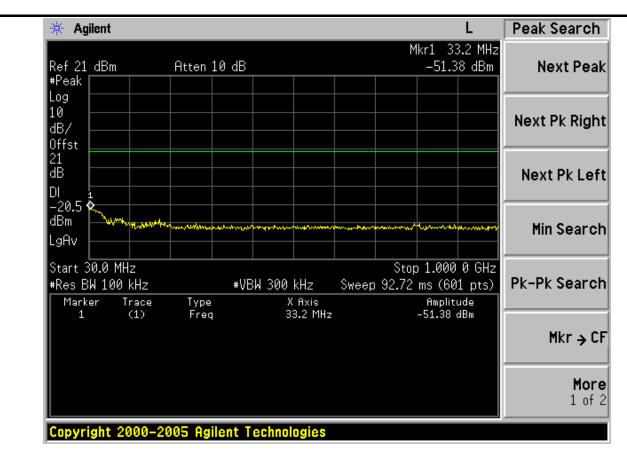


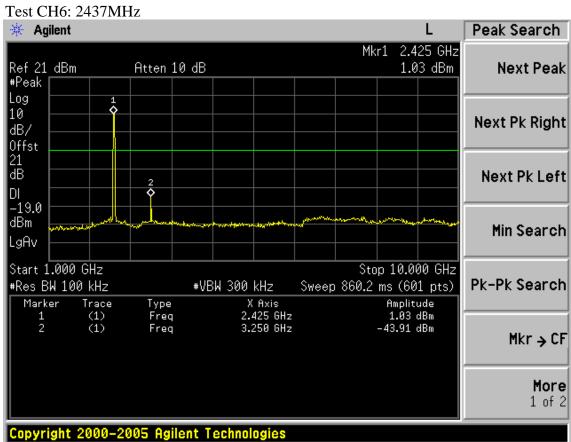




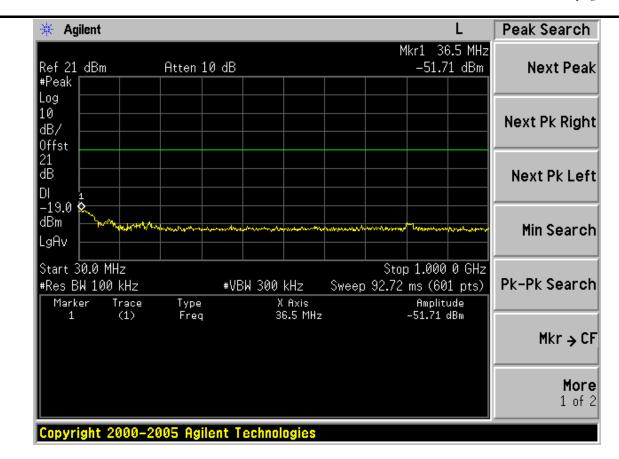


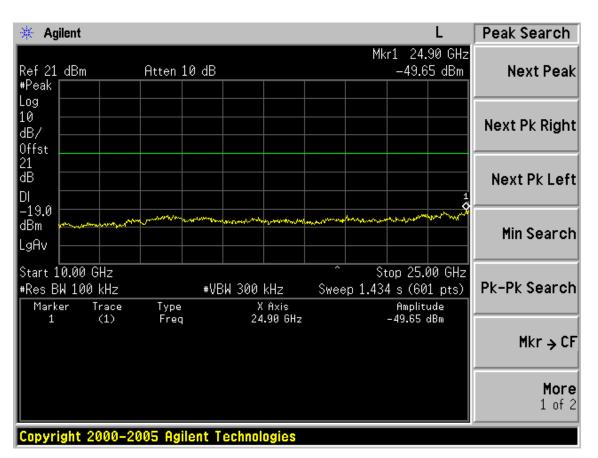




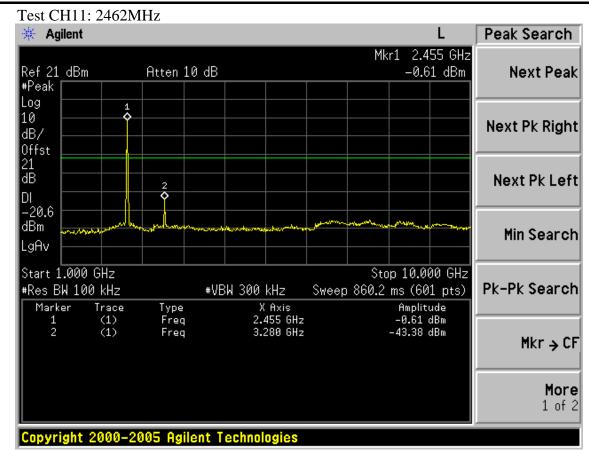


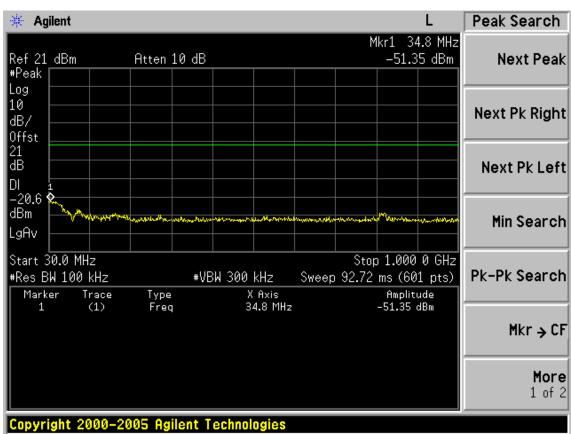




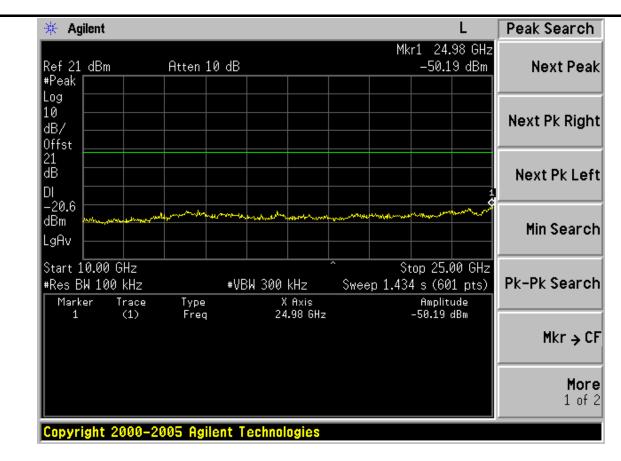


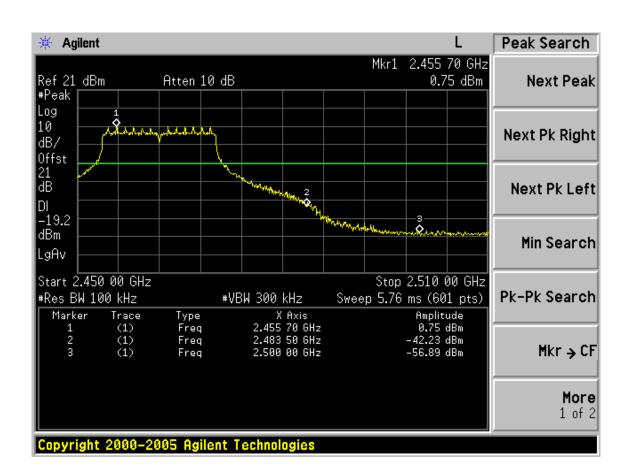




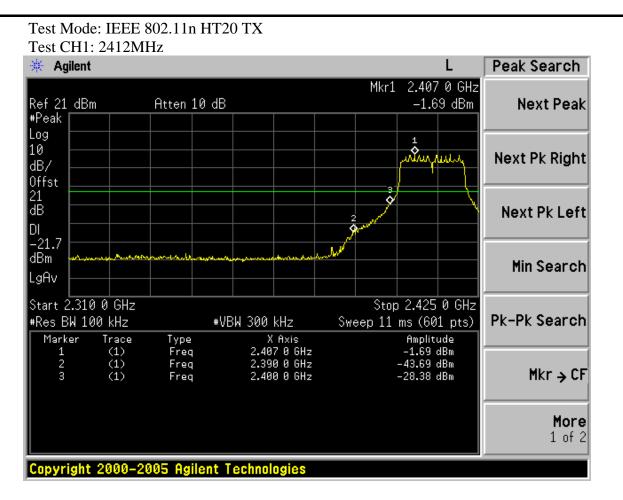


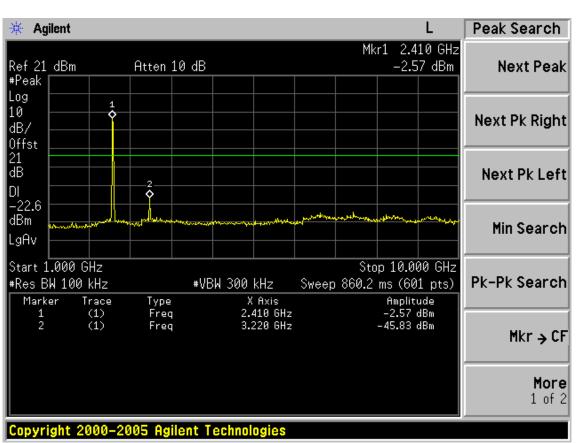




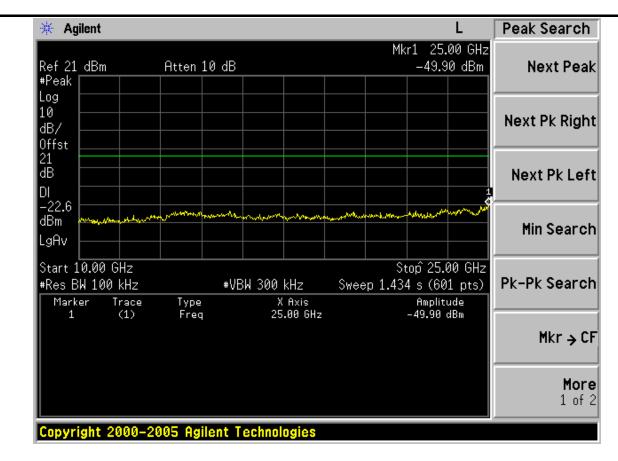


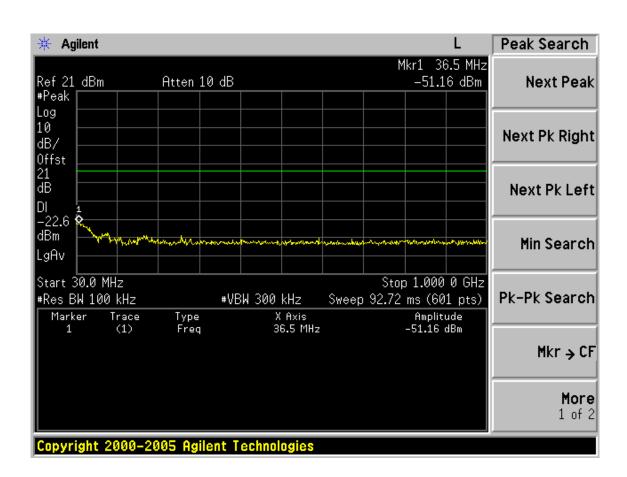




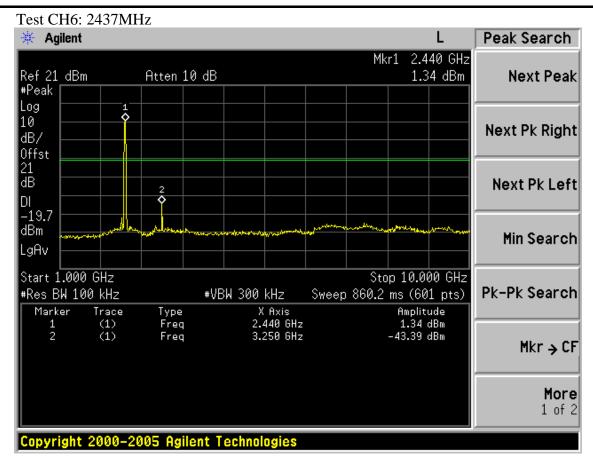


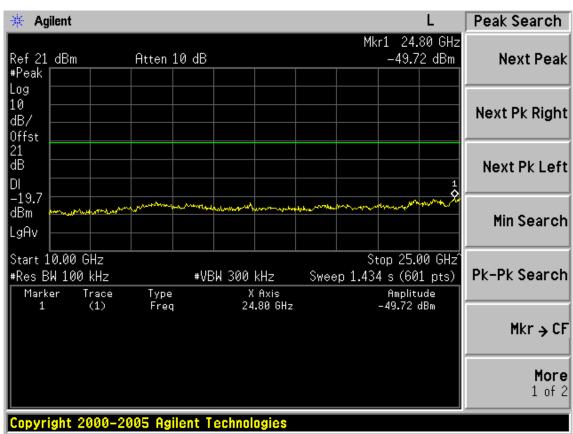




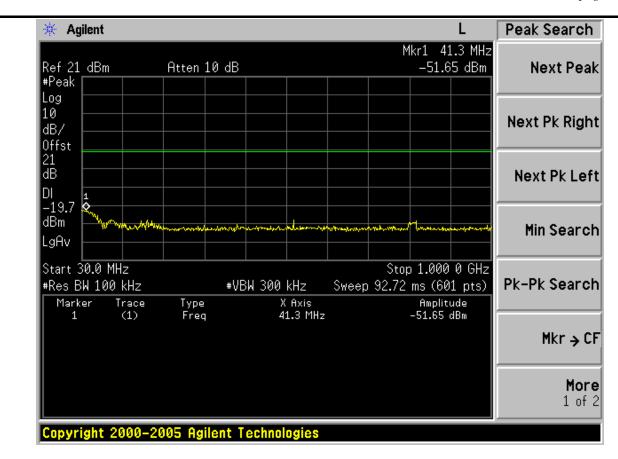


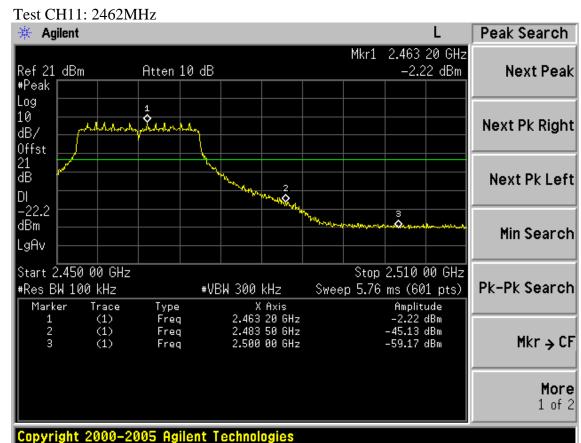




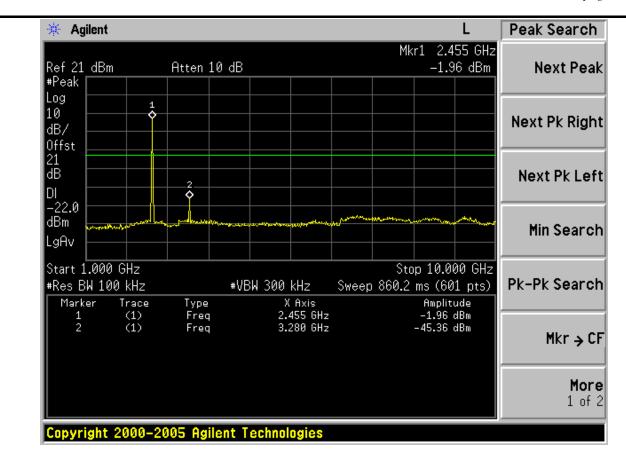


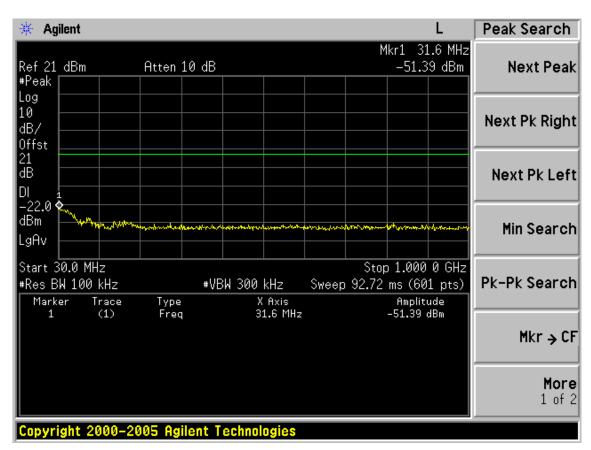




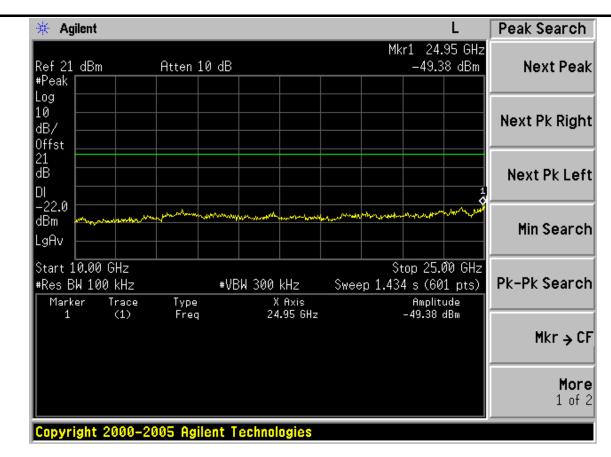






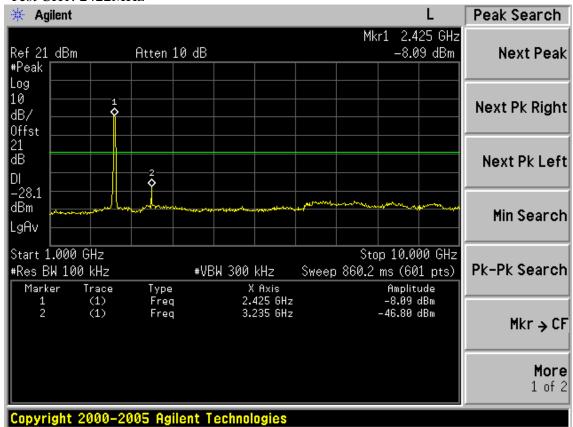




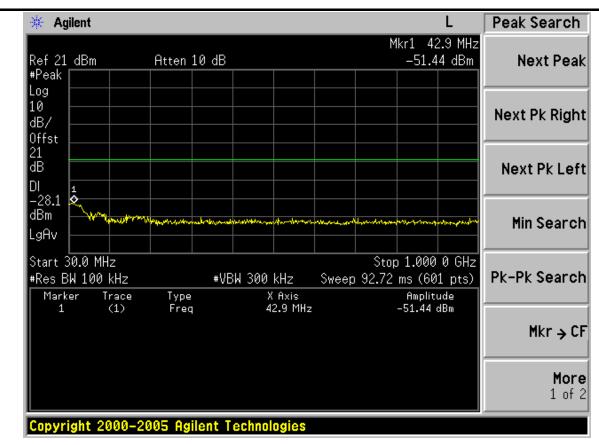


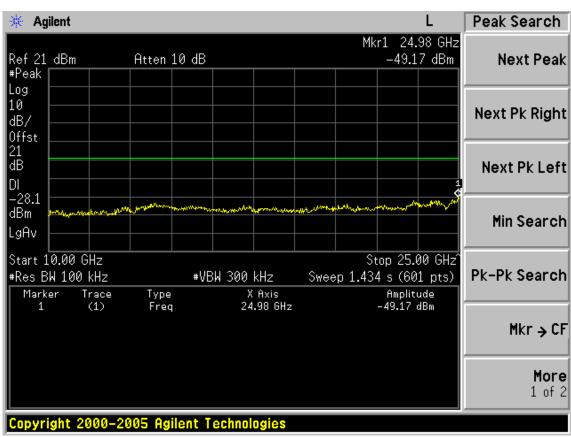
Test Mode: IEEE 802.11n HT40 TX

Test CH1: 2422MHz

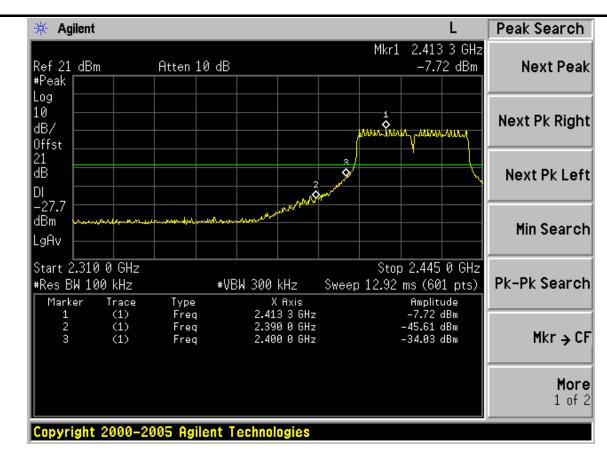


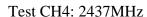


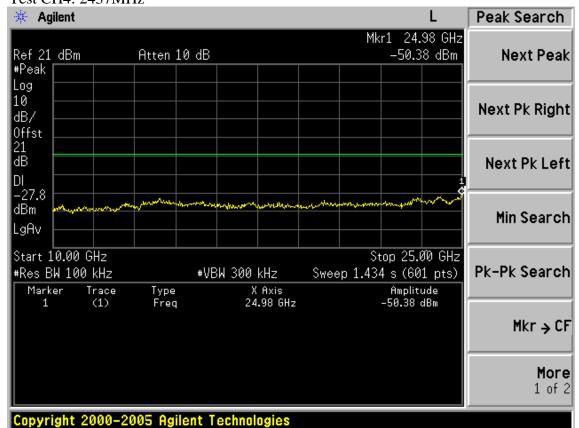




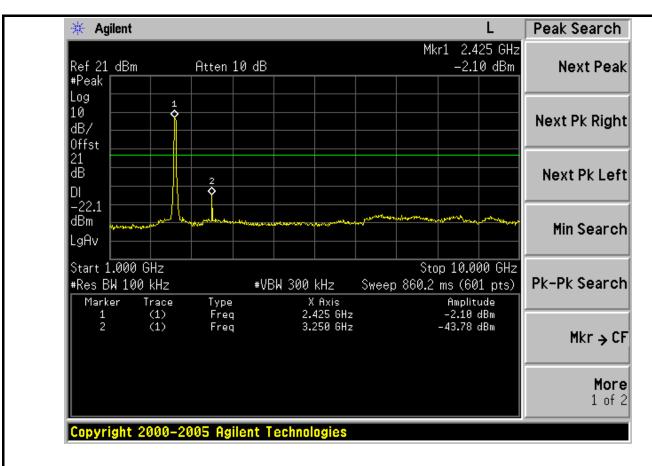


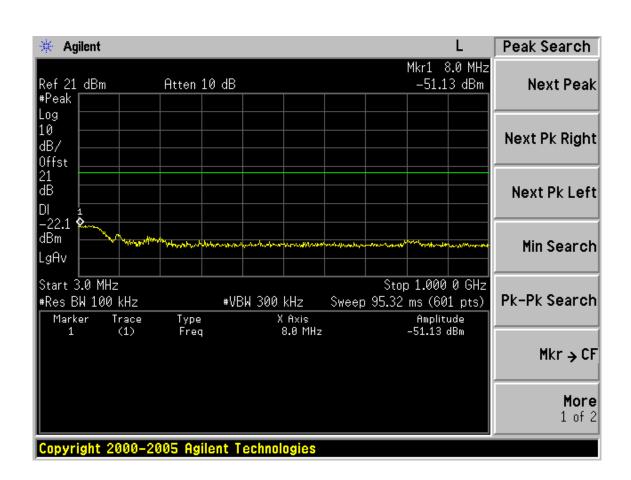




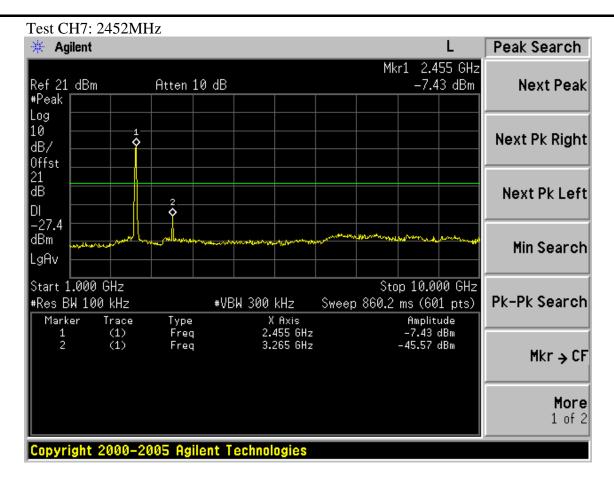


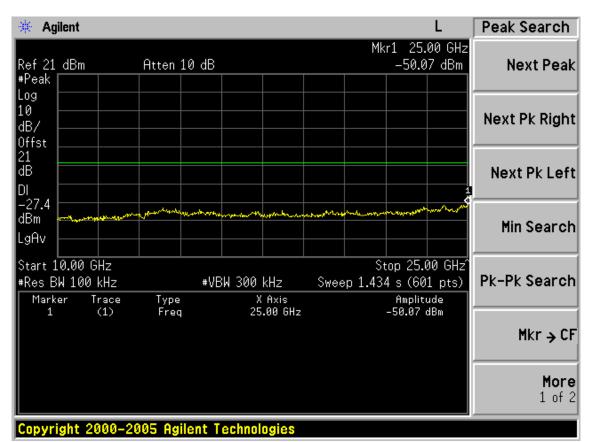




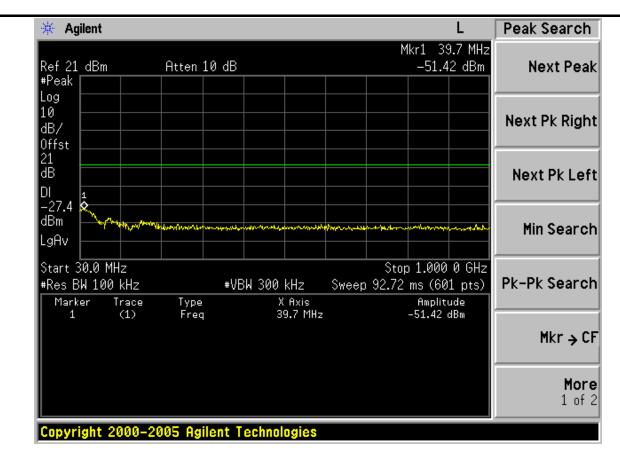


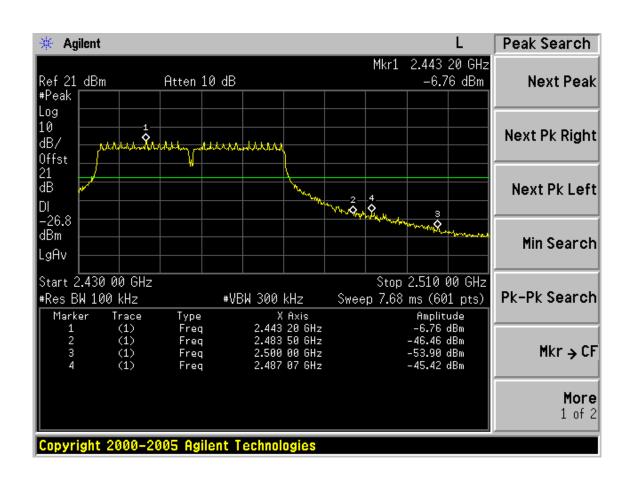








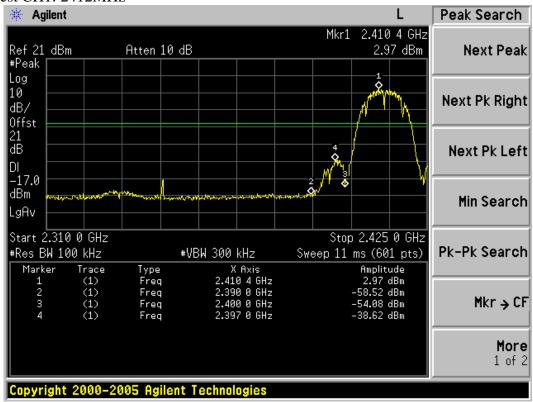


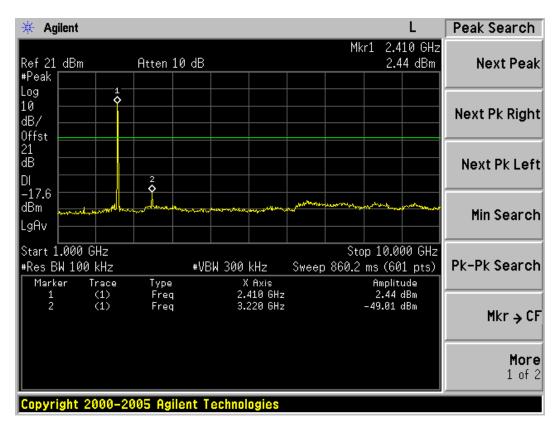




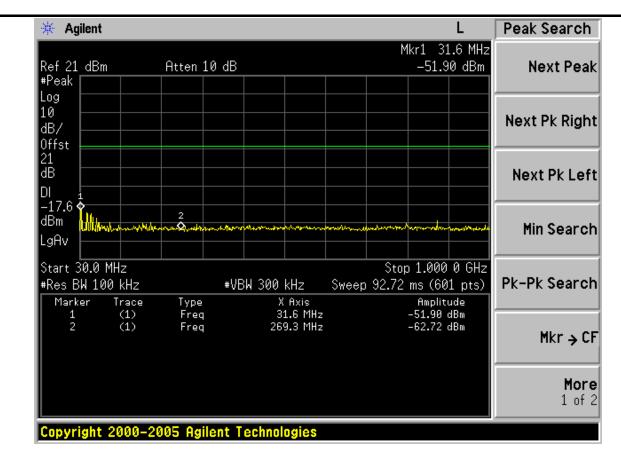
Chain 1: Test Mode: IEEE 802.11b TX

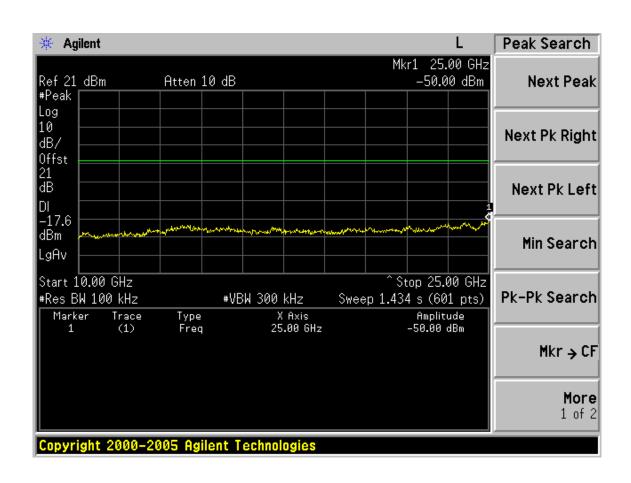
Test CH1: 2412MHz



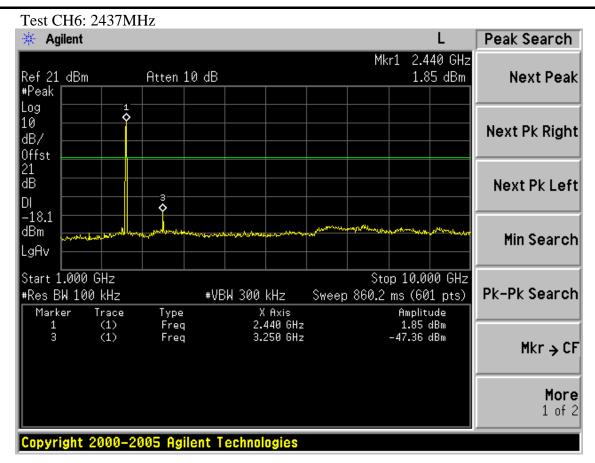


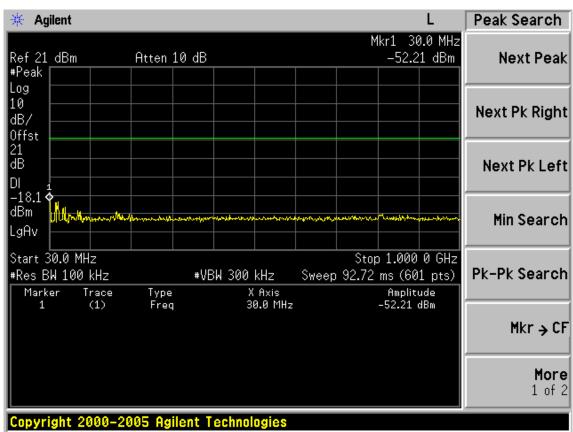




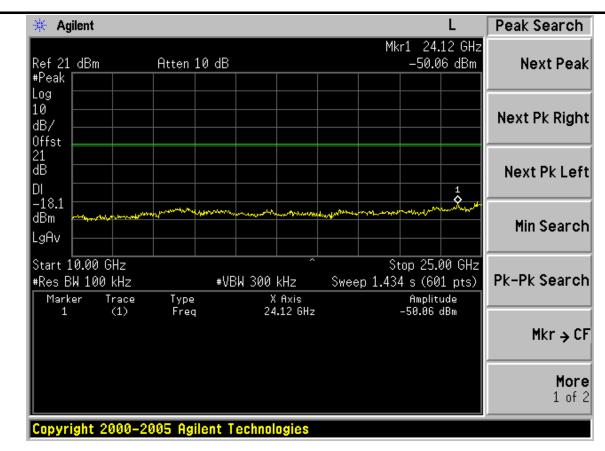


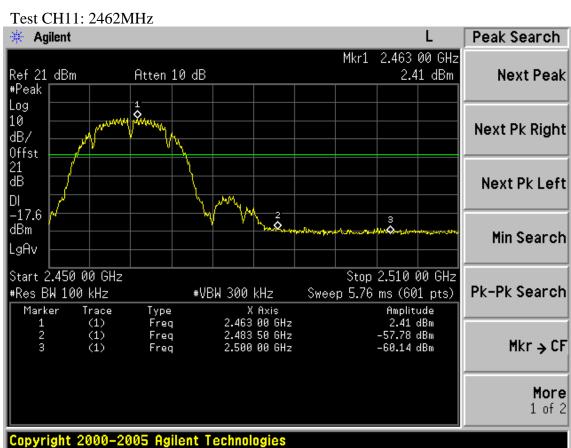




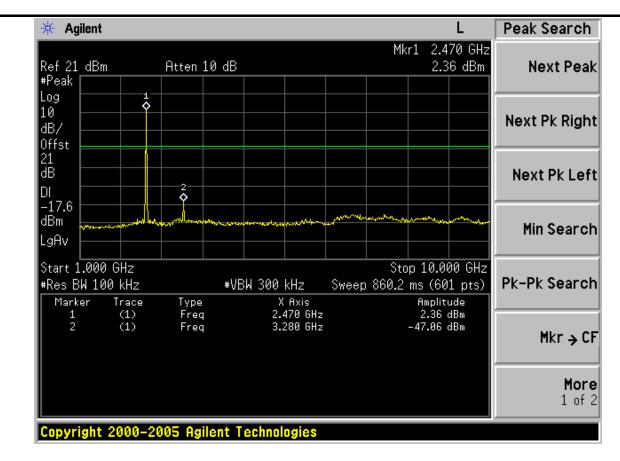


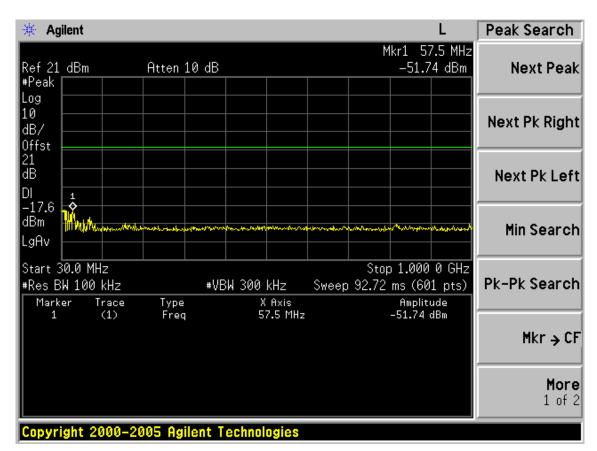




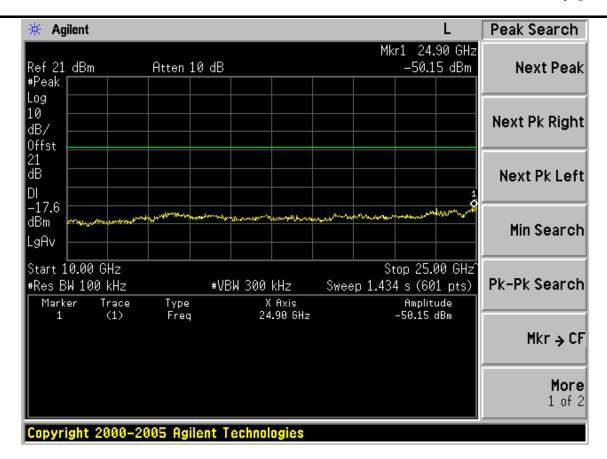






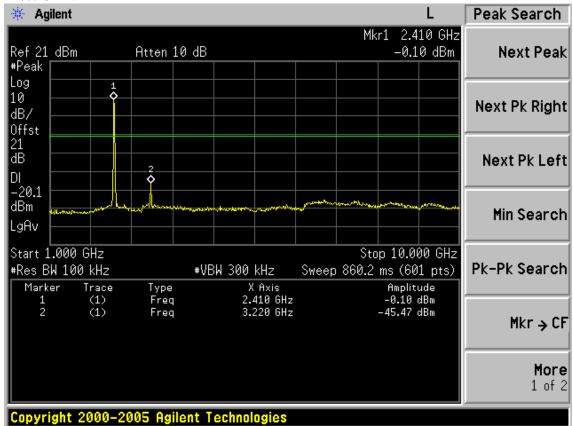




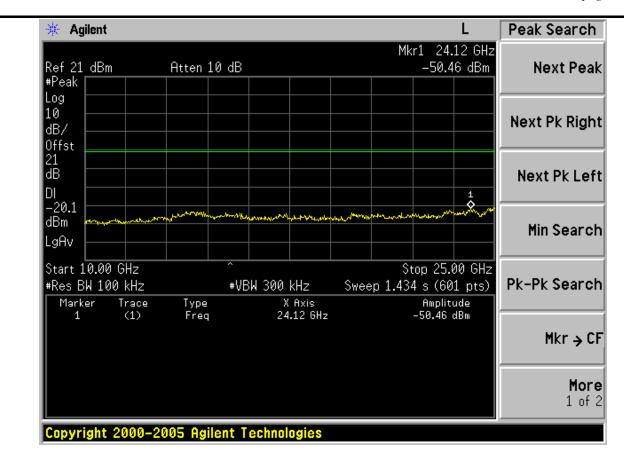


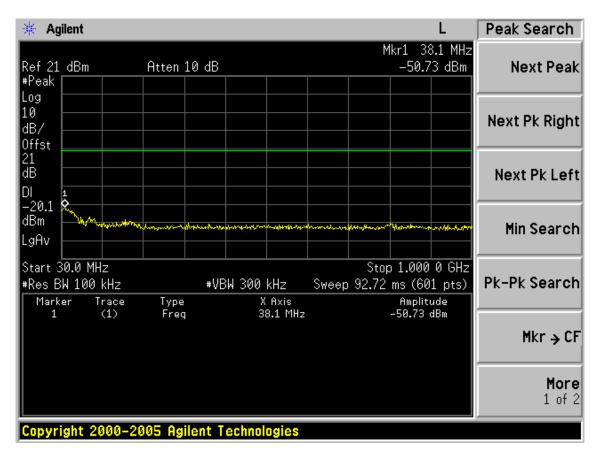
Test Mode: IEEE 802.11g TX

Test CH1: 2412MHz

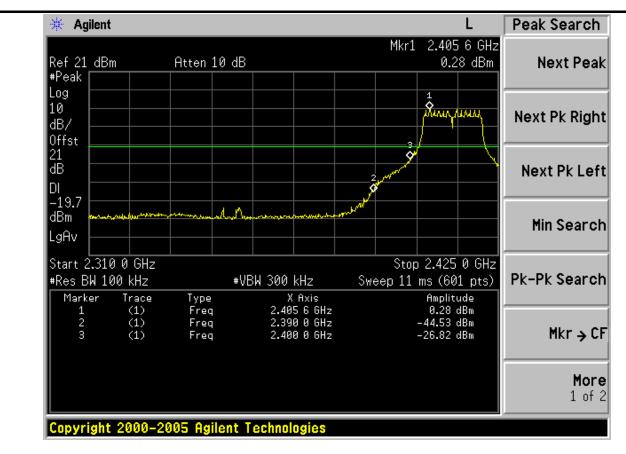


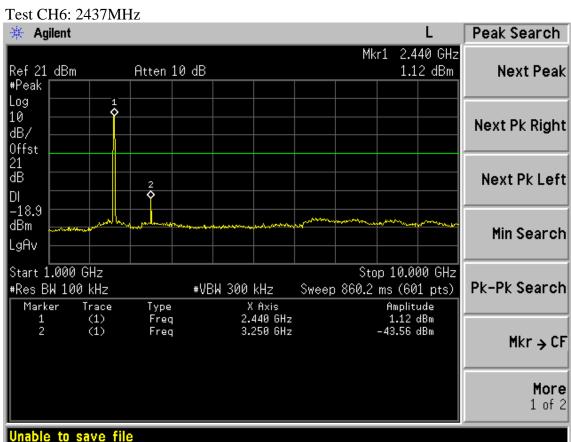




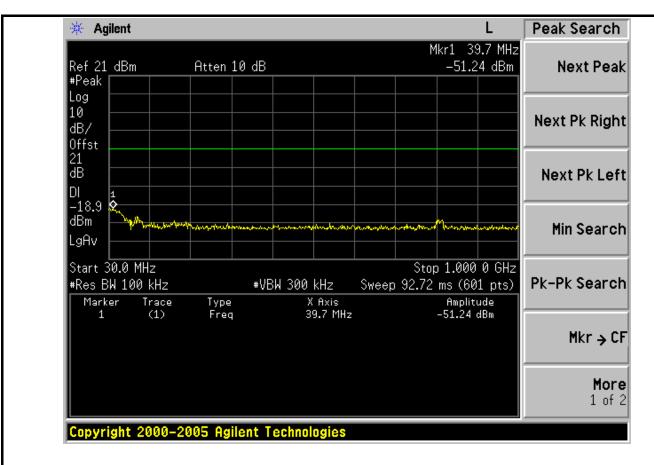


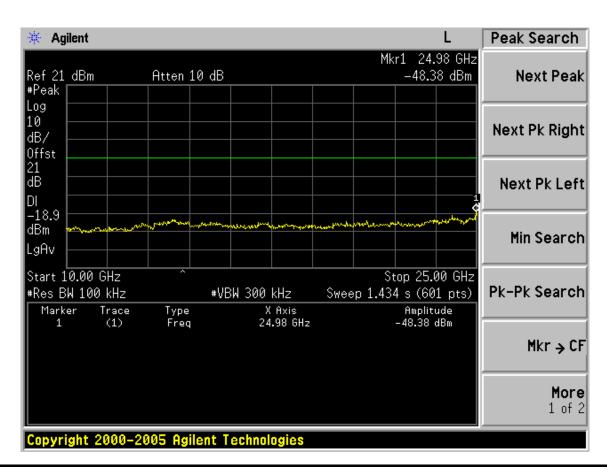




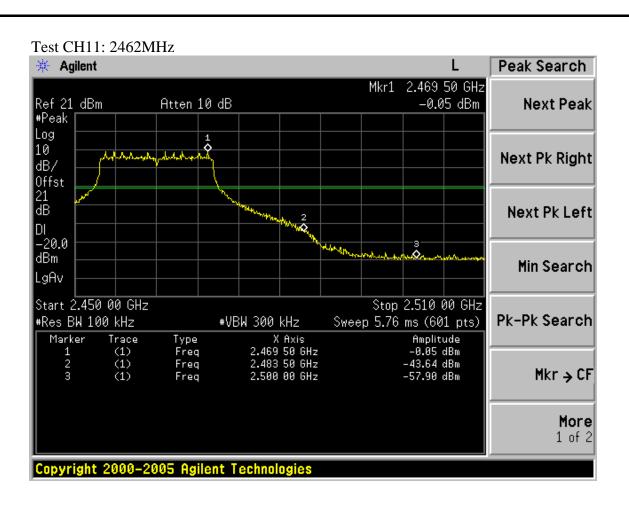


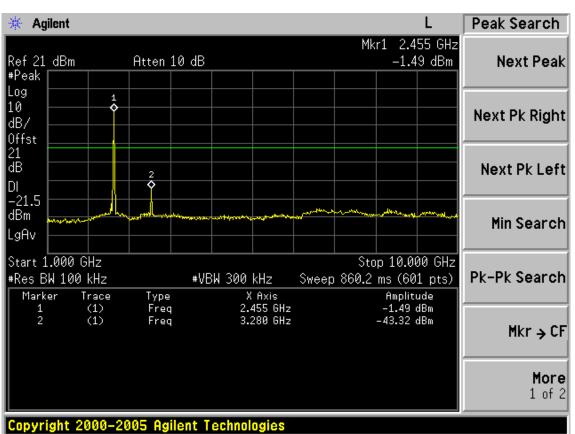




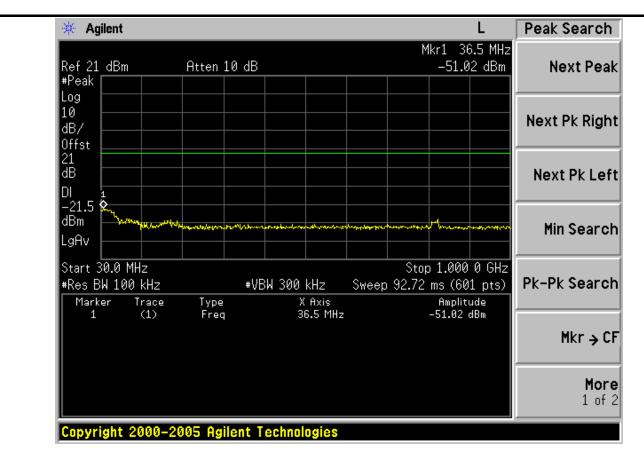


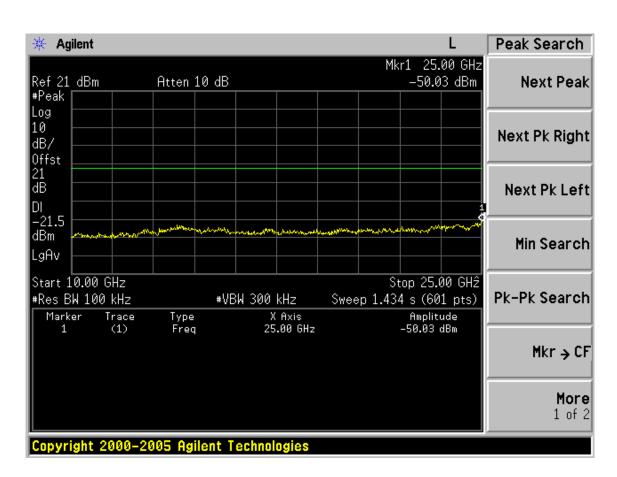




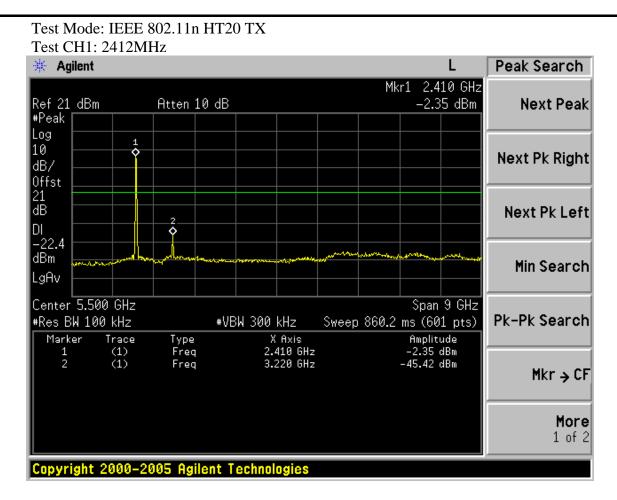


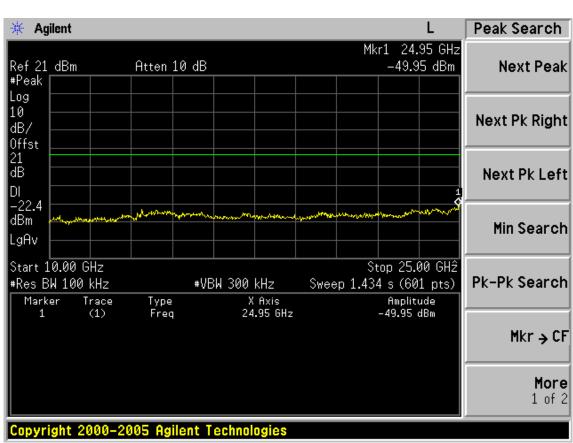




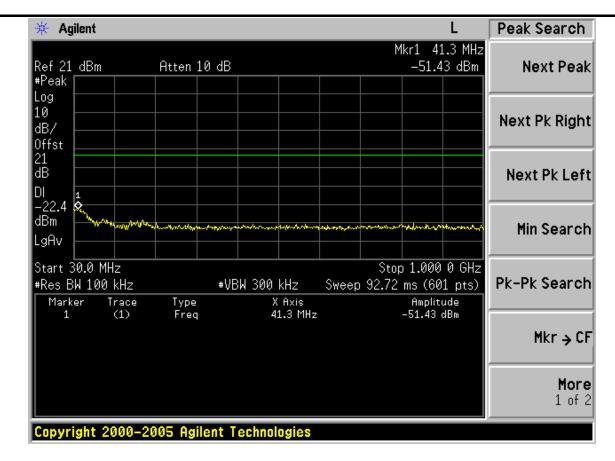


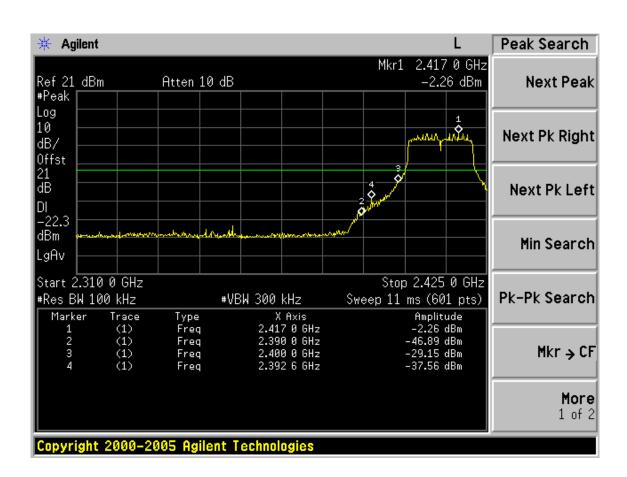




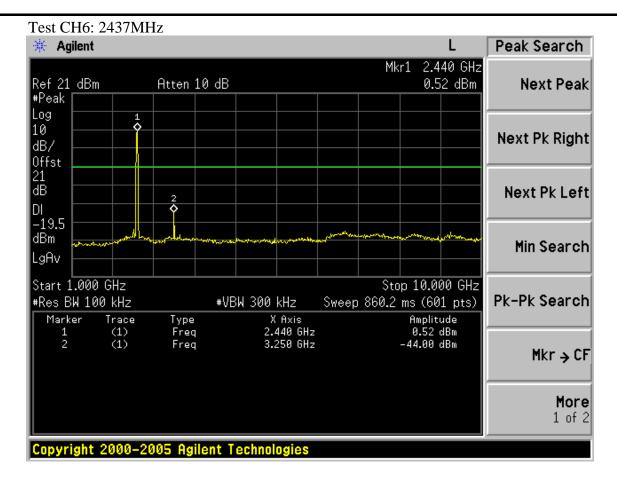


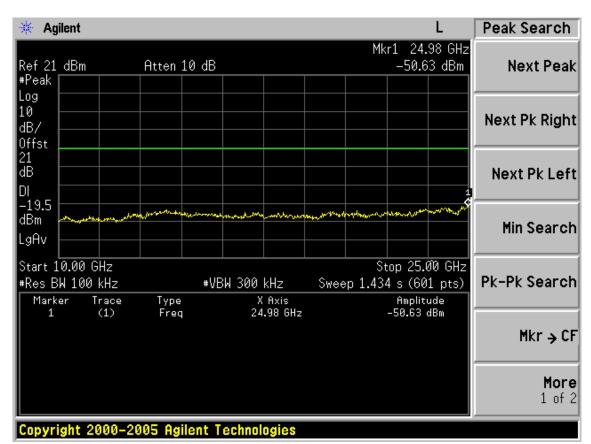




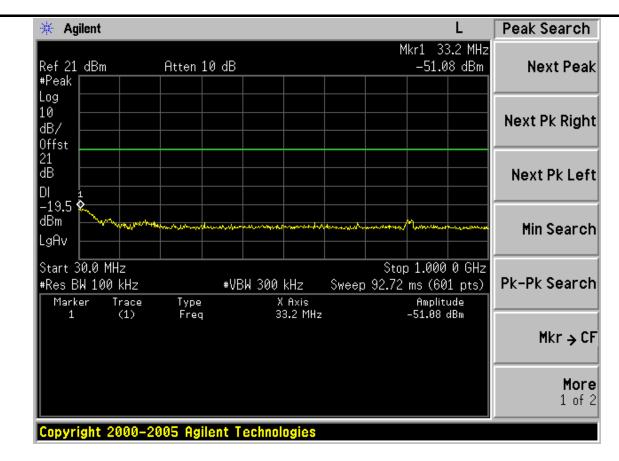


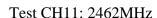


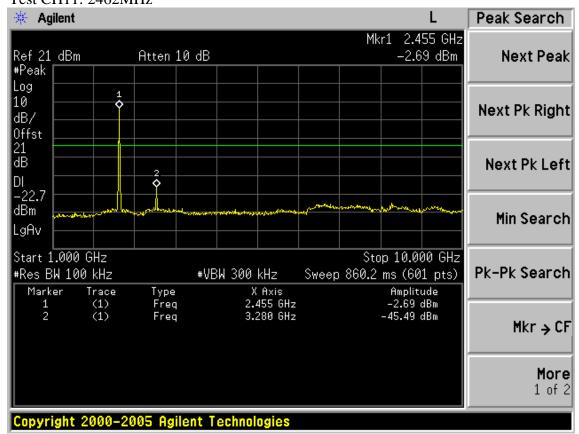




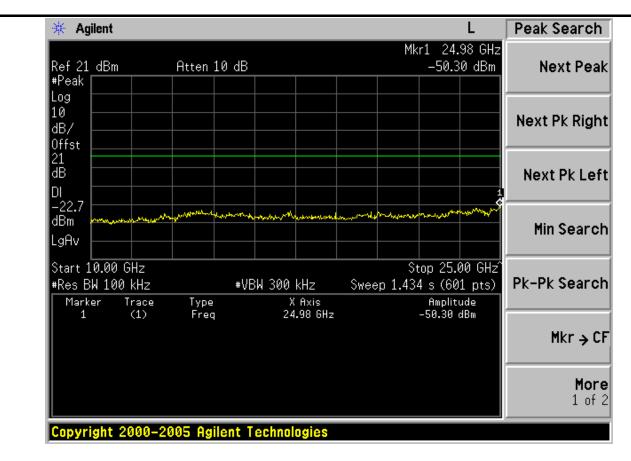


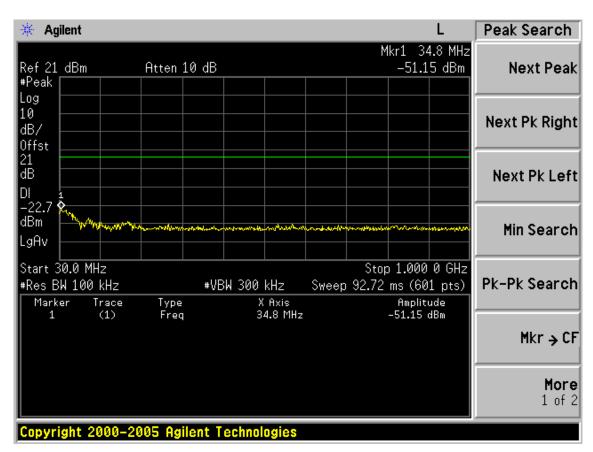




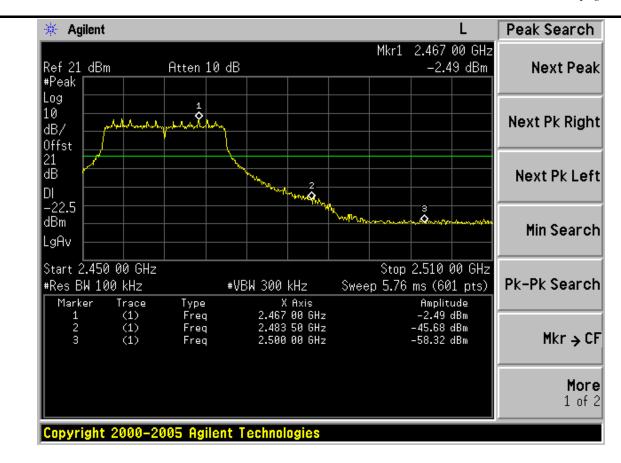






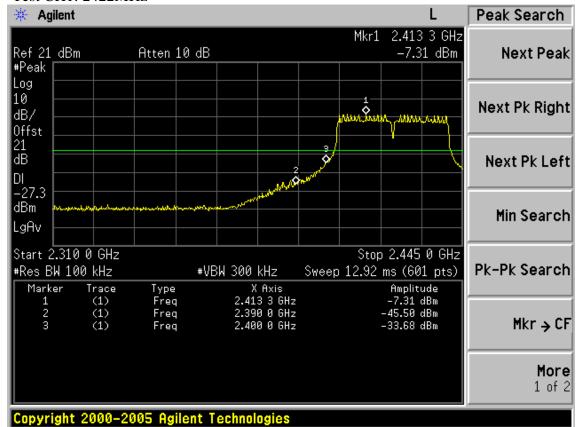




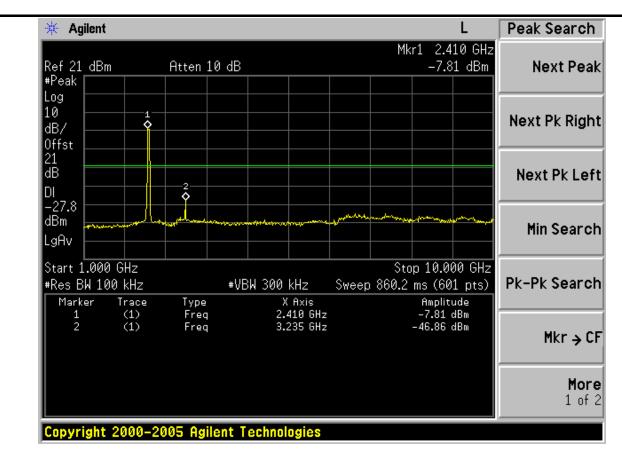


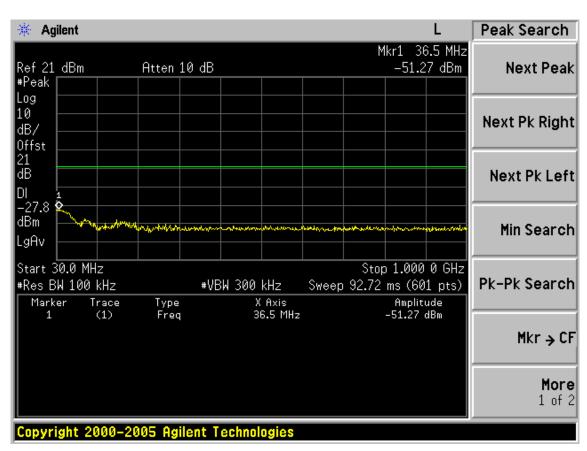
Test Mode: IEEE 802.11n HT40 TX

Test CH1: 2422MHz

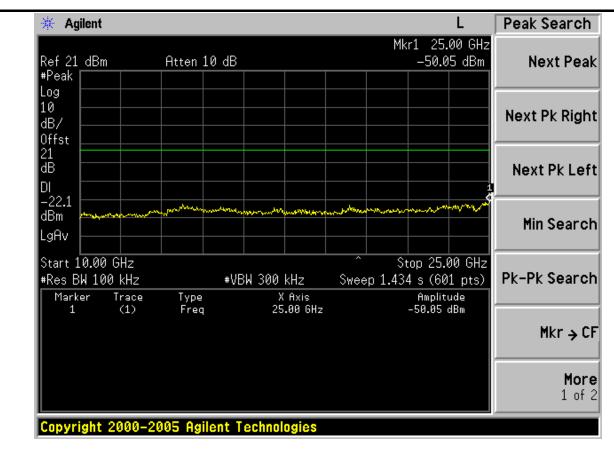


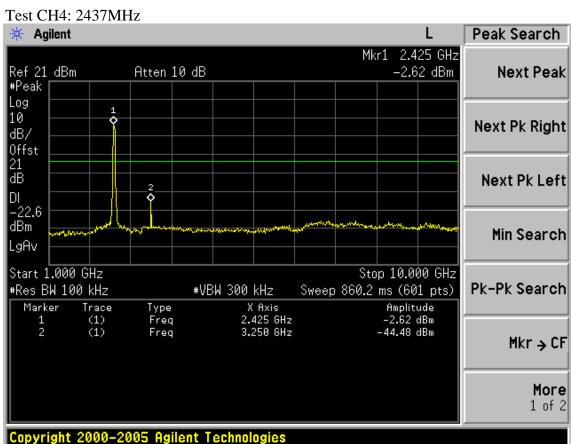




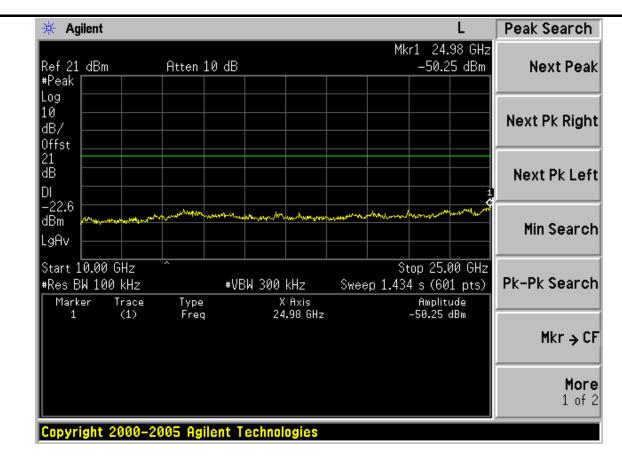


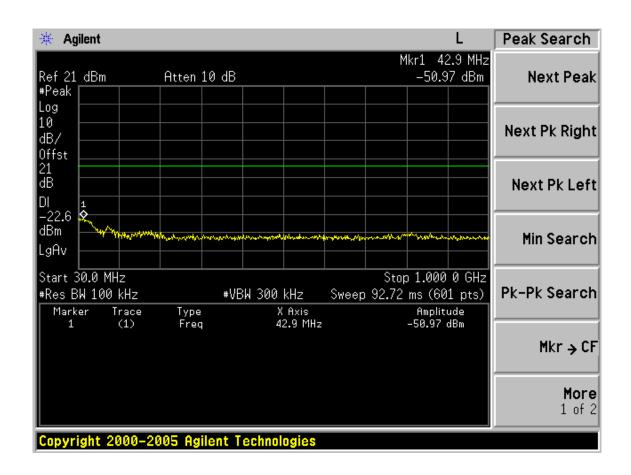




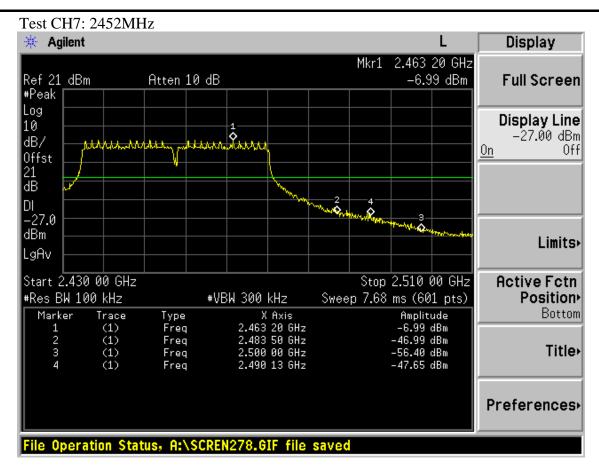


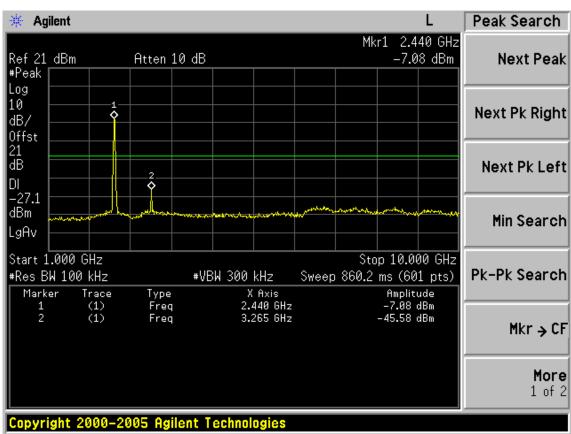




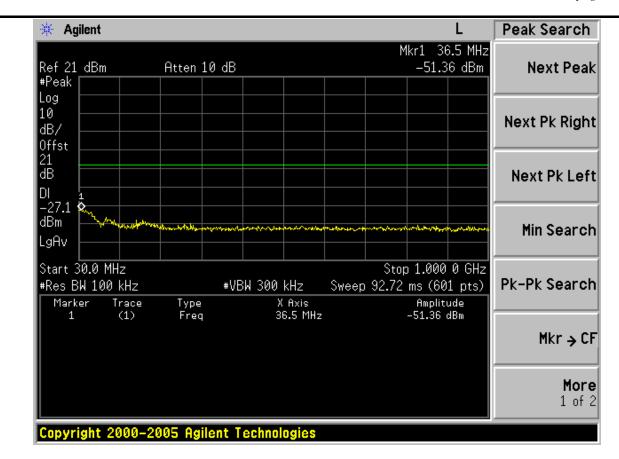


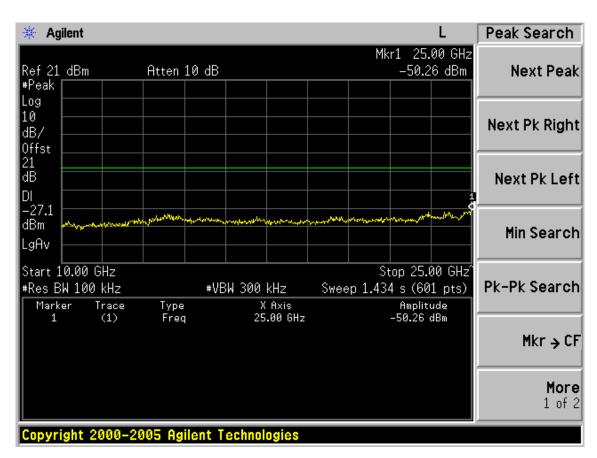














6. BAND EDGE COMPLIANCE TEST

6.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,11	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 10	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.08, 11	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08,11	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,11	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX102	28610/2	May.08,11	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.

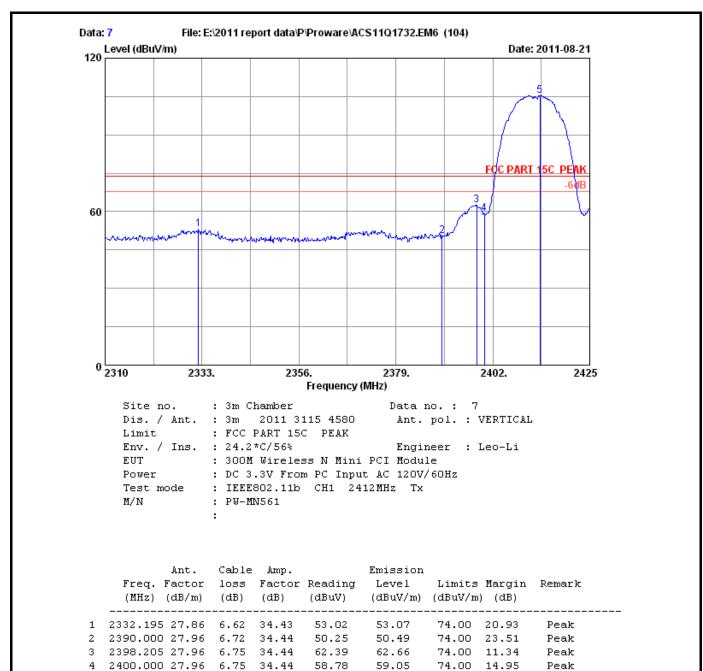
6.3. Test Produce

- 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:WWMMN561V3 page 6-1



Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.

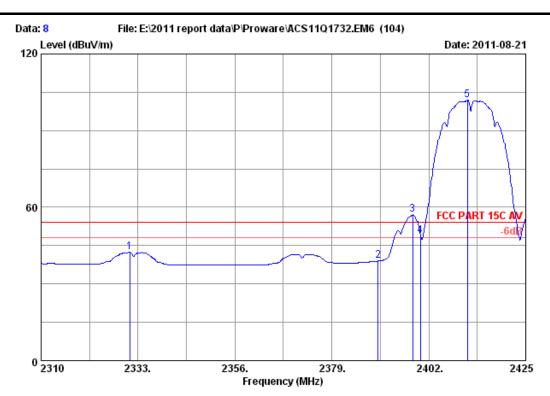
5 2413.155 27.98 6.78 34.44 104.91 105.23

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

74.00 -31.23

Peak

FCC ID: WWMMN561V3 page 6-2



Site no. : 3m Chamber Data no. : 8

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH1 2412MHz Tx

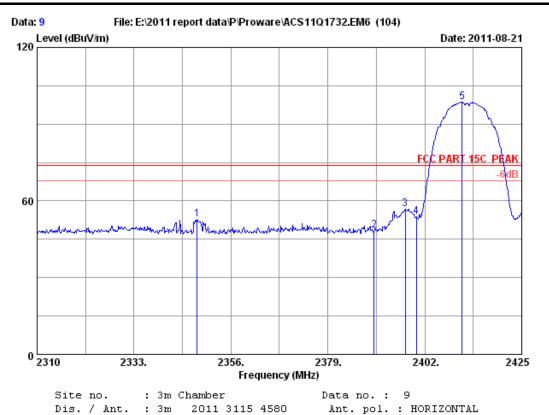
M/N : PW-MN561

:

	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	2331.045 27.86	6.62 34.43	42.44	42.49	54.00 11.51	Average
2	2390.000 27.96	6.72 34.44	38.71	38.95	54.00 15.05	Average
3	2398.205 27.96	6.75 34.44	56.76	57.03	54.00 -3.03	Average
4	2400.000 27.96	6.75 34.44	48.37	48.64	54.00 5.36	Average
5	2411.200 27.98	6.78 34.44	101.56	101.88	54.00 -47.88	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: WWMMN561V3 page 6-3



: FCC PART 15C PEAK Limit

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

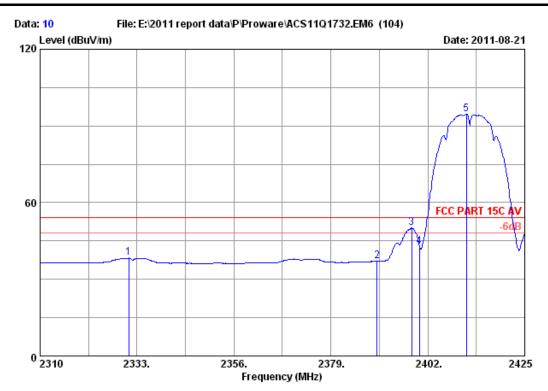
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz : IEEE802.11b CH1 2412MHz Tx Test mode

: PW-MN561 M/N

	Freq. (MHz)			Amp. Factor (dB)	Reading (dBuV)		Limits Mar (dBuV/m) (d	_	
1	2347.950	27.88	6.65	34.44	52.88	52.97	74.00 21.	03 Peak	
2	2390.000	27.96	6.72	34.44	48.18	48.42	74.00 25.	58 Peak	
3	2397.400	27.96	6.75	34.44	56.48	56.75	74.00 17.	25 Peak	
4	2400.000	27.96	6.75	34.44	53.40	53.67	74.00 20.	33 Peak	
5	2410.85	5 27.98	6.75	34.44	98.24	98.53	74.00 -24.	53 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.





Site no. : 3m Chamber Data no. : 10

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH1 2412MHz Tx

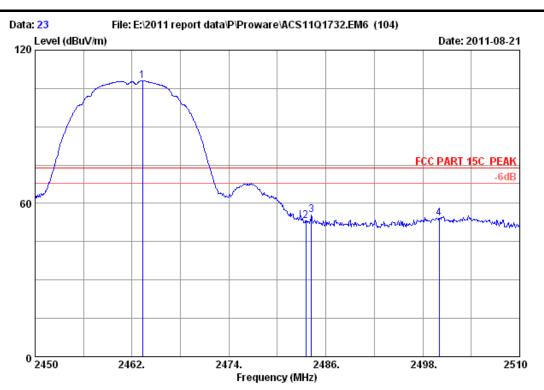
M/N : PW-MN561

:

	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	2331.045 27.86	6.62 34.43	38.24	38.29	54.00 15.71	Average
2	2390.000 27.96	6.72 34.44	36.74	36.98	54.00 17.02	Average
3	2398.205 27.96	6.75 34.44	49.76	50.03	54.00 3.97	Average
4	2400.000 27.96	6.75 34.44	42.37	42.64	54.00 11.36	Average
5	2411.200 27.98	6.78 34.44	94.27	94.59	54.00 -40.59	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: WWMMN561V3 page 6-5



Site no. : 3m Chamber Data no. : 23

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2 * C / 56 % Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH11 2462MHz Tx

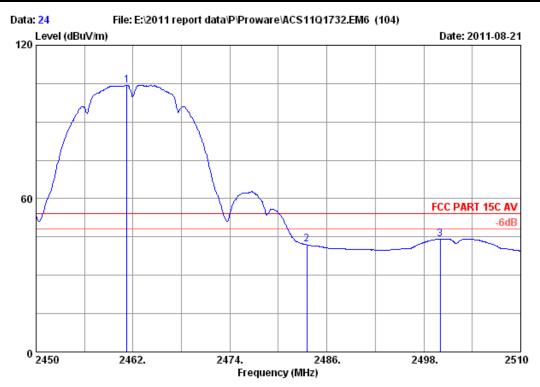
M/N : PW-MN561

:

	-		Cable loss (dB)	Factor	Reading (dBuV)		Limits Margin (dBuV/m) (dB)	Remark
2	2463.320 2483.500 2484.200	28.08	6.90	34.45	107.45 52.75 54.87	107.89 53.28 55.40	74.00 -33.89 74.00 20.72 74.00 18.60	Peak Peak Peak
4	2500.000	28.10	6.90	34.45	53.70	54.25	74.00 19.75	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:WWMMN561V3 page 6-6



Site no. : 3m Chamber Data no. : 24
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

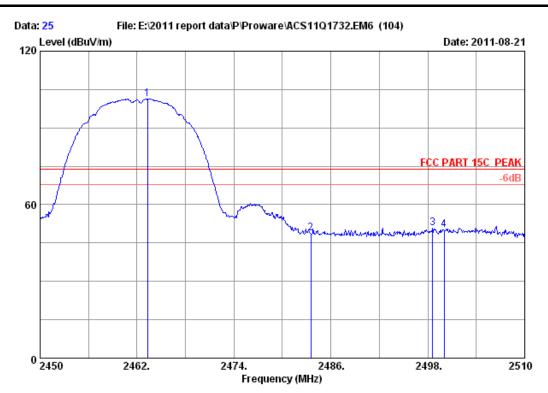
EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-MN561

:

	Ant. Freq. Factor (MHz) (dB/m)		ump. actor Reading NB) (dBuV)		Limits Margin (dBuV/m) (dB)	Remark
_	2461.220 28.05			104.41	54.00 -50.41	Average
_	2483.500 28.08			41.97	54.00 12.03	Average
3	2500.000 28.10	6.90 34	43.58	44.13	54.00 9.87	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.



Site no. : 3m Chamber Dis. / Ant. : 3m 2011 3115 4580 Data no.: 25

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

: 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH11 2462MHz Tx

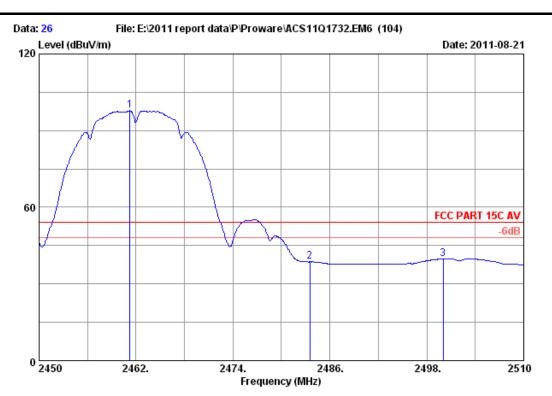
M/N: PW-MN561

	-	Factor	loss				Limits Margin (dBuV/m) (dB)	Remark
1	2463.320	28.05	6.84	34.45	100.87	101.31	74.00 -27.31	Peak
2	2483.500	28.08	6.90	34.45	48.19	48.72	74.00 25.28	Peak
3	2498.600	28.10	6.90	34.45	50.27	50.82	74.00 23.18	Peak
4	2500.000	28.10	6.90	34.45	49.58	50.13	74.00 23.87	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: WWMMN561V3

page 6-8



Site no. : 3m Chamber Data no. : 26

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

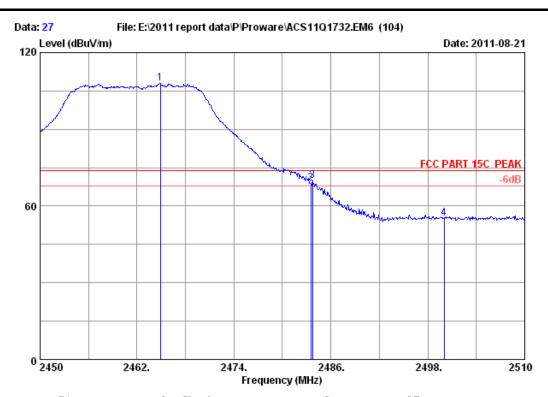
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11b CH11 2462MHz Tx

M/N : PW-MN561

:

	Ant.	Cable Amp.	Emissi	.on	
	Freq. Factor	loss Factor	Reading Level	. Limits Margin	Remark
	(MHz) (dB/m)	(dB) (dB)	(dBuV) (dBuV/	m) (dBuV/m) (dB)	
1	2461.220 28.05	6.84 34.44	97.33 97.78	54.00 -43.78	Average
2	2483.500 28.08	6.90 34.45	38.09 38.62	54.00 15.38	Average
3	2500.000 28.10	6.90 34.45	39.27 39.82	54.00 14.18	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.



Site no. : 3m Chamber Data no. : 27
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH11 2462MHz Tx

M/N : PW-MN561

:

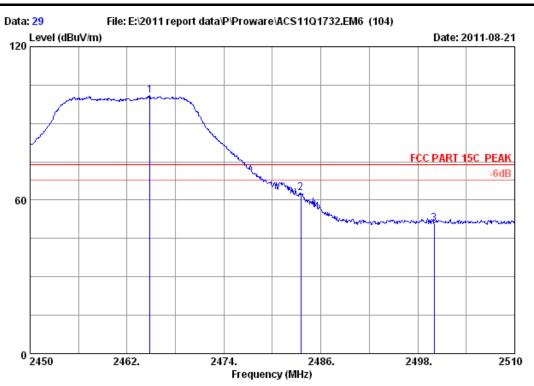
	Freq. Factor	loss		Reading		Limits Margin (dBuV/m) (dB)	Remark
1	2464.880 28.05	6.84	34.45	107.43	107.87	74.00 -33.87	Peak
2	2483.500 28.08	6.90	34.45	68.46	68.99	74.00 5.01	Peak
3	2483.720 28.08	6.90	34.45	69.21	69.74	74.00 4.26	Peak
4	2500.000 28.10	6.90	34.45	54.55	55.10	74.00 18.90	Peak

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



	Freq. F		Cable loss (dB)	•	Reading (dBuV)	Emission Level (dBuV/m)		Margin (dB)	Remark
2	2456.000 2483.500 2500.000	28.08	6.84 6.90 6.90	34.45	95.31 47.56 41.51	95.76 48.09 42.06	54.00 54.00 54.00	-41.76 5.91 11.94	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.



Site no. : 3m Chamber Data no. : 29

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

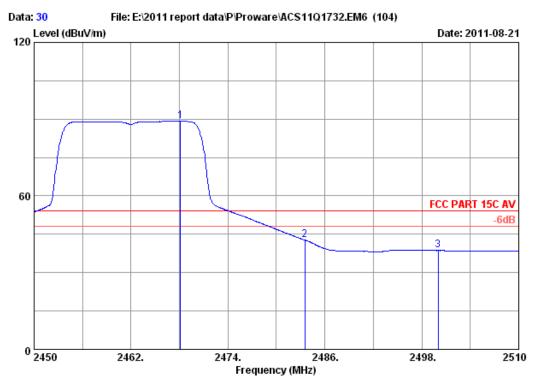
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH11 2462MHz Tx

M/N : PW-MN561

:

	-	Factor	loss		_		Limits Margin (dBuV/m) (dB)	Remark
1	2464.820	28.05	6.84	34.45	100.58	101.02	74.00 -27.02	Peak
2	2483.500	28.08	6.90	34.45	62.28	62.81	74.00 11.19	Peak
3	2500.000	28.10	6.90	34.45	50.33	50.88	74.00 23.12	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.



Site no. : 3m Chamber Data no. : 30

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

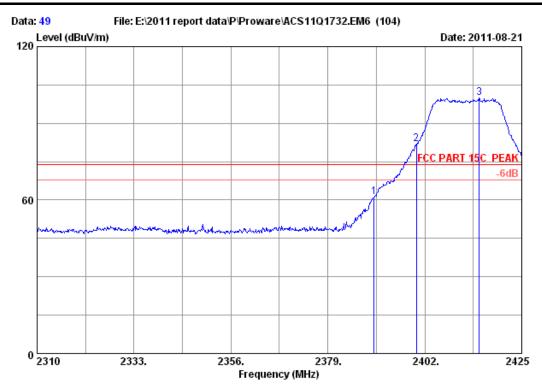
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH11 2462MHz Tx

M/N : PW-MN561

:

	Ant. Freq. Factor (MHz) (dB/m)	Cable Amp loss Fact (dB) (dB)		Emission Level (dBuV/m)	Limits Margin (dBuV/m) (dB)	Remark
2	2468.120 28.05 2483.500 28.08 2500.000 28.10		5 42.19	89.16 42.72 38.62	54.00 -35.16 54.00 11.28 54.00 15.38	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.



Site no. : 3m Chamber Data no. : 49

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

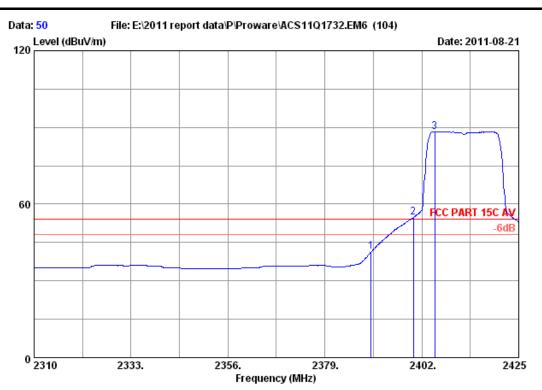
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-MN561

:

	Freq. Factor		r Reading		Limits Margin (dBuV/m) (dB)	Remark
1	2390.000 27.96	6.72 34.44	 60.82	61.06	74.00 12.94	Peak
2	2400.000 27.96	6.75 34.44	81.47	81.74	74.00 -7.74	Peak
3	2414.880 27.98	6.78 34.44	99.72	100.04	74.00 -26.04	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.



Site no. : 3m Chamber Data no. : 50

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

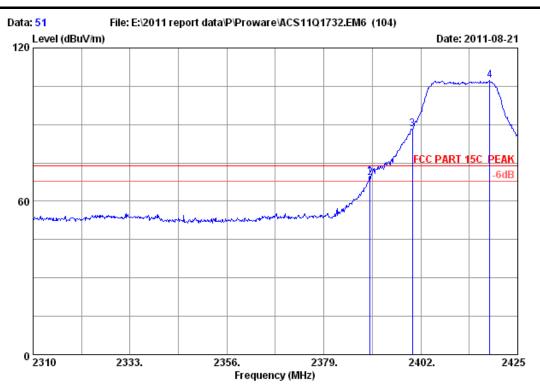
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-MN561

:

	Free			Amp.	Reading	Emission Level	Limits Margin	Remark
	(MHz)		(dB)	(dB)	(dBuV)		(dBuV/m) (dB)	Remark
1	2390.000	27.96	6.72	34.44	41.19	41.43	54.00 12.57	Average
2	2400.000	27.96	6.75	34.44	54.61	54.88	54.00 -0.88	Average
3	2405.105	27.98	6.75	34.44	88.10	88.39	54.00 -34.39	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.



Site no. : 3m Chamber Data no. : 51

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

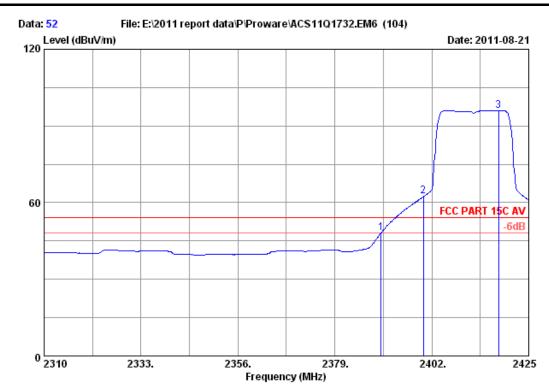
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-MN561

:

	-			Factor	Reading (dBuV)		Limits Margin (dBuV/m) (dB)	Remark
2	2389.925 2390.000 2400.000	27.96	6.72	34.44	69.71 69.10 87.86	69.95 69.34 88.13	74.00 4.05 74.00 4.66 74.00 -14.13	Peak Peak Peak
_	2418.330				106.95	107.27	74.00 -14.13	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.



Site no. : 3m Chamber Data no. : 52
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

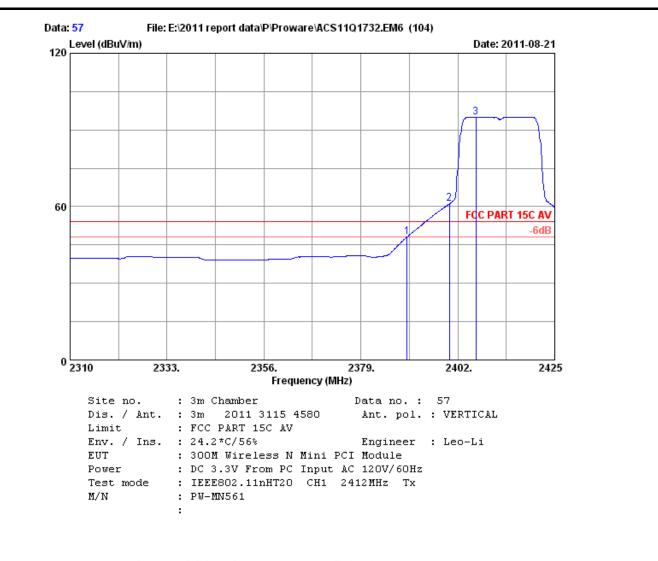
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11g CH1 2412MHz Tx

M/N : PW-MN561

:

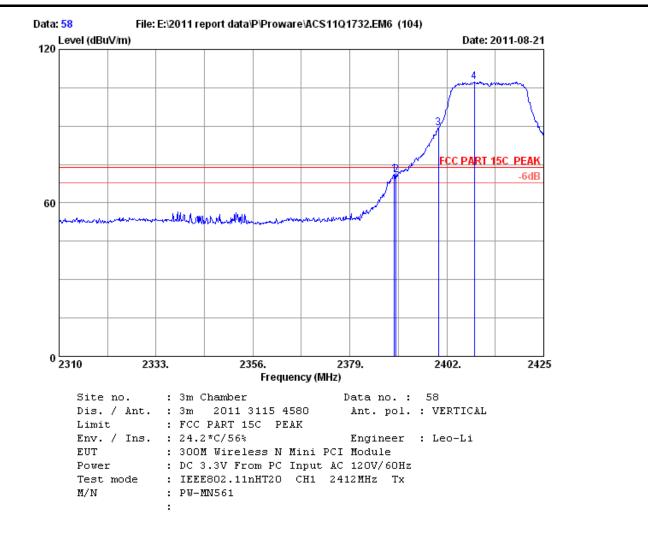
		tor loss	e Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)		Remark	
2	2390.000 27 2400.000 27 2417.870 27	.96 6.75	34.44	48.04 62.11 95.61	48.28 62.38 95.93	 5.72 -8.38 -41.93	Average Average Average	_

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



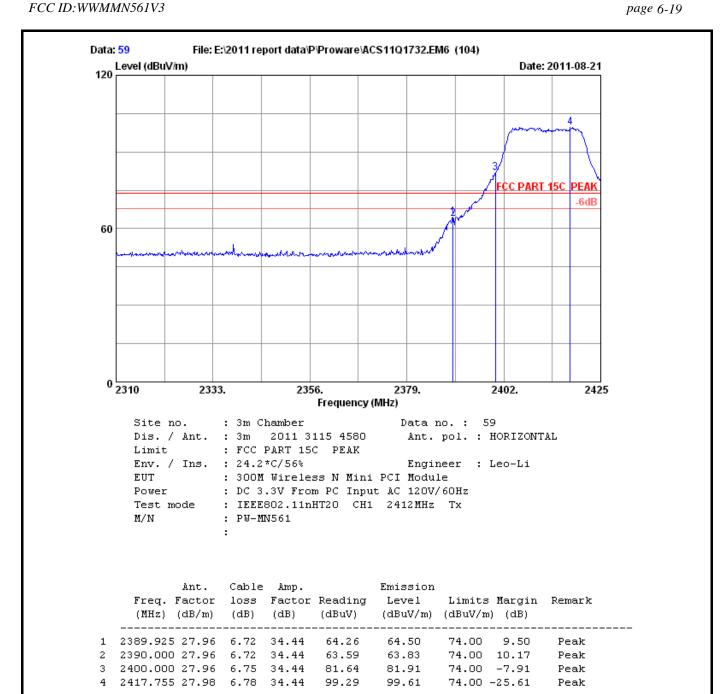
		Ant.	Cable	Amp.		Emission			
	Freq.	Factor	loss	Factor	Reading	Level	Limits Ma	rgin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m) (dB)	
1	2390.000	27.96	6.72	34.44	47.96	48.20	54.00 5	.80	Average
2	2400.000	27.96	6.75	34.44	60.91	61.18	54.00 -7	.18	Average
3	2406.255	27.98	6.75	34.44	94.76	95.05	54.00 -41	.05	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.

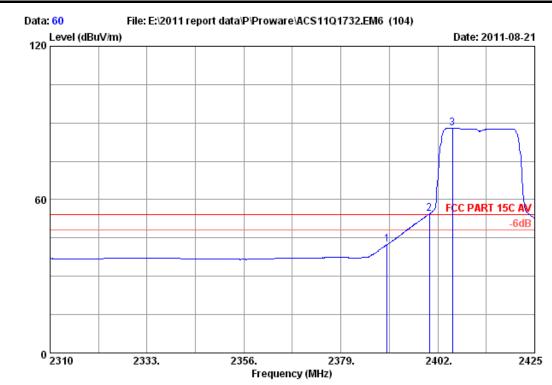


Freq.	Factor			_		Limits Margin (dBuV/m) (dB)	Remark
1 2389.580 2 2390.000 3 2400.000 4 2408.555	27.96 27.96	6.72 6.75	34.44 34.44	71.04 70.49 89.11 106.94	71.28 70.73 89.38 107.23	74.00 2.72 74.00 3.27 74.00 -15.38 74.00 -33.23	Peak Peak Peak Peak

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



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



Site no. : 3m Chamber Data no. : 60

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

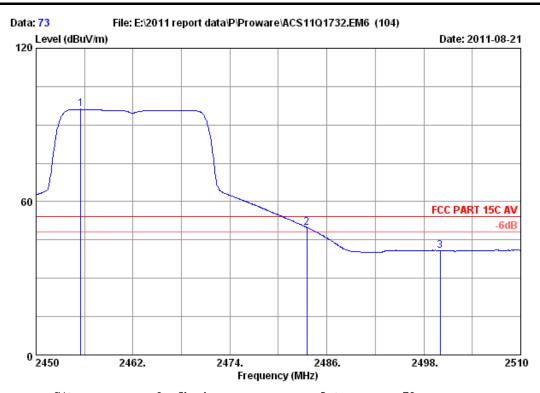
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT20 CH1 2412MHz Tx

M/N : PW-MN561

:

	An Freq. Fac (MHz) (dB	tor loss	e Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)		Margin) (dB)	Remark
2	2390.000 27 2400.000 27 2405.450 27	.96 6.75	34.44	42.27 54.22 87.72	42.51 54.49 88.01	54.00 54.00 54.00	-0.49	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.



Site no. : 3m Chamber Data no. : 73
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH11 2462MHz Tx

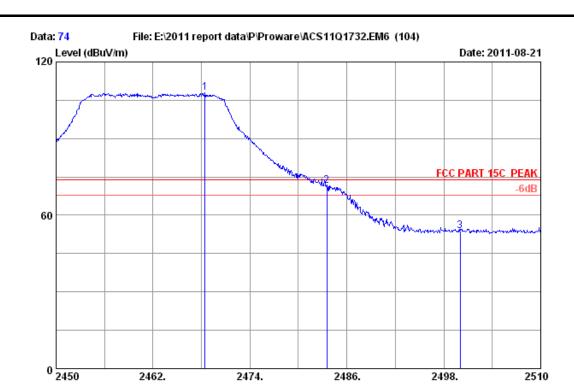
M/N : PW-MN561

:

	Ant. Freq. Factor (MHz) (dB/m)	loss	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)		Margin	Remark
1	2455.520 28.05	6.84	34.44	95.65	96.10	54.00	-42.10	Average
2	2483.500 28.08	6.90	34.45	49.36	49.89	54.00	4.11	Average
3	2500.000 28.10	6.90	34.45	40.34	40.89	54.00	13.11	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.





Site no. : 3m Chamber Data no. : 74
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Frequency (MHz)

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT20 CH11 2462MHz Tx

M/N : PW-MN561

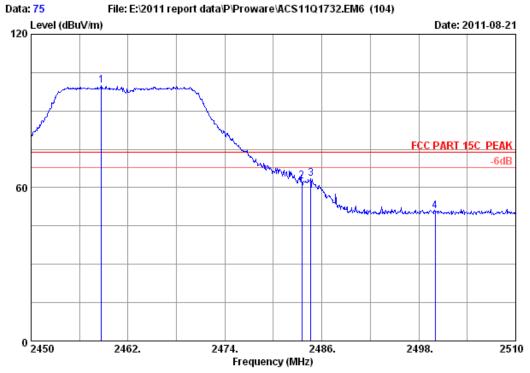
:

	•		loss	Factor	_		Limits Margin (dBuV/m) (dB)	Remark
2 24	483.500	28.05 28.08 28.10	6.90	34.45	71.09	107.94 71.62 53.65	74.00 -33.94 74.00 2.38 74.00 20.35	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.







Site no. : 3m Chamber Data no. : 75

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

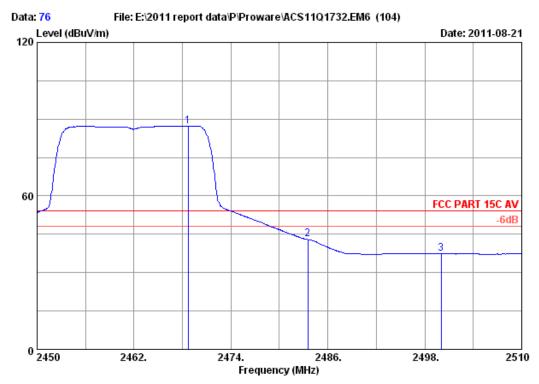
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT20 CH11 2462MHz Tx

M/N : PW-MN561

:

			or Reading (dBuV)		Limits Margin (dBuV/m) (dB)	Remark
1	2458.700 28.05	6.84 34.4	99.61	100.06	74.00 -26.06	Peak
2	2483.500 28.08	6.90 34.4	61.81	62.34	74.00 11.66	Peak
3	2484.620 28.08	6.90 34.4	63.14	63.67	74.00 10.33	Peak
4	2500.000 28.10	6.90 34.4	50.36	50.91	74.00 23.09	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.



Site no. : 3m Chamber Data no. : 76

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT20 CH11 2462MHz Tx

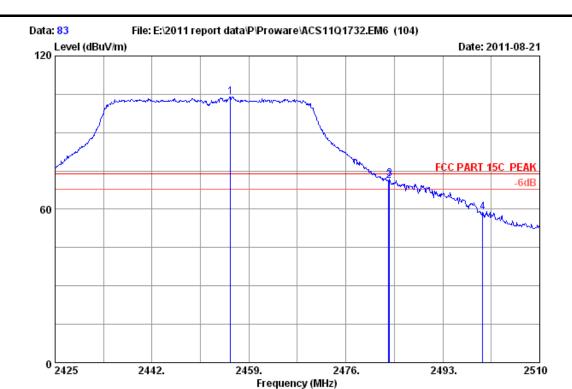
M/N : PW-MN561

:

	Ant. Freq. Factor (MHz) (dB/m)	Cable Amp. loss Factor (dB) (dB)	r Reading (dBuV)	Emission Level (dBuV/m)	Limits Margin (dBuV/m) (dB)	Remark
2	2468.720 28.05 2483.500 28.08 2500.000 28.10		42.45	87.33 42.98 37.40	54.00 -33.33 54.00 11.02 54.00 16.60	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.





Site no. : 3m Chamber Data no. : 83

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH7 2452MHz Tx

M/N : PW-MN561

:

	•		Cable loss (dB)	Factor	Reading (dBuV)			Margin) (dB)	Remark	
1	2455.770	28.05	6.84	34.44	103.64	104.09	74.00	-30.09	Peak	
2	2483.500	28.08	6.90	34.45	70.83	71.36	74.00	2.64	Peak	
3	2483.650	28.08	6.90	34.45	71.23	71.76	74.00	2.24	Peak	
4	2500.000	28.10	6.90	34.45	58.37	58.92	74.00	15.08	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.

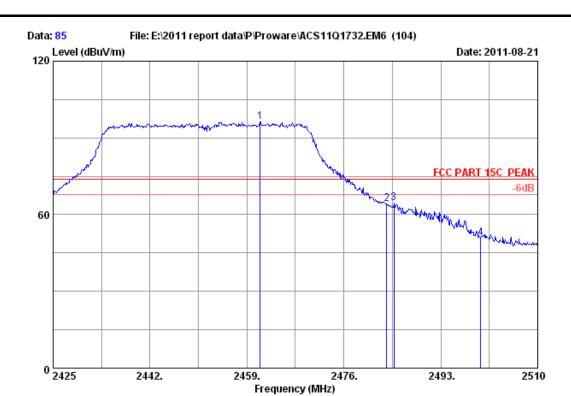




		Ant.	Cable	Amp.		Emission		
	Freq.	Factor	loss	Factor	Reading	Level	Limits Margin	Remark
	(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m) (dB)	
1	2447.525	5 28.03	6.84	34.44	90.12	90.55	54.00 -36.55	Average
2	2483.500	28.08	6.90	34.45	50.76	51.29	54.00 2.71	Average
3	2500.000	28.10	6.90	34.45	41.17	41.72	54.00 12.28	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.





Site no. : 3m Chamber Dis. / Ant. : 3m 2011 3115 4580 Data no.: 85

Ant. pol. : HORIZONTAL

: FCC PART 15C PEAK Limit

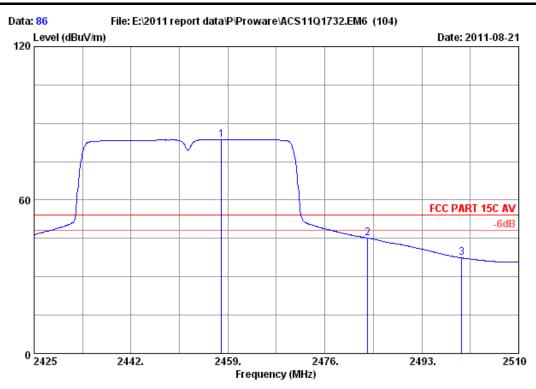
Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

: 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH7 2452MHz Tx

M/N: PW-MN561

	-		loss		Reading (dBuV)		Limits Margin (dBuV/m) (dB)	Remark
1	2461.295	28.05	6.84	34.44	95.72	96.17	74.00 -22.17	Peak
2	2483.500	28.08	6.90	34.45	63.55	64.08	74.00 9.92	Peak
3	2484.755	28.08	6.90	34.45	64.08	64.61	74.00 9.39	Peak
4	2500.000	28.10	6.90	34.45	50.29	50.84	74.00 23.16	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.



Site no. : 3m Chamber Data no. : 86

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH7 2452MHz Tx

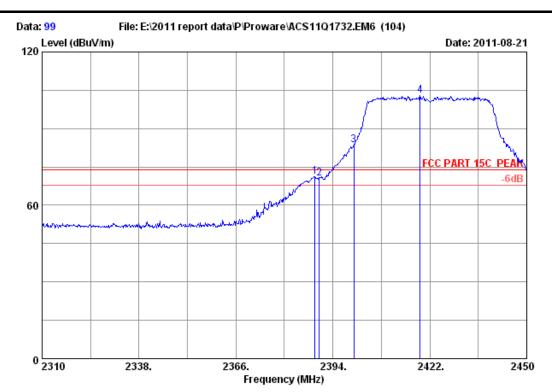
M/N : PW-MN561

:

	Ant. Freq. Factor (MHz) (dB/m)	Cable Amp. loss Factor (dB) (dB)		Emission Level (dBuV/m)	Limits Margin (dBuV/m) (dB)	Remark
1	2457.895 28.05	6.84 34.44	83.24	83.69	54.00 -29.69	Average
2	2483.500 28.08	6.90 34.45	44.61	45.14	54.00 8.86	Average
3	2500.000 28.10	6.90 34.45	36.82	37.37	54.00 16.63	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.





Site no. : 3m Chamber Data no. : 99

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

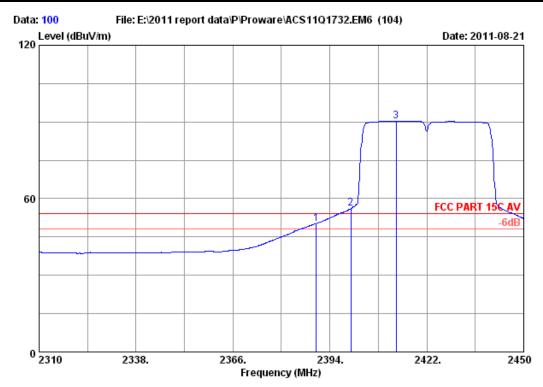
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH1 2422MHz Tx

M/N : PW-MN561

:

	-			Factor	Reading (dBuV)			s Margin n) (dB)	Remark	
1	2388.820	27.96	6.72	34.44	71.09	71.33	74.00	2.67	Peak	
2	2390.000	27.96	6.72	34.44	70.29	70.53	74.00	3.47	Peak	
3	2400.000	27.96	6.75	34.44	83.24	83.51	74.00	-9.51	Peak	
4	2419.200	27.98	6.78	34.44	102.57	102.89	74.00	-28.89	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.



Site no. : 3m Chamber Data no. : 100
Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2 *C/56% Engineer : Leo-Li

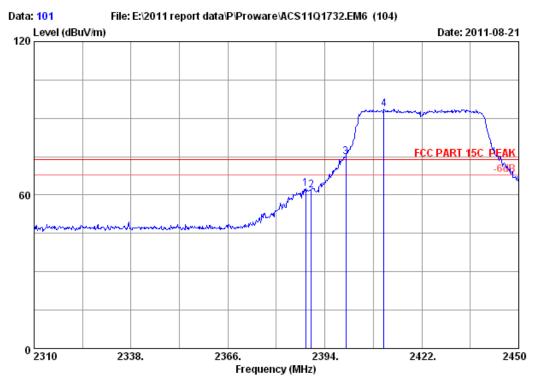
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH1 2422MHz Tx

M/N : PW-MN561

:

	Ant. Freq. Factor (MHz) (dB/m)	Cable Amp loss Fact (dB) (dB)		Limits Margin (dBuV/m) (dB)	Remark
_	2390.000 27.96		 50.19 56.10	54.00 3.81 54.00 -2.10	Average Average
_	2413.180 27.98		 90.34	54.00 -36.34	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.



Site no. : 3m Chamber Data no. : 101

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C PEAK

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

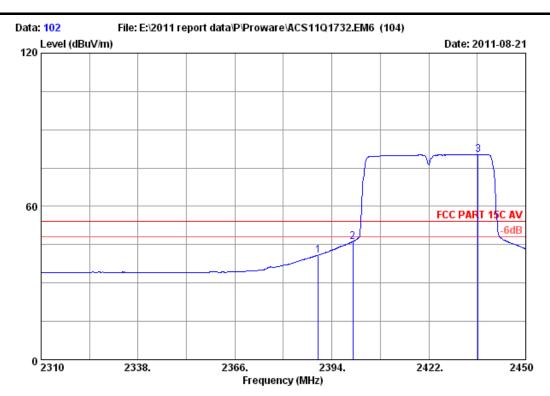
EUT : 300M Wireless N Mini PCI Module Power : DC 3.3V From PC Input AC 120V/60Hz Test mode : IEEE802.11nHT40 CH1 2422MHz Tx

M/N : PW-MN561

:

		loss		Reading		Limits Margin (dBuV/m) (dB)	Remark
1	2388.400 27.96	6.72	34.44	62.32	62.56	74.00 11.44	Peak
2	2390.000 27.96	6.72	34.44	61.47	61.71	74.00 12.29	Peak
3	2400.000 27.96	6.75	34.44	74.77	75.04	74.00 -1.04	Peak
4	2411.080 27.98	6.78	34.44	93.29	93.61	74.00 -19.61	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.



Site no. : 3m Chamber Data no. : 102

Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL

Limit : FCC PART 15C AV

Env. / Ins. : 24.2*C/56% Engineer : Leo-Li

EUT : 300M Wireless N Mini PCI Module
Power : DC 3.3V From PC Input AC 120V/60Hz
Test mode : IEEE802.11nHT40 CH1 2422MHz Tx

M/N : PW-MN561

:

	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	2390.000 27.96		40.63	40.87	54.00 13.13	Average
2	2400.000 27.96		45.95	46.22	54.00 7.78	Average
3	2436.280 28.00		79.97	80.34	54.00 -26.34	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.08,11	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08,11	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,11	1Year

7.2.Limit

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

7.3.Test Procedure

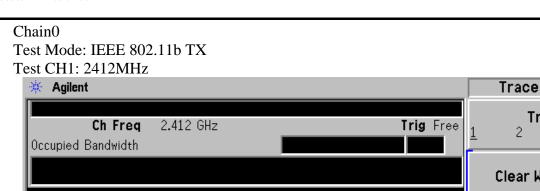
The transmitter output was connected to a spectrum analyzer, The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 300 kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

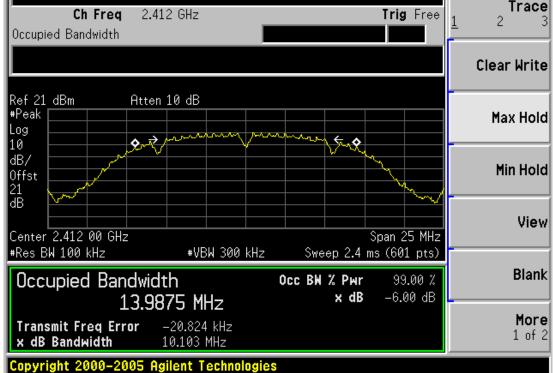
7.4.Test Results

EUT: 300M Wireless N Mini PCI Module					
M/N: PW-MN561					
Test date:2011-08-27	Pressure: 101.2 kpa	Humidity: 56%			
Tested by: Leo-Li	Test site: RF Site	Temperature : 24.8 °C			

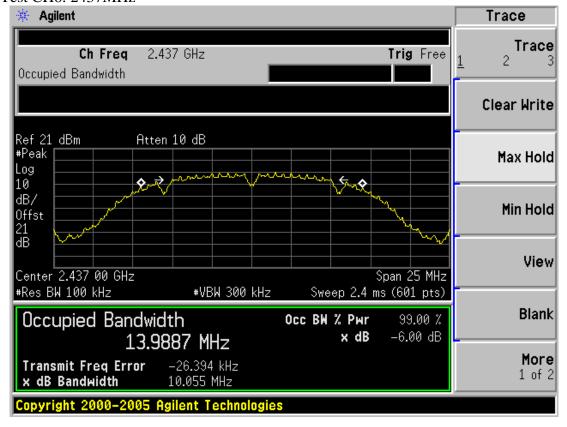
Cable loss: 1 dB		Attenuator loss: 20 dB		Antenna Gain: 0 dBi		
Test Mode	СН	6dB bandwidth (MHz)		Limit (KHz)		
		Chain0	Chain1	(/		
	CH1	10.103	10.119	>500		
11b	CH6	10.055	10.100	>500		
	CH11	10.100	10.115	>500		
	CH1	16.408	16.423	>500		
11g	CH6	16.392	16.421	>500		
	CH11	16.416	16.440	>500		
11	CH1	17.637	17.619	>500		
11n HT20	CH6	17.640	17.621	>500		
H120	CH11	17.638	17.613	>500		
11	CH1	36.454	36.824	>500		
11n HT40	CH4	36.705	36.482	>500		
11140	CH7	36.810	36.810	>500		
Conclusion: PASS						





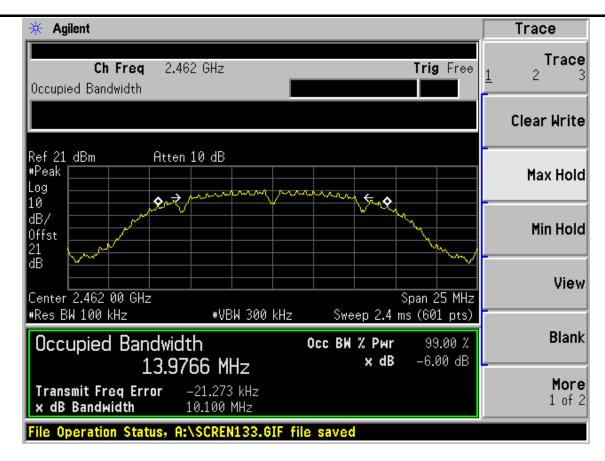


Test CH6: 2437MHz



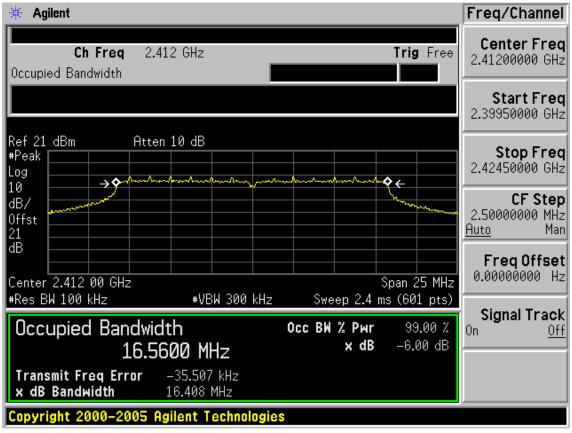
Test CH11: 2462MHz





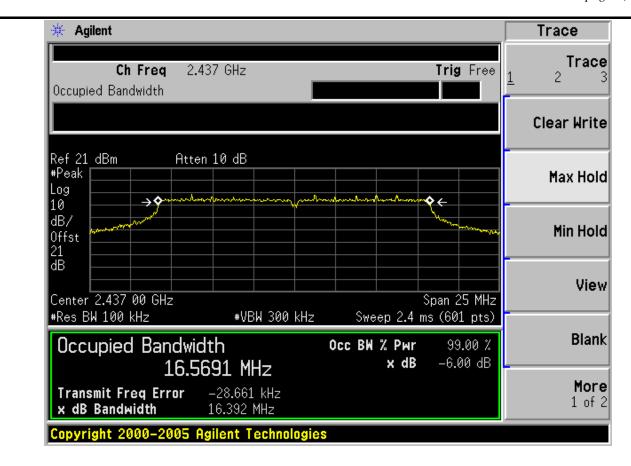
Test Mode: IEEE 802.11g TX

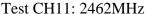
Test CH1: 2412MHz

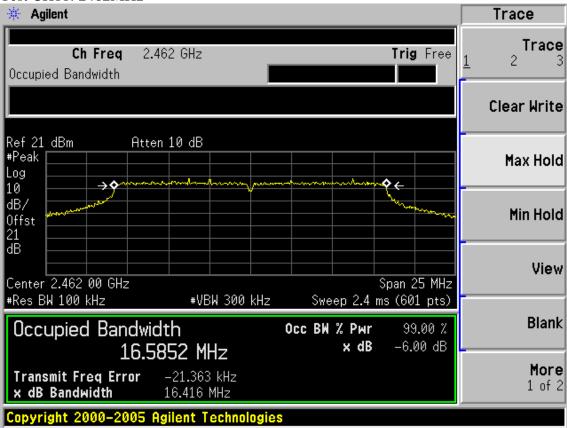


Test CH6: 2437MHz



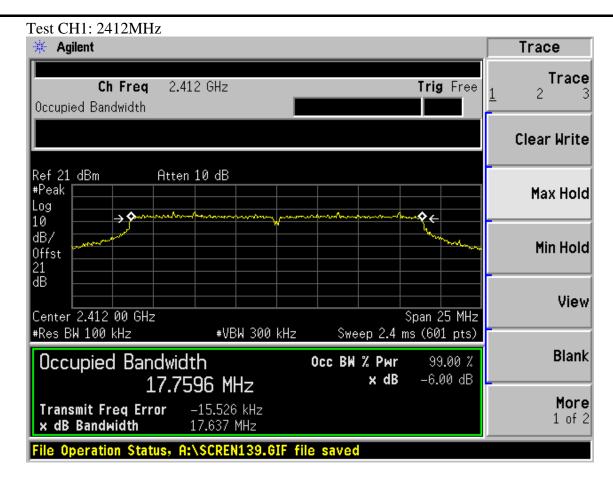


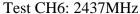


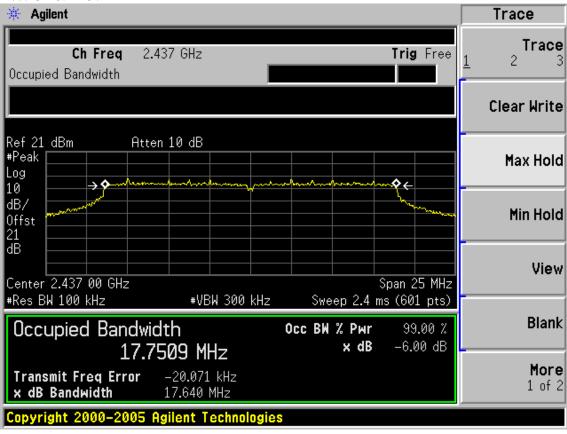


Test Mode: IEEE 802.11n HT20 TX



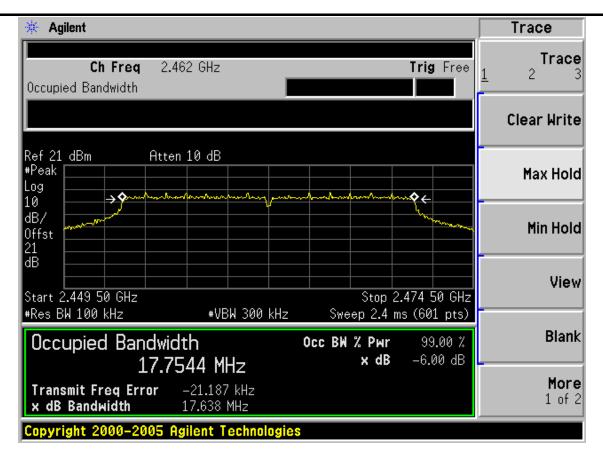






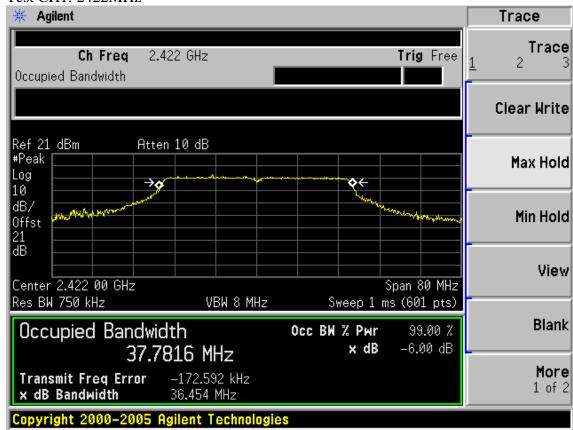
Test CH11: 2462MHz



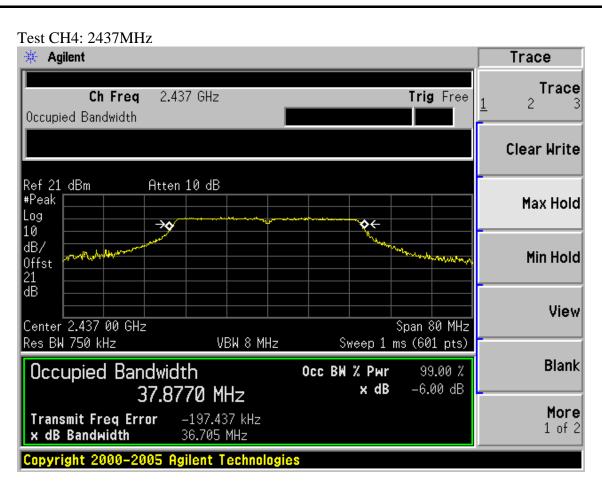


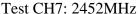
Test Mode: IEEE 802.11n HT40 TX

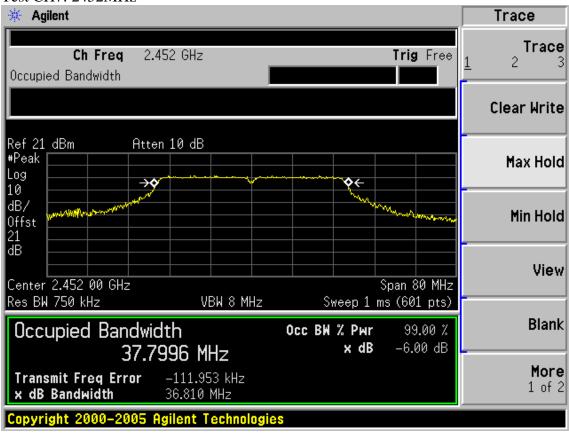
Test CH1: 2422MHz













Chain 1

Test Mode: IEEE 802.11b TX

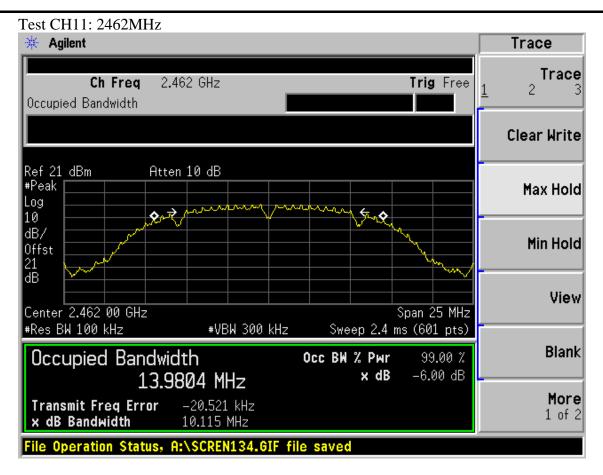
Test CH1: 2412MHz



Test CH6: 2437MHz

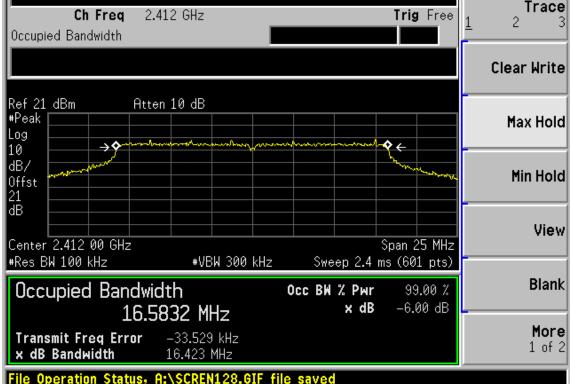






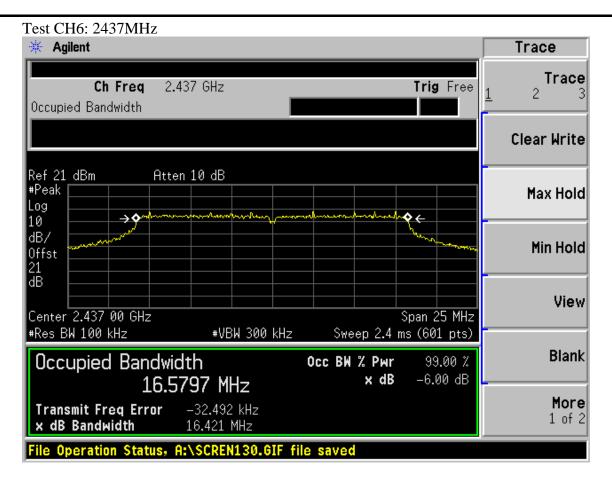
Test Mode: IEEE 802.11g TX



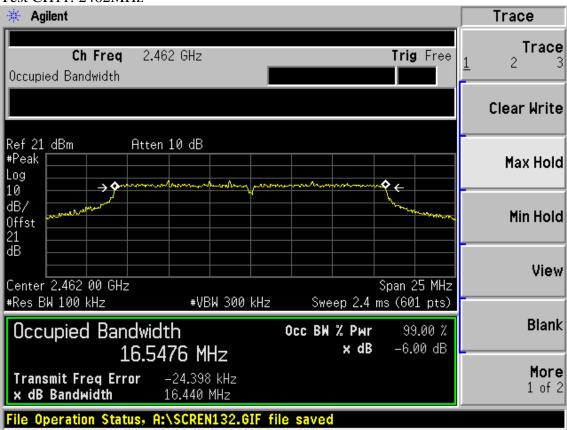


Trace

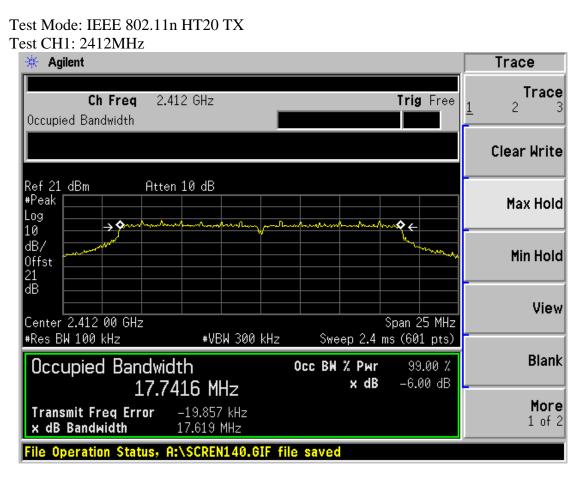




Test CH11: 2462MHz

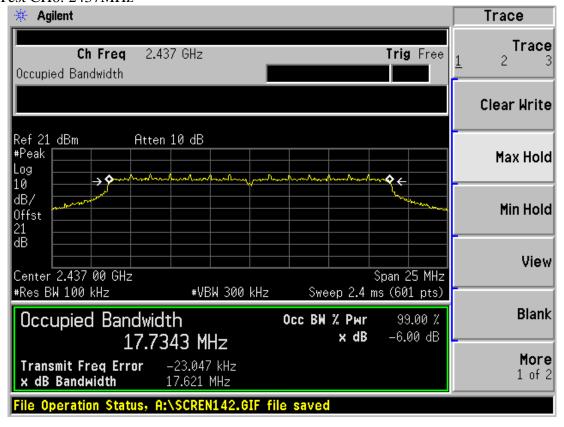




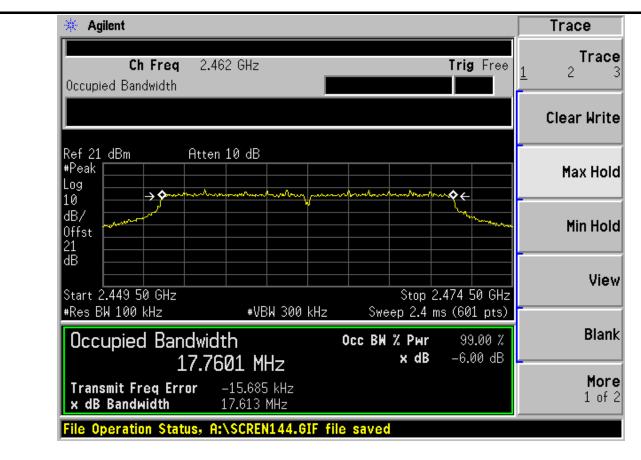




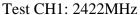
Test CH11: 2462MHz

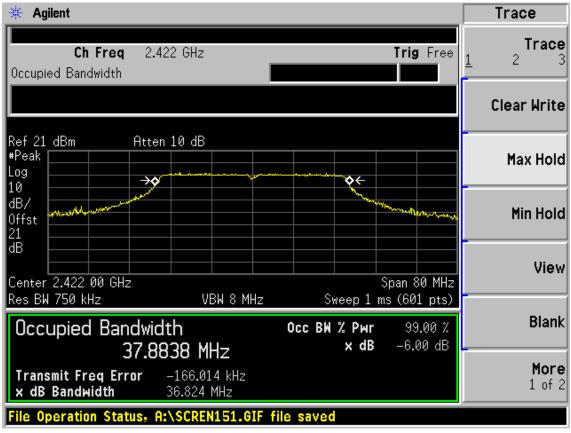






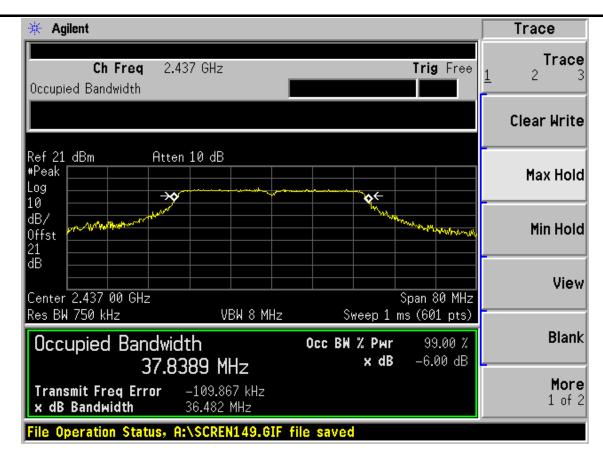
Test Mode: IEEE 802.11n HT40 TX

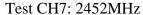


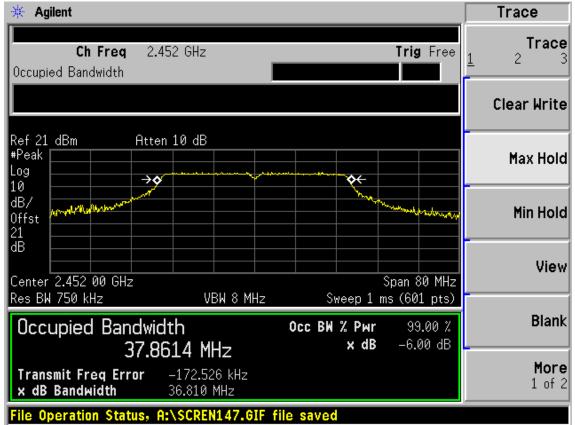


Test CH4: 2437MHz











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	May.08,11	1Year
2.	Power sensor	Anritsu	MA2491A	0033005	May.08,11	1Year
3	Attenuator	Agilent	8491B	MY39262165	May.08,11	1 Year
4	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 11	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,11	1Year

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 Bandwidth correction method according to ANSI C63.10 clause 6.10.2.1 part (c) was used:
 - 1) Set the RBW=3MHz and VBW =8MHz
 - 2) Turn averaging off
 - 3) Set sweep to automatic
 - 4) Set the span just large enough to capture the emission
 - 5) Use a peak detector on max hold
 - 6) Record the measured power
 - 7) Calculate Output power of EUT use the formula:

Peak output power =measured power+10log[(6dB bandwidth of emission)/(analyzer RBW)]

Note: For IEEE802.11n mode, it's MIMO system, so calculate total peak power by add each chain's measured power.

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



8.4.Test Results

EUT: 300M Wireless N Mini PCI Module					
M/N: PW-MN561					
Test date: 2011-08-28	Pressure: 100.9 kpa	Humidity: 53.9 %			
Tested by: Leo-Li	Test site: RF site	Temperature: 25 °C			

C	'able loss: 1 dB	Atten	uator loss: 2	20 dB	Antenna Gain: 0 dBi
Test Mode	CH (MHz)	Pea	k output Po (dBm)	Limit (dBm)	
	,	Chain0	Chain1	Total	,
	CH1	15.31	13.39	N/A	30
11b	CH6	14.86	14.66	N/A	30
	CH11	15.41	14.32	N/A	30
	CH1	19.54	17.83	N/A	30
11g	СН6	20.40	19.72	N/A	30
	CH11	18.67	17.77	N/A	30
1.1	CH1	17.05	16.82	19.95	30
11n HT20	CH6	21.43	22.27	24.88	30
H120	CH11	17.95	17.54	20.76	30

			Result						
Test Mode	СН		Measured power(dBm)/3MHz		PK Output power (dBm)				
		Chain0	Chain1	Chain0	Chain1	Total			
11n	CH1	3.19	3.86	14.08	14.75	17.44	30		
HT40	CH4	9.93	11.13	20.82	22.02	24.47	30		
	CH7	4.52	4.98	15.41	15.87	18.66	30		

Chain 0 6dB Bandwidth for 11n HT40: 36.81MHz Chain 1 6dB Bandwidth for 11n HT40: 36.82MHz

Chain 0 BW correction factor = $10\log[(36.81\text{MHz})/(3\text{MHz})] = 10.89\text{dB}$ Chain 1 BW correction factor = $10\log[(36.82\text{MHz})/(3\text{MHz})] = 10.89\text{dB}$

Conclusion: PASS



£(f):

FTun

Swp

Marker

Center 2.452 00 GHz

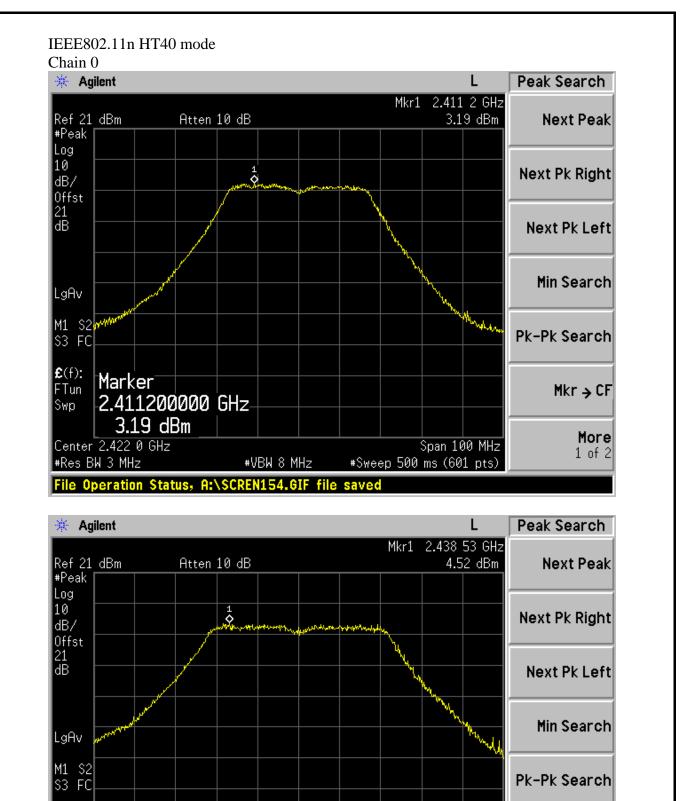
#Res BW 3 MHz

2.438530000 GHz

#VBW 8 MHz

Operation Status, A:\SCREN179.GIF file saved

4.52 dBm



Span 80 MHz

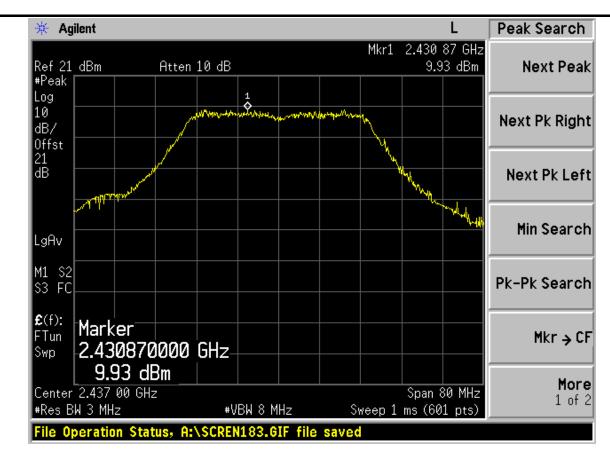
Sweep 1 ms (601 pts)

 $Mkr \rightarrow CF$

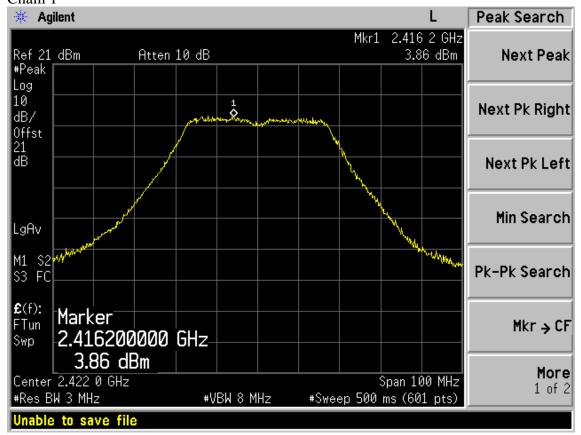
More

1 of 2

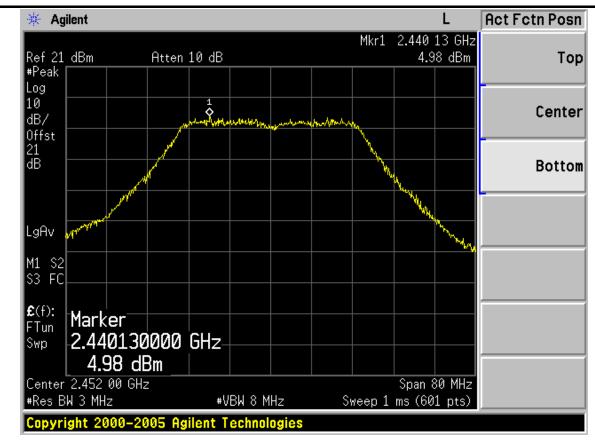


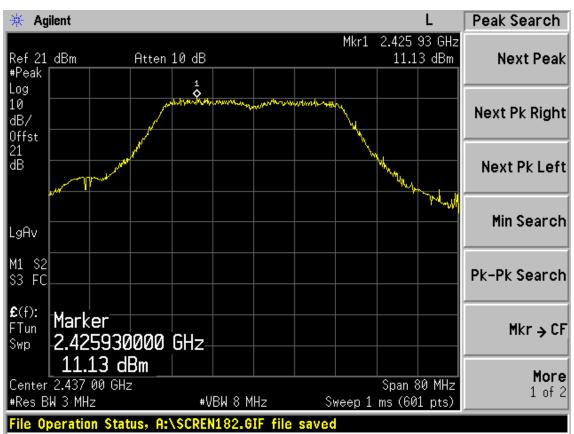














9. POWER SPECTRAL DENSITY TEST

9.1.Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 11	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08, 11	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08, 11	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.
- 3, For IEEE802.11n mode, it's MIMO technology, so account total power density by add each chain's power density.

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



9.4.Test Results

EUT: 300M Wireless N Mini PCI Module					
M/N: PW-MN561					
Test date:2011-08-28	Pressure:	101.4 kpa	Humidity: 51 %		
Tested by: Leo-Li	Test site:	RF Site	Temperature : 25°℃		

Cable loss: 1 dE	3	Attenuator	loss: 20 d	lB	Antenna Gain: 0 dBi
Test Mode	СН	Power de	nsity (dBm	Limit	
		Chain0	Chain1	Total	(dBm/3KHz)
	CH1	-11.27	-10.40	N/A	8
11b	СН6	-11.66	-10.80	N/A	8
	CH11	-10.34	-10.27	N/A	8
	CH1	-13.43	-13.23	N/A	8
11g	CH6	-14.11	-14.30	N/A	8
	CH11	-13.86	-13.41	N/A	8
11	CH1	-17.69	-17.54	-14.60	8
11n HT20	CH6	-13.29	-13.14	-10.20	8
11120	CH11	-16.54	-16.67	-13.59	8
11	CH1	-20.93	-20.86	-17.88	8
11n HT40	CH4	-15.56	-16.50	-12.99	8
11140	CH7	-20.75	-21.13	-17.93	8
Conclusion: PA	ASS				



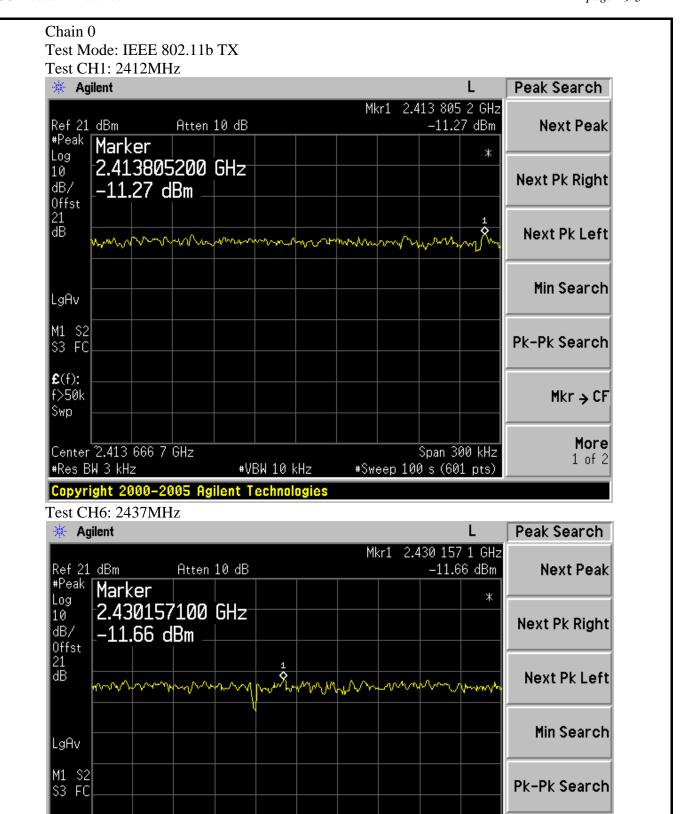
£(f): f>50k

Swp

Center 2.430 166 7 GHz

#Res BW 3 kHz

#VBW 10 kHz



Span 300 kHz

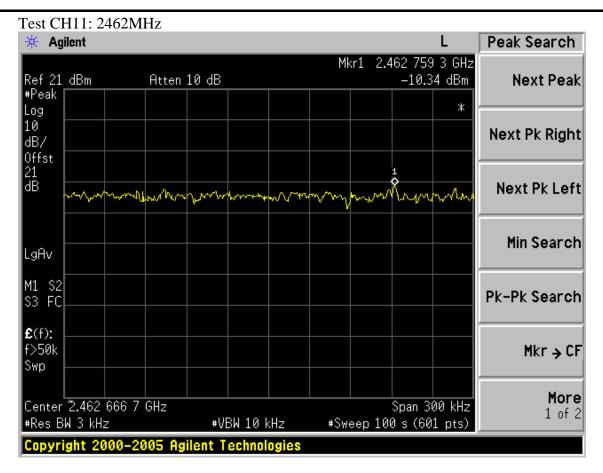
#Sweep 100 s (601 pts)

Mkr → CF

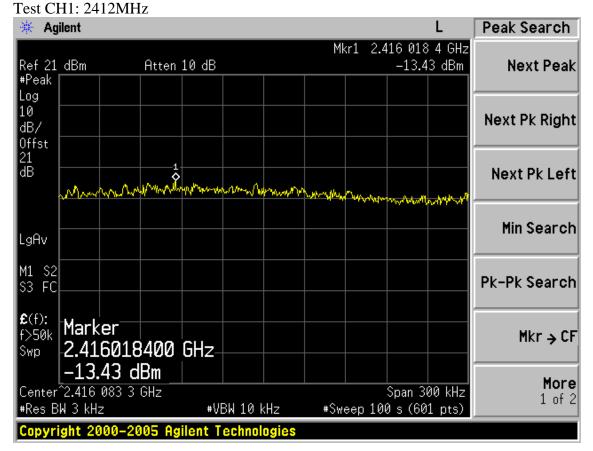
More

1 of 2

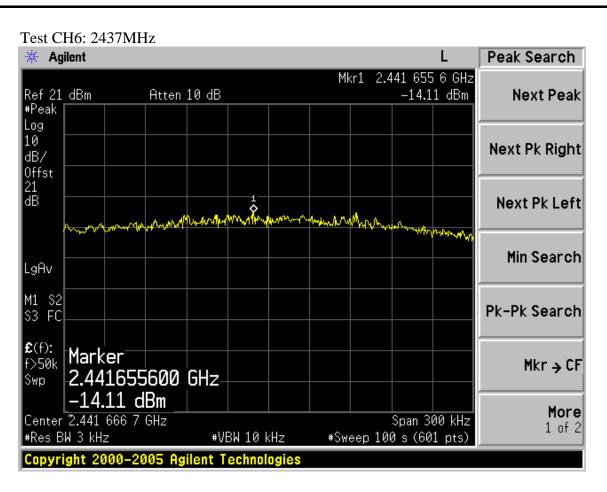




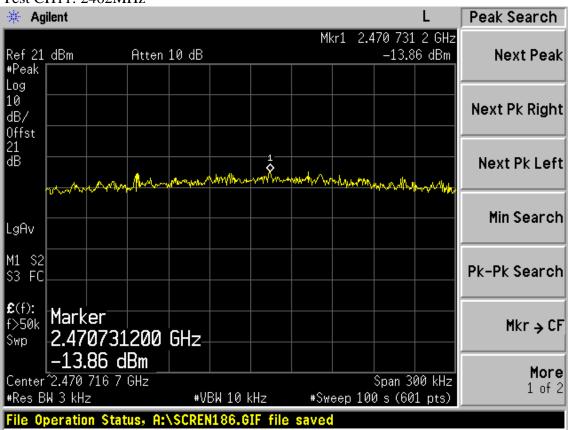
Test Mode: IEEE 802.11g TX



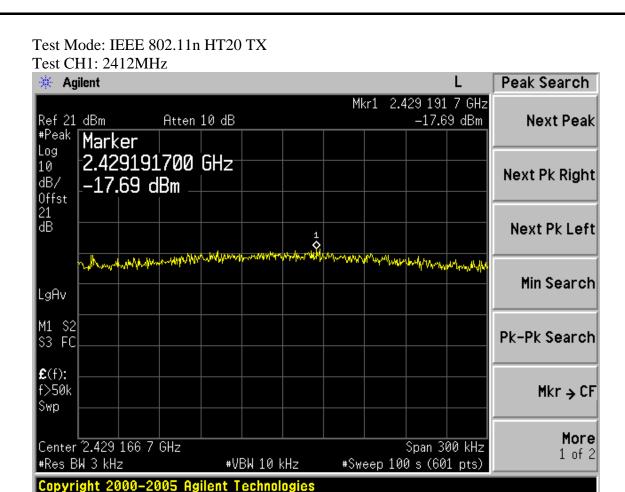


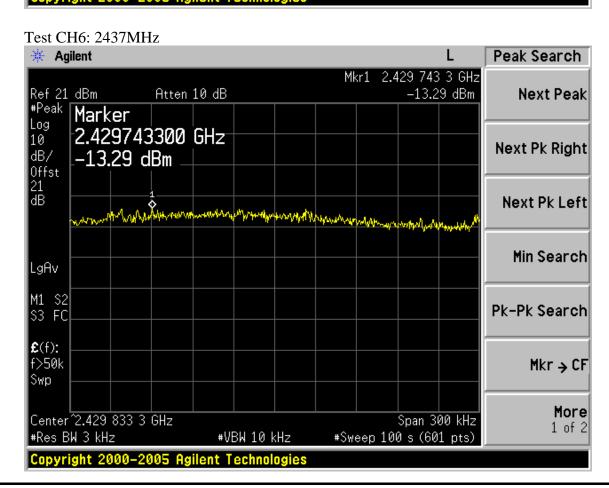




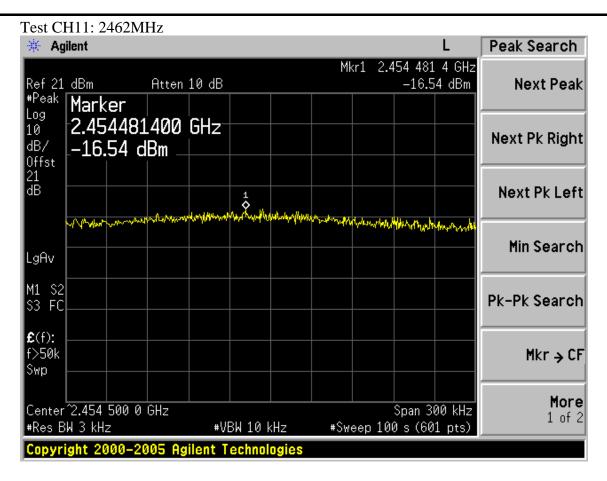






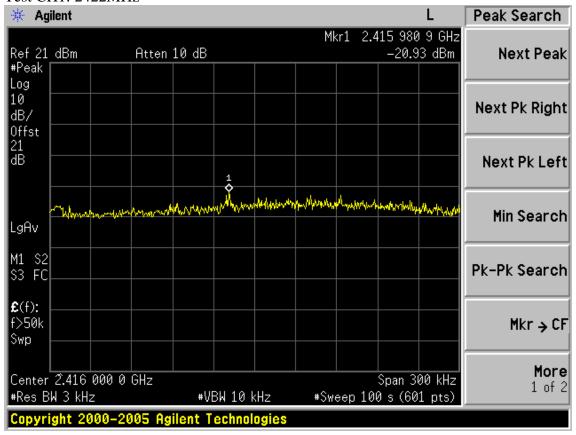




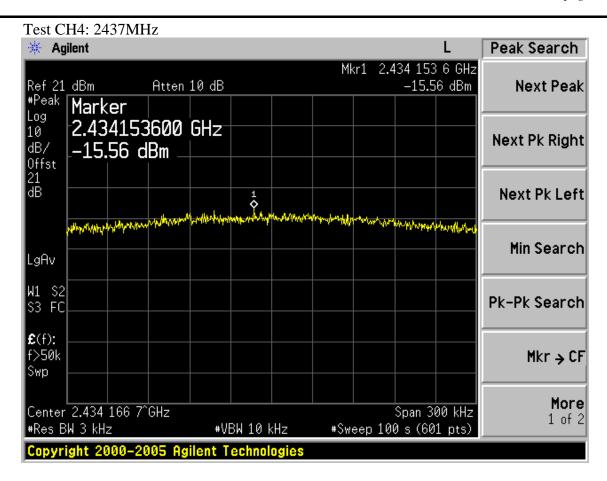


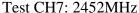
Test Mode: IEEE 802.11n HT40 TX

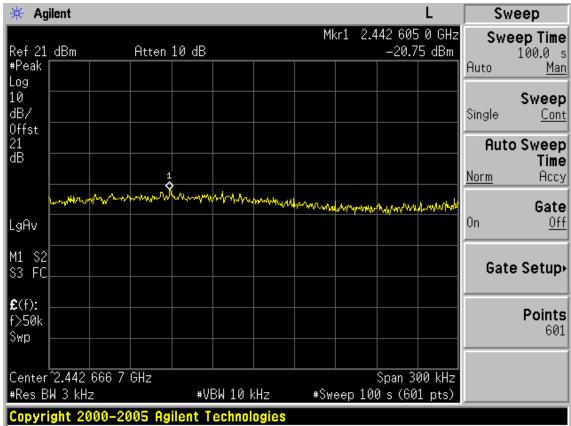
Test CH1: 2422MHz











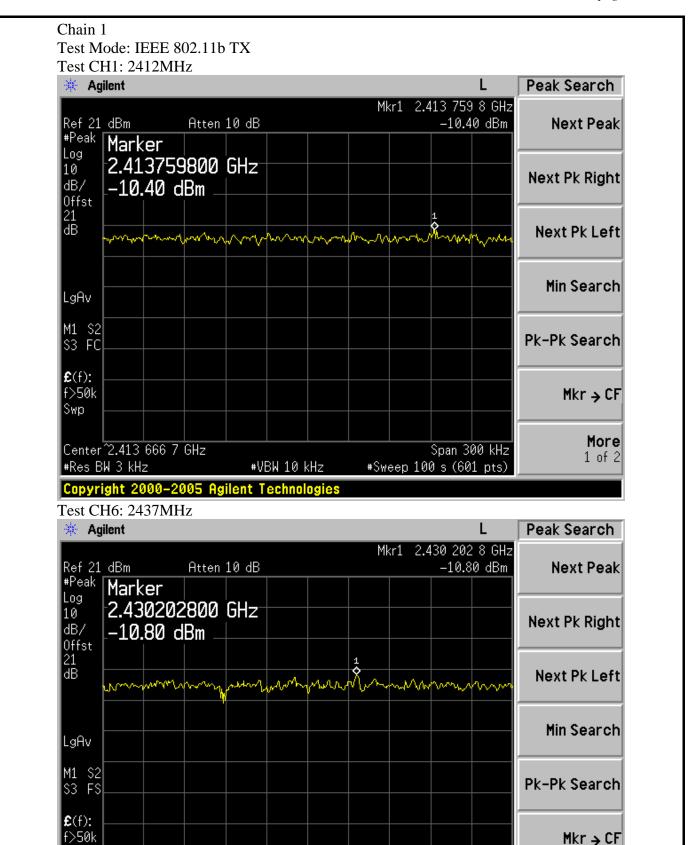


Swp

Center 2.430 166 7 GHz

#Res BW 3 kHz

#VBW 10 kHz



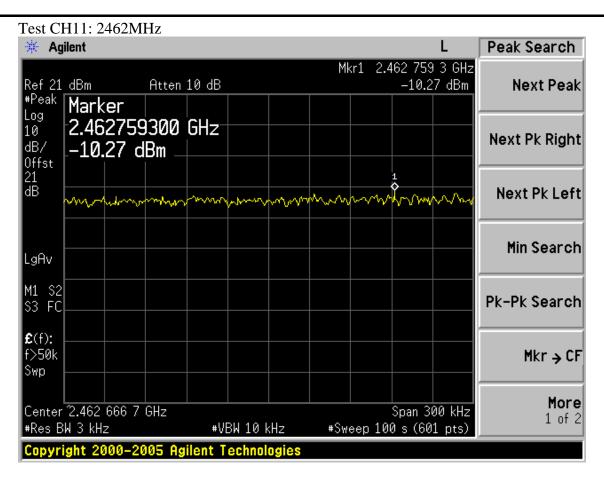
Span 300 kHzi

#Sweep 100 s (601 pts)

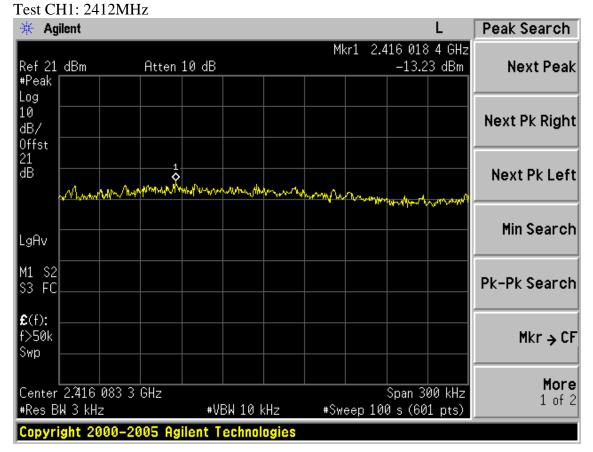
More

1 of 2

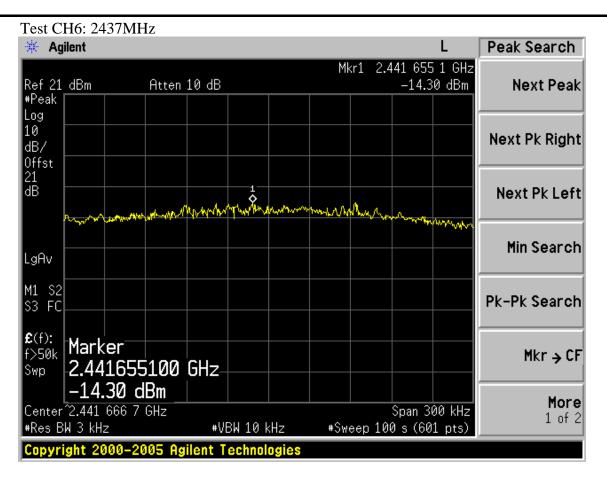


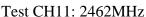


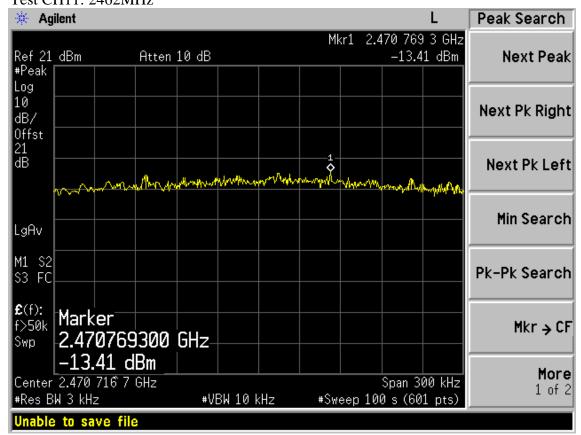
Test Mode: IEEE 802.11g TX



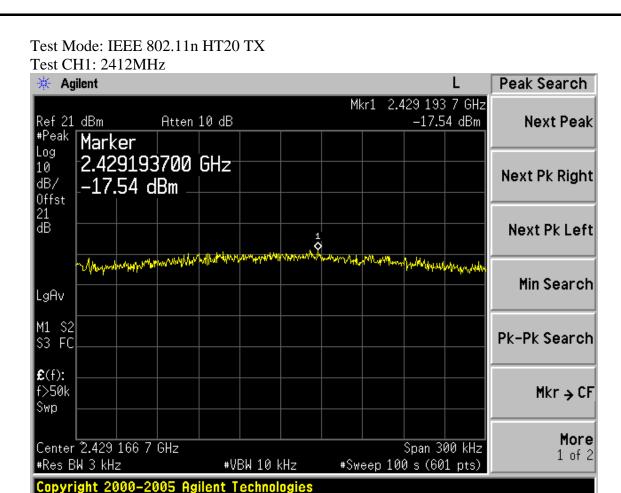


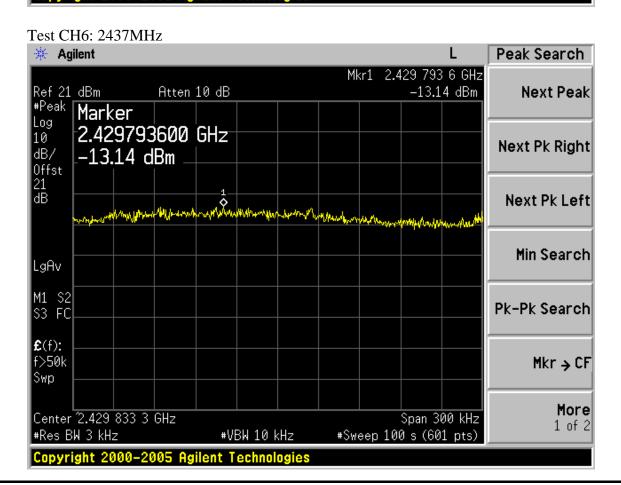




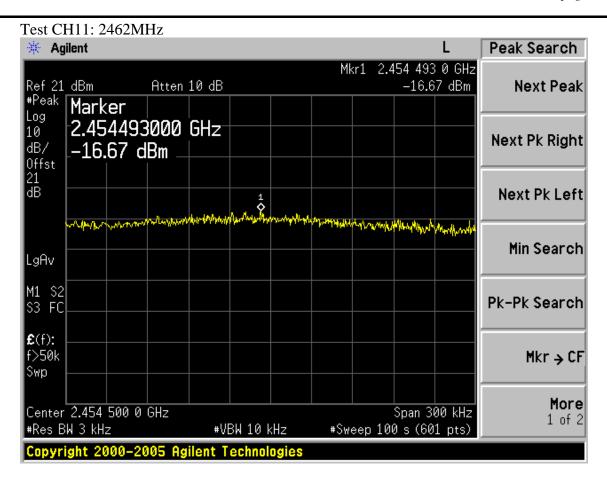






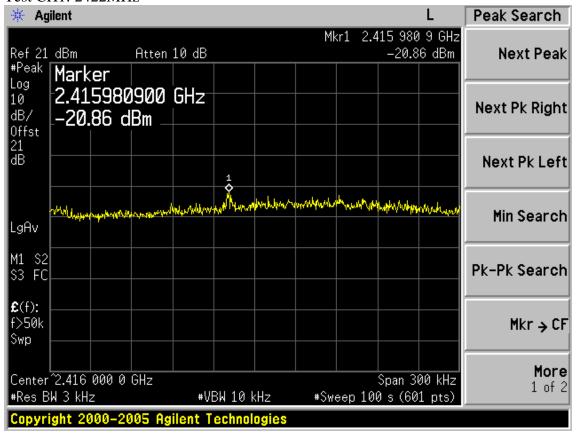




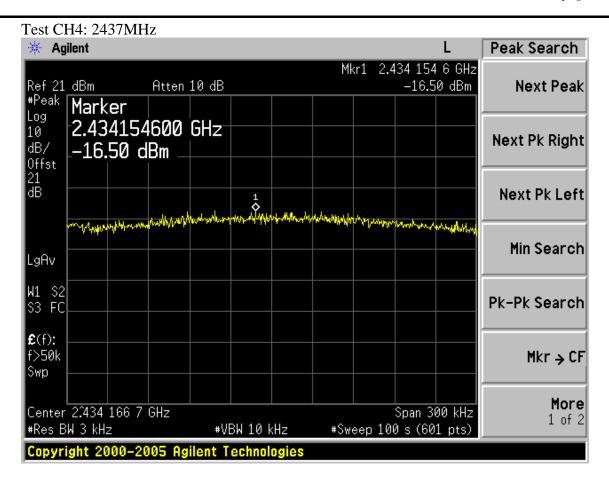


Test Mode: IEEE 802.11n HT40 TX

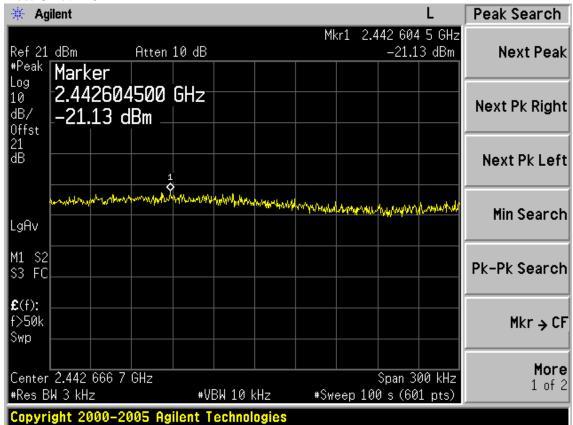
Test CH1: 2422MHz











page 10-1

10. ANTENNA REQUIREMENT

10.1. STANDARD APPLICABLE

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

10.2. ANTENNA CONNECTED CONSTRUCTION

The antennas used for this product are MIMO 2X2 dipole antenna with SMA-B connector and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0dBi.



11.MPE ESTIMATION

11.1.Limit for General Population/ Uncontrolled Exposures

Frequency	Power density (mW/cm ²)	Averaging time(minutes)
300MHz1.5GHz	F/1500	30
1.5GHz100GHz	1.0	30

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



page 11-2

11.2.Estimation Result

EUT: 300M Wireless N Mini PCI Module						
M/N: PW-MN561						
Test date:2011-08-28	Pressure:	100.5 kpa	Humidity: 49%			
Tested by: Leo-Li	Test site:	RF Site	Temperature : 25°℃			

Cable loss: 1 dB		Attenuator loss: 20 dB				Antenna Gain: 0 dBi	
Test Mode	СН	Frequency (MHz)	Peak Output Power (dBm)	Output Power (mW)	Antenna Gain (dBi)	Antenna Gain (Linear)	МРЕ
	CH1	2412	15.31	33.96	0	1.00	0.0068
11b	CH6	2437	14.86	30.62	0	1.00	0.0061
110	CH11	2462	15.41	34.75	0	1.00	0.0069
	CH1	2412	19.54	89.95	0	1.00	0.0179
11g	CH6	2437	20.4	109.65	0	1.00	0.0218
	CH11	2462	18.67	73.62	0	1.00	0.0147
11	CH1	2412	19.95	98.86	0	1.00	0.0197
11n HT20	CH6	2437	24.88	307.61	0	1.00	0.0612
П120	CH11	2462	20.76	119.12	0	1.00	0.0237
1.1	CH1	2422	17.44	55.46	0	1.00	0.0110
11n HT40	CH4	2437	24.47	279.90	0	1.00	0.0557
11140	CH7	2452	18.66	73.45	0	1.00	0.0146

Note: The estimation distance is 20cm



12.DEVIATION TO TEST SPECIFICATIONS	
[NONE]	