

FCC 47 CFR PART 15 SUBPART C

Product Type : 802.11n-BT COMBO CARD
Applicant : Atheros Communications Inc.
Address : 1700 Technology Drive, San Jose, CA 95110
Trade Name : ATHEROS
Model Number : AR5B195
Test Specification : FCC 47 CFR PART 15 SUBPART C: Oct., 2009
Canada RSS-210 ISSUE 7: Jun., 2007
Canada RSS-Gen ISSUE 2: Jun., 2007
ANSI C63.4-2003
Issue Date : Oct. 05, 2010

Issue by

A Test Lab Techno Corp.
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Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Oct. 05, 2010	Initial Issue	

Verification

Issued Date: 2010/10/05

Product Type : 802.11n-BT COMBO CARD
Applicant : Atheros Communications Inc.
Address : 1700 Technology Drive, San Jose, CA 95110
Trade Name : ATHEROS
Model Number : AR5B195
FCC ID : PPD-AR5B195
EUT Rated Voltage : DC 3.3V
Test Voltage : 120 Vac / 60 Hz
Applicable : FCC 47 CFR PART 15 SUBPART C: Oct., 2009
Standard : Canada RSS-210 ISSUE 7: Jun., 2007
Canada RSS-Gen ISSUE 2: Jun., 2007
ANSI C63.4-2003
Test Result : Complied
Performing Lab. : A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
Tel : +86-3-2710188 / Fax : +86-3-2710190
Taiwan Accreditation Foundation accreditation number:
1330
<http://www.atl-lab.com.tw/e-index.htm>



The above equipment was tested by A Test Lab Techno Corp. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247 .
The test results of this report relate only to the tested sample identified in this report.

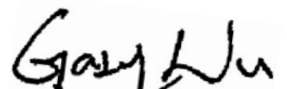
Approved By : 
(Manager) (Miller Lee)
Reviewed By : 
(Testing Engineer) (Gary Wu)

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1 General Information

1.1 Summary of Test Result

Standard		Item	Result	Remark
15.247	RSS-GEN			
15.207	7.2.2	AC Power Conducted Emission	N/A	Reference original report
-----	6	Receiver Radiated Emissions	PASS	-----
Standard		Item	Result	Remark
15.247	RSS-210			
15.247(d)	A8.5	Transmitter Radiated Emissions	PASS	-----
15.247(b)(3)	A8.4	Max. Output Power	PASS	-----
15.247(a)(2)	A8.2 (a)	6dB RF Bandwidth	N/A	Reference original report
15.247(e)	A8.2 (b)	Power Spectral Density	N/A	Reference original report
15.247(c)	A8.5	Out of Band Conducted Spurious Emission	N/A	Reference original report
15.247(d)	A8.5	Band Edge Measurement	PASS	-----
15.247(c)	A8.5	Occupied Bandwidth Measurement	PASS	-----
15.203	-	Antenna Requirement	PASS	-----

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

1.2 Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.24 dB.

Radiated Emission

The measurement uncertainty of 30 MHz - 1GHz is evaluated as ± 3.072 dB.

2 EUT Description

Product	802.11n-BT COMBO CARD
Trade Name	ATHEROS
Model No.	AR5B195
Applicant	Atheros Communications Inc. 1700 Technology Drive, San Jose, CA 95110
Manufacturer	Atheros Communications Inc. 1700 Technology Drive, San Jose, CA 95110
FCC ID	PPD-AR5B195
Frequency Range	2412 ~ 2462 MHz
Modulation Type	IEEE 802.11b:DSSS(CCK, DQPSK, DBPSK) IEEE 802.11g:DSSS(CCK, DQPSK, DBPSK)+ OFDM(QPSK, BPSK, 16-QAM, 64-QAM) draft 802.11n Standard-20MHz channel mode: OFDM(6.5,7.2, 13,14.4, 14.44, 19.5,217,26,28.89,28.9,39.43.3,43.33,52,57.78, 57.8, 58.5, 65.0, 72.2, 78, 86.67,104,115.56,117,130 and 144.44 Mbps) draft 802.11n Wide-40MHz channel mode: OFDM(13.5,15,27,30,40.5, 45,54,60,81,90,108,120, 121.5,135,150,162,180,216,240,243,270 and 300 Mbps)
Antenna Type	PIFA Type
Antenna Gain	1.18 dBi
RF Output Power	IEEE 802.11b: 0.114 W / 20.56 dBm IEEE 802.11g: 0.463 W / 26.66 dBm draft 802.11n Standard-20MHz: 0.423 W / 26.26 dBm draft 802.11n Wide-40MHz: 0.379 W / 25.79 dBm
Host Notebook PC	Trade Name: PEGATRON Model Number: Lucid Manufacturer (1): Pegatron Corporation 5F, No. 76,Ligong St., Beitou District, Taipei City112, Taiwan (R.O.C.) Manufacturer (2): Maintek Computer (Suzhou) Co., Ltd 233 Jin Feng Road, Suzhou City New District, Jiangsu Province, China Manufacturer (3): Protek (Shanghai) Limited No. 3768 Xiu Yan Rd., Nanhui District, Shanghai, China
Component	
Power Adapter	DELTA, ADP-40PH AB Input:100-240Vac, 1.2A, 50-60Hz Output: 19Vdc, 2.1A Cable in: Non-Shielded, 1.45 m Cable out: Non-Shielded, 1.77 m with a core

3 Test Methodology

3.1. Mode of Operation

Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: Normal Operation Mode
Mode 2: IEEE 802.11b Link Mode
Mode 3: IEEE 802.11g Link Mode
Mode 4: draft 802.11n Standard-20MHz Link Mode
Mode 5: draft 802.11n Wide-40MHz Link Mode
Mode 6: Receiver Mode

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

IEEE 802.11b mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 1Mbps data rate were chosen for full testing.

IEEE 802.11g mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6Mbps data rate were chosen for full testing.

draft 802.11n Standard-20 MHz Channel mode:

Channel Low (2412MHz), Channel Mid (2437MHz) and Channel High (2462MHz) with 6.5Mbps data rate were chosen for full testing.

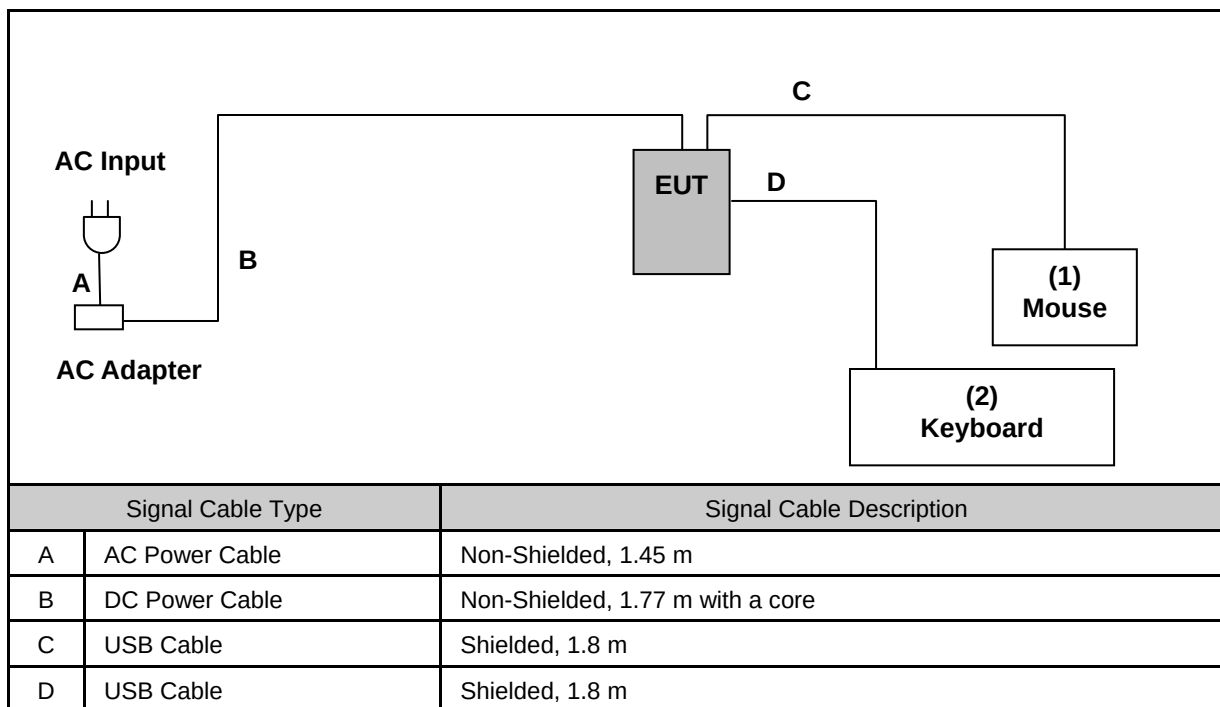
draft 802.11n Wide-40 MHz Channel mode:

Channel Low (2422MHz), Channel Mid (2437MHz) and Channel High (2452MHz) with 13.5Mbps data rate were chosen for full testing.

3.2. EUT Exercise Software

1.	Setup the EUT shown on 3.3.
2.	Turn on the power of all equipment.
3.	Turn on Wi-Fi function link to AP.
4.	EUT run test program.

3.3. Configuration of Test System Details



Devices Description					
Product	Manufacturer	Model Number	Serial Number	Power Cord	
1. Mouse	Logitech	M-UAG96B	PID-LZ815AA	-----	
2. Keyboard	DELL	L100	CNORH659735717C7028D	-----	

3.4. Test Site Environment

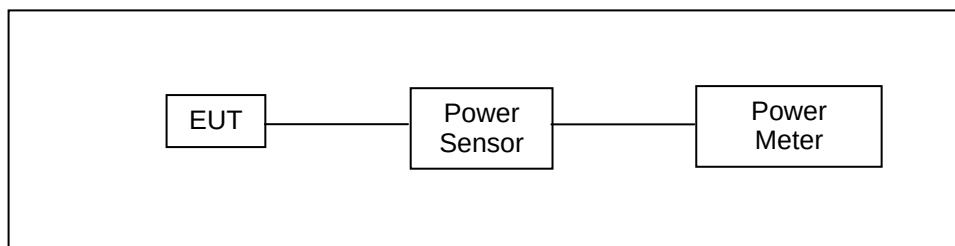
Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	25
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950

4 Maximum Conducted Output Power Measurement

4.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm.

4.2. Test Setup



4.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	07/19/2010	(1)
Wideband Power Meter	Agilent	N1921A	MY45241957	07/19/2010	(1)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

4.4. Test Procedure

The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor. The maximum peak output power shall not exceed 1 watt.

Use a direct connection between the antenna port of transmitter and the power sensor, for prevent the power sensor input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode.

For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to (GAIN - 6)/3 dBm.

The antenna port of the EUT was connected to the input of a power sensor. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

4.5. Test Result

Model Number	AR5B195					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 2: IEEE 802.11b Link Mode					
Date of Test	09/02/2010			Test Site	TE06	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2412	1 M	17.54	0.057	20.44	0.111	< 30
2437		17.70	0.059	20.56	0.114	< 30
2462		17.30	0.054	20.52	0.113	< 30

Model Number	AR5B195					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 3: IEEE 802.11g Link Mode					
Date of Test	09/02/2010			Test Site	TE06	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2412	6 M	14.07	0.026	23.87	0.244	< 30
2437		17.00	0.050	26.66	0.463	< 30
2462		13.62	0.023	23.60	0.229	< 30

Model Number	AR5B195					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode					
Date of Test	09/02/2010			Test Site	TE06	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2412	6.5 M	12.96	0.020	23.29	0.213	< 30
2437		16.90	0.049	26.26	0.423	< 30
2462		12.45	0.018	22.42	0.175	< 30

Model Number	AR5B195					
Test Item	Maximum Conducted Output Power					
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode					
Date of Test	09/02/2010			Test Site	TE06	
Frequency (MHz)	Data Rate	Average Power		Peak Power		Limit (dBm)
		(dBm)	(W)	(dBm)	(W)	
2422	13.5 M	13.13	0.021	23.42	0.220	< 30
2437		15.27	0.034	25.79	0.379	< 30
2452		13.14	0.021	23.73	0.236	< 30

5 Radiated Interference Measurement

5.1. Limit

Frequency Range (MHz)	Peak (dBuV)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

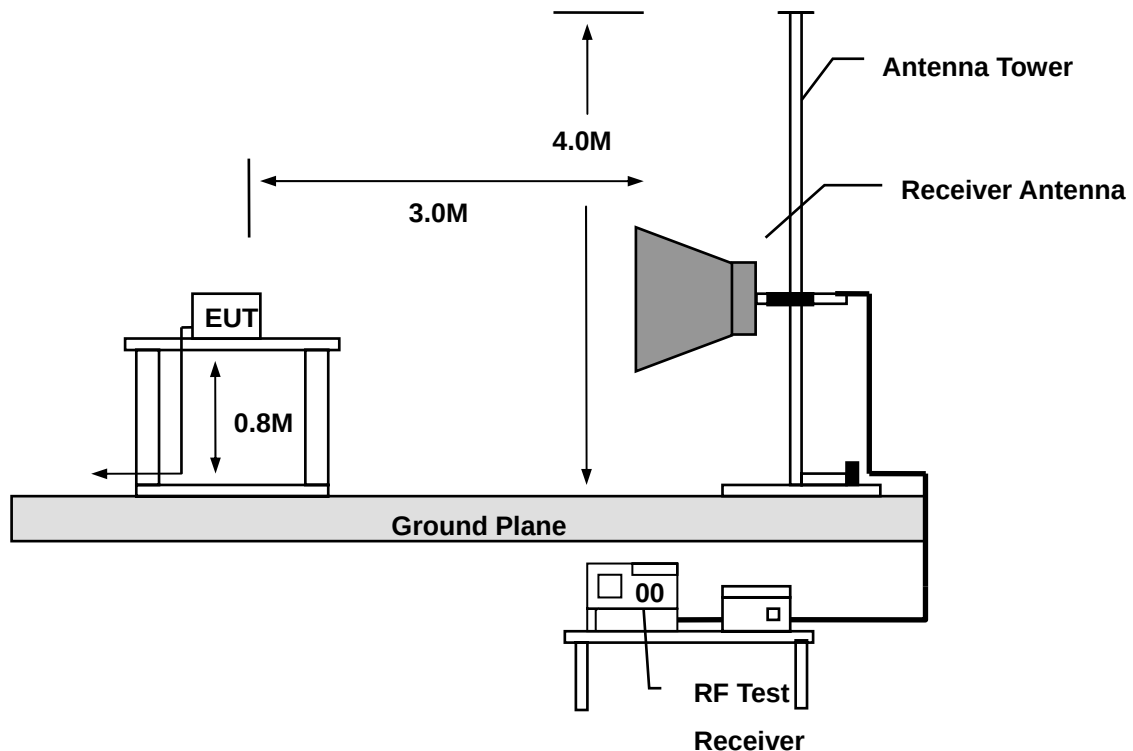
5.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/07/2009	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	02/24/2010	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2010	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2010	(1)
Bi-log Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	08/02/2010	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/29/2010	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/29/2010	(1)
Test Site	ATL	TE01	888001	07/30/2010	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

5.3. Setup



5.4. Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 30 MHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (model VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) + AF (dBuV) + CL (dBuV) - Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV) - Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

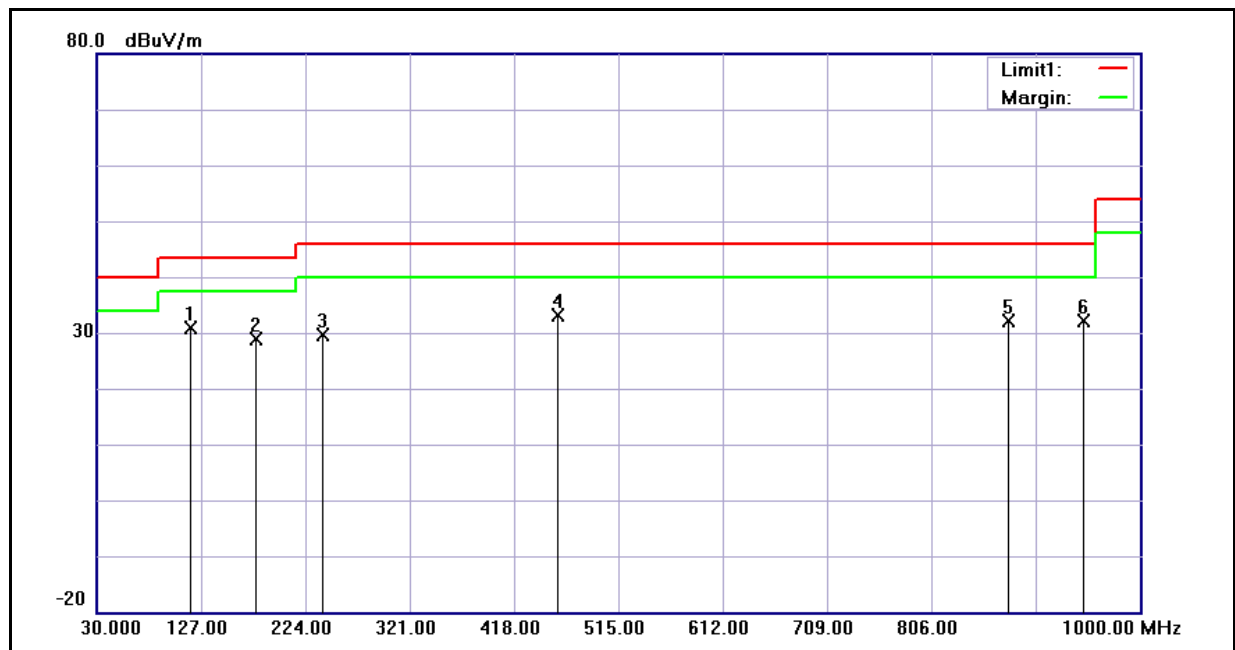
(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

5.5. Test Result

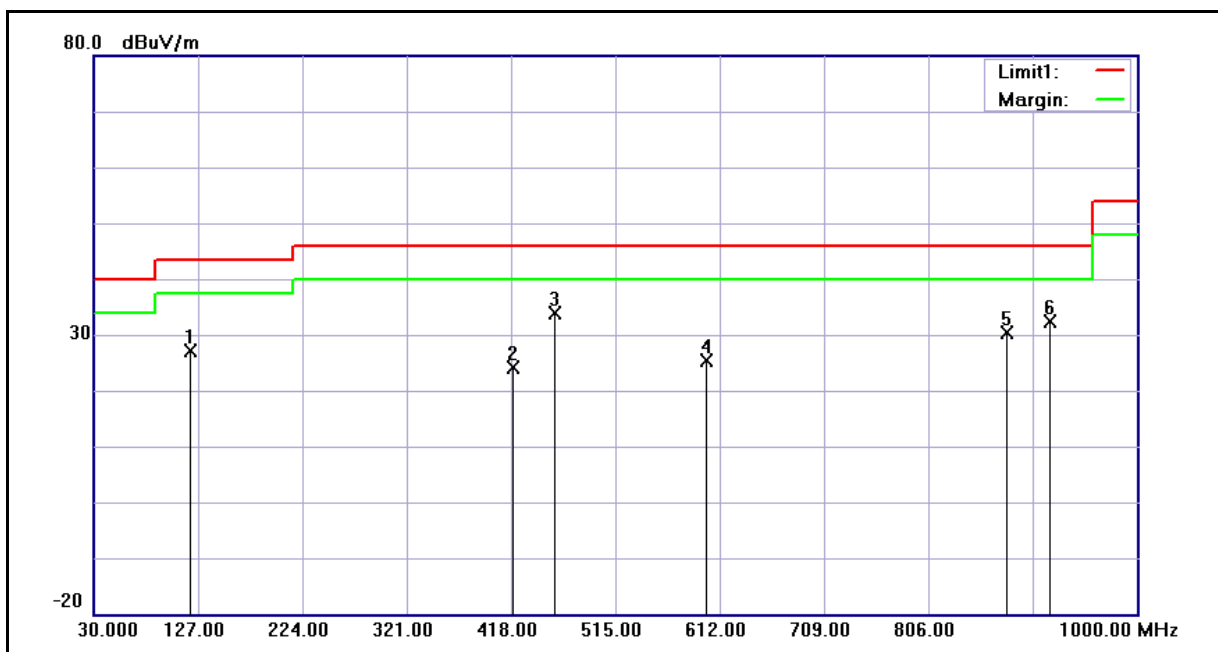
Below 1GHz

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	2010/10/01
Ant.Polar.:	Horizontal	Test By:	Gary Wu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	118.0000	46.38	-15.50	30.88	43.50	-12.62	QP
2	179.0000	44.33	-15.54	28.79	43.50	-14.71	QP
3	240.0000	41.66	-12.15	29.51	46.00	-16.49	QP
4	459.5000	40.87	-7.69	33.18	46.00	-12.82	QP
5	878.0000	32.53	-0.40	32.13	46.00	-13.87	QP
6	948.0000	31.35	0.89	32.24	46.00	-13.76	QP

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 1	Date:	2010/10/01
Ant.Polar.:	Vertical	Test By:	Gary Wu



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	121.0000	43.12	-15.96	27.16	43.50	-16.34	QP
2	420.0000	32.54	-8.31	24.23	46.00	-21.77	QP
3	459.5000	41.62	-7.69	33.93	46.00	-12.07	QP
4	600.0000	30.19	-4.84	25.35	46.00	-20.65	QP
5	879.0000	30.79	-0.37	30.42	46.00	-15.58	QP
6	919.0000	31.76	0.54	32.30	46.00	-13.70	QP

Above 1GHz

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model Number:		AR5B195		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 2		Date:		2010/10/02	
Frequency:		2412MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1378.000	43.51	-4.24	39.27	74.00	-34.73	peak	H
3219.000	43.81	2.79	46.60	74.00	-27.40	peak	H
4822.000	41.36	7.91	49.27	74.00	-24.73	peak	H
1658.000	45.39	-3.00	42.39	74.00	-31.61	peak	V
3219.000	41.14	2.79	43.93	74.00	-30.07	peak	V
4822.000	43.63	7.91	51.54	74.00	-22.46	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model Number:		AR5B195		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 2		Date:		2010/10/02	
Frequency:		2437MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1378.000	43.31	-4.24	39.07	74.00	-34.93	peak	H
3247.000	43.27	2.85	46.12	74.00	-27.88	peak	H
4598.000	38.38	7.18	45.56	74.00	-28.44	peak	H
1658.000	44.84	-3.00	41.84	74.00	-32.16	peak	V
3247.000	41.70	2.85	44.55	74.00	-29.45	peak	V
4990.000	39.37	8.47	47.84	74.00	-26.16	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model Number:		AR5B195		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 2		Date:		2010/10/02	
Frequency:		2462MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1658.000	42.92	-3.00	39.92	74.00	-34.08	peak	H
3282.000	42.38	2.92	45.30	74.00	-28.70	peak	H
4927.000	41.20	8.26	49.46	74.00	-24.54	peak	H
1147.000	47.75	-5.54	42.21	74.00	-31.79	peak	V
1994.000	44.75	-1.81	42.94	74.00	-31.06	peak	V
3324.000	40.66	3.02	43.68	74.00	-30.32	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AR5B195			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	2010/10/02		
Frequency:	2412MHz			Test By:	Gary Wu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1329.000	44.92	-4.51	40.41	74.00	-33.59	peak	H
3219.000	43.87	2.79	46.66	74.00	-27.34	peak	H
5760.000	37.16	10.39	47.55	74.00	-26.45	peak	H
1147.000	48.53	-5.54	42.99	74.00	-31.01	peak	V
1994.000	44.00	-1.81	42.19	74.00	-31.81	peak	V
4822.000	38.87	7.91	46.78	74.00	-27.22	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AR5B195			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 3			Date:	2010/10/02		
Frequency:	2437MHz			Test By:	Gary Wu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1665.000	45.08	-2.98	42.10	74.00	-31.90	peak	H
3247.000	43.34	2.85	46.19	74.00	-27.81	peak	H
4976.000	38.55	8.42	46.97	74.00	-27.03	peak	H
1147.000	48.92	-5.54	43.38	74.00	-30.62	peak	V
3247.000	42.09	2.85	44.94	74.00	-29.06	peak	V
4983.000	39.74	8.45	48.19	74.00	-25.81	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model Number:		AR5B195		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 3		Date:		2010/10/02	
Frequency:		2462MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1378.000	42.57	-4.24	38.33	74.00	-35.67	peak	H
3282.000	43.19	2.92	46.11	74.00	-27.89	peak	H
4927.000	38.96	8.26	47.22	74.00	-26.78	peak	H
1147.000	48.81	-5.54	43.27	74.00	-30.73	peak	V
1658.000	44.58	-3.00	41.58	74.00	-32.42	peak	V
3282.000	40.67	2.92	43.59	74.00	-30.41	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AR5B195			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	2010/10/02		
Frequency:	2412MHz			Test By:	Gary Wu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1378.000	43.83	-4.24	39.59	74.00	-34.41	peak	H
3219.000	41.93	2.79	44.72	74.00	-29.28	peak	H
5018.000	38.10	8.55	46.65	74.00	-27.35	peak	H
1147.000	49.25	-5.54	43.71	74.00	-30.29	peak	V
1994.000	44.07	-1.81	42.26	74.00	-31.74	peak	V
3219.000	40.75	2.79	43.54	74.00	-30.46	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AR5B195			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 4			Date:	2010/10/02		
Frequency:	2437MHz			Test By:	Gary Wu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1378.000	42.80	-4.24	38.56	74.00	-35.44	peak	H
3247.000	42.48	2.85	45.33	74.00	-28.67	peak	H
5767.000	37.05	10.40	47.45	74.00	-26.55	peak	H
1147.000	48.92	-5.54	43.38	74.00	-30.62	peak	V
1658.000	47.00	-3.00	44.00	74.00	-30.00	peak	V
3247.000	41.08	2.85	43.93	74.00	-30.07	peak	V

Standard:		FCC Part 15C		Test Distance:		3m	
Test item:		Radiated Emission		Power:		AC 120V/60Hz	
Model Number:		AR5B195		Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 4		Date:		2010/10/02	
Frequency:		2462MHz		Test By:		Gary Wu	
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1147.000	48.42	-5.54	42.88	74.00	-31.12	peak	H
1658.000	45.58	-3.00	42.58	74.00	-31.42	peak	H
3282.000	42.35	2.92	45.27	74.00	-28.73	peak	H
1658.000	44.31	-3.00	41.31	74.00	-32.69	peak	V
3282.000	44.71	2.92	47.63	74.00	-26.37	peak	V
4927.000	40.30	8.26	48.56	74.00	-25.44	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AR5B195			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	2010/10/02		
Frequency:	2422MHz			Test By:	Gary Wu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1665.000	42.86	-2.98	39.88	74.00	-34.12	peak	H
3219.000	43.05	2.79	45.84	74.00	-28.16	peak	H
4801.000	37.78	7.84	45.62	74.00	-28.38	peak	H
1147.000	49.06	-5.54	43.52	74.00	-30.48	peak	V
1665.000	45.87	-2.98	42.89	74.00	-31.11	peak	V
3219.000	41.83	2.79	44.62	74.00	-29.38	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AR5B195			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	2010/10/02		
Frequency:	2437MHz			Test By:	Gary Wu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1147.000	48.85	-5.54	43.31	74.00	-30.69	peak	H
1665.000	45.28	-2.98	42.30	74.00	-31.70	peak	H
3268.000	42.58	2.90	45.48	74.00	-28.52	peak	H
1329.000	43.77	-4.51	39.26	74.00	-34.74	peak	V
3247.000	43.52	2.85	46.37	74.00	-27.63	peak	V
5522.000	37.50	10.02	47.52	74.00	-26.48	peak	V

Standard:	FCC Part 15C			Test Distance:	3m		
Test item:	Radiated Emission			Power:	AC 120V/60Hz		
Model Number:	AR5B195			Temp.(°C)/Hum.(%RH):	26(°C)/60%RH		
Mode:	Mode 5			Date:	2010/10/02		
Frequency:	2452MHz			Test By:	Gary Wu		
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1490.000	41.61	-3.61	38.00	74.00	-36.00	peak	H
3268.000	45.12	2.90	48.02	74.00	-25.98	peak	H
5620.000	37.67	10.17	47.84	74.00	-26.16	peak	H
1147.000	48.85	-5.54	43.31	74.00	-30.69	peak	V
1665.000	45.28	-2.98	42.30	74.00	-31.70	peak	V
3268.000	42.58	2.90	45.48	74.00	-28.52	peak	V

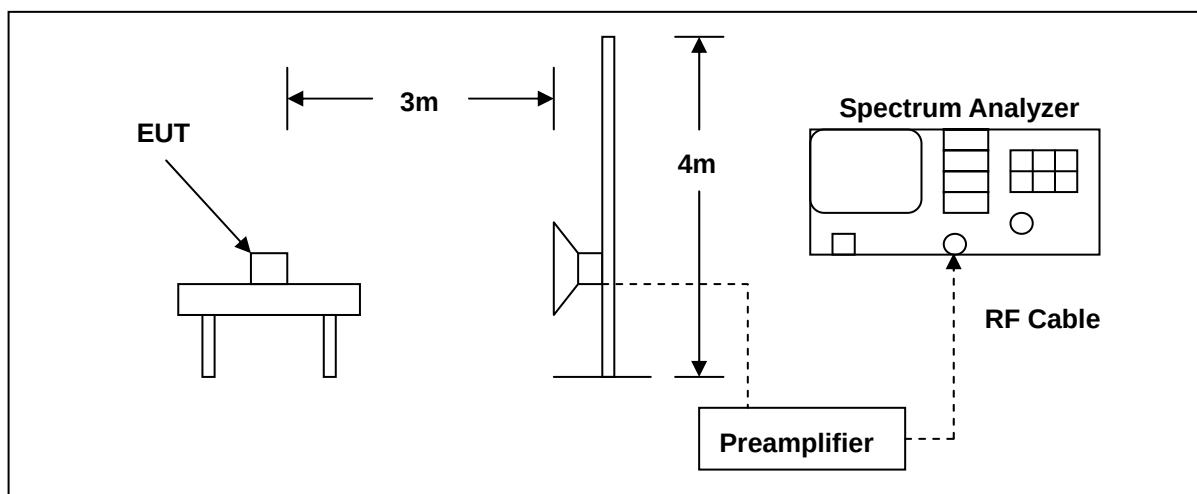
Standard:		FCC Part 15B			Test Distance:		3m	
Test item:		Radiated Emission			Power:		AC 120V/60Hz	
Model Number:		AR5B195			Temp.(°C)/Hum.(%RH):		26(°C)/60%RH	
Mode:		Mode 6			Date:		2010/10/02	
Modulation:		IEEE 802.11g			Test By:		Gary Wu	
Frequency:		2437MHz						
Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Peak Limit (dBuV/m)	AVG. Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
1896.000	40.40	-2.15	38.25	74.00	54.00	-35.75	peak	H
3331.000	40.48	3.03	43.51	74.00	54.00	-30.49	peak	H
6467.000	36.73	12.75	49.48	74.00	54.00	-24.52	peak	H
1147.000	48.05	-5.54	42.51	74.00	54.00	-31.49	peak	V
1658.000	44.67	-3.00	41.67	74.00	54.00	-32.33	peak	V
3324.000	41.00	3.02	44.02	74.00	54.00	-29.98	peak	V

6 Band Edges Measurement

6.1. Limit

In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.

6.2. Test Setup



6.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY45107753	06/24/2010	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2010	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	9120D	9120D-550	06/29/2010	(1)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: ⁽¹⁾ Calibration period 1 year. ⁽²⁾ Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

6.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The emissions on the harmonics frequencies, the limits, and the margin of compliance are presented. These tests were made when the transmitter was in full radiated power. The additional test was performed to show compliance with the requirement at the band-edge frequency 2483.5 MHz and up to 2500 MHz and at 2390.0 MHz.

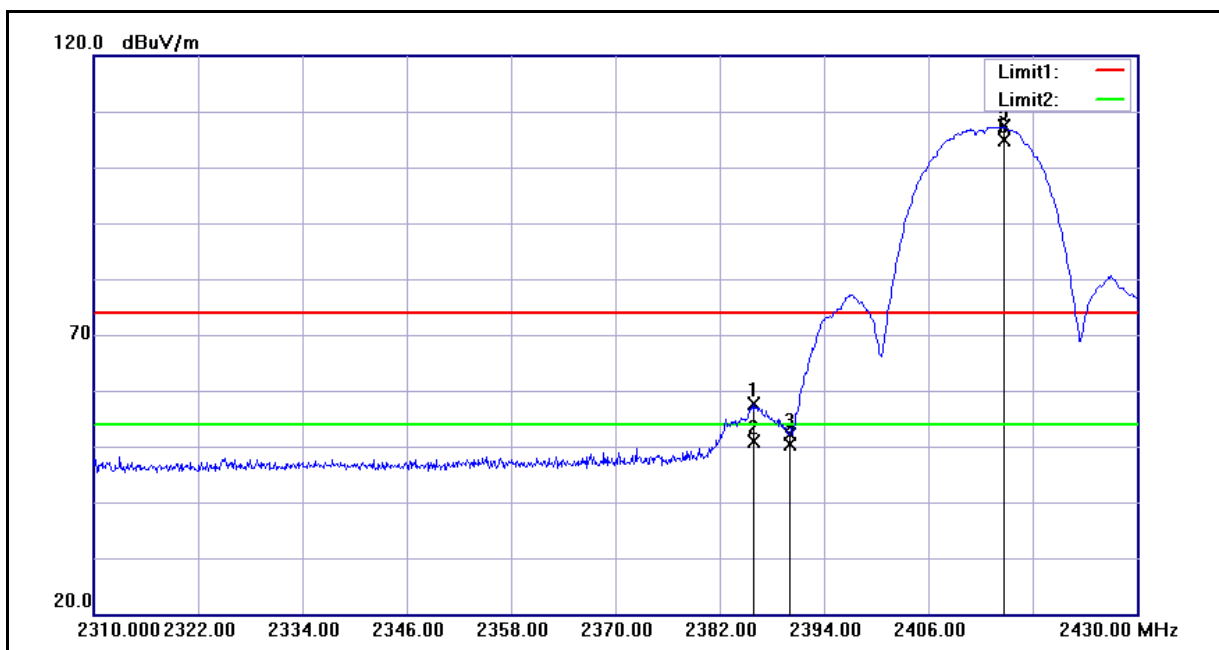
The transmitter was configured with the worst case antenna and setup to transmit at the highest channel. Then the field strength was measured at 2483.5 MHz.

The transmitter was then configured with the worst case antenna and setup to transmit at the lowest channel. Then the field strength was measured at 2390.0 MHz. These tests were performed at 4 different bit rates.

For measurements the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

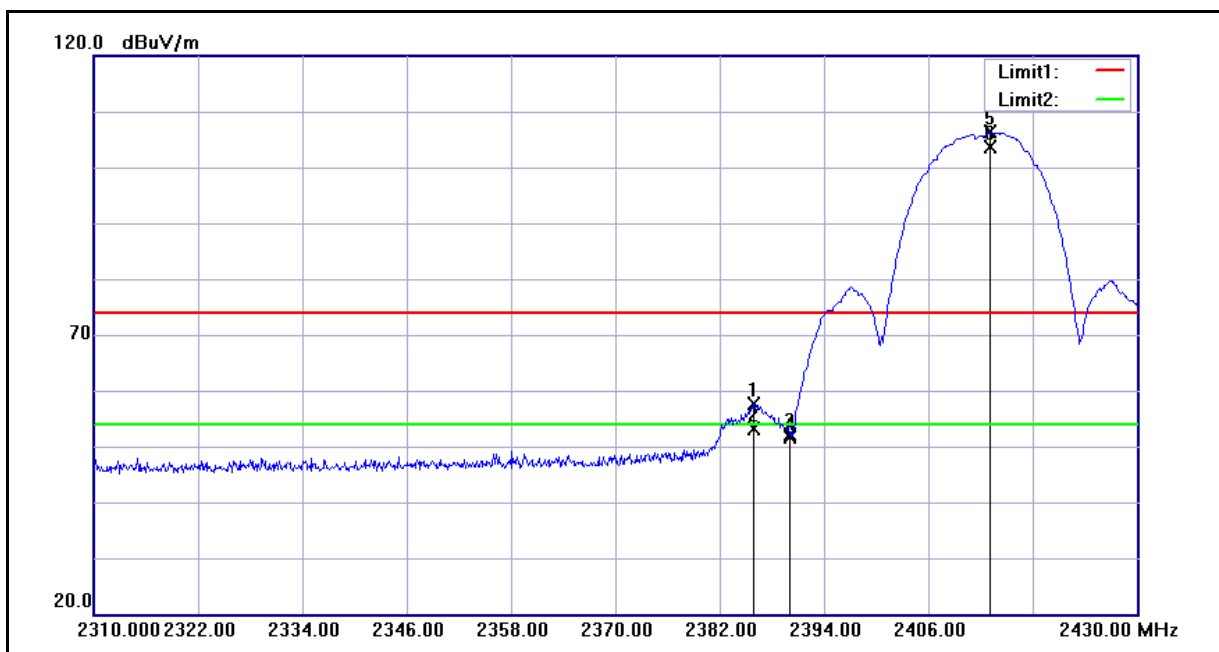
6.5. Test Result

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/09/14
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



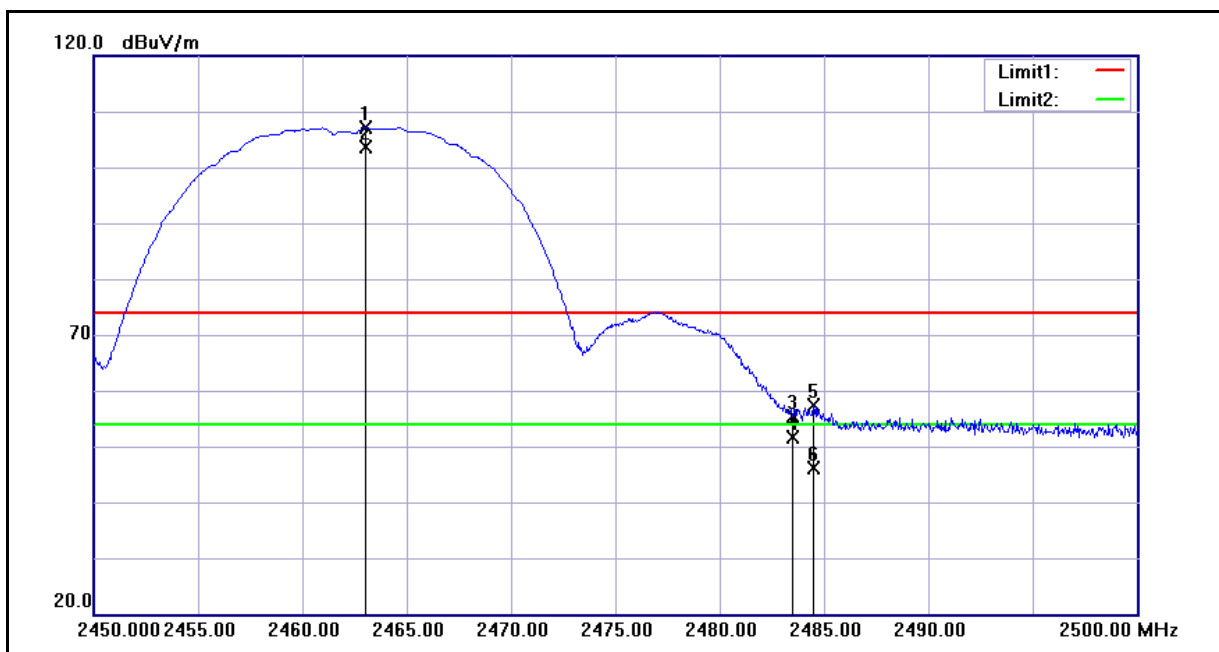
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.960	57.88	-0.24	57.64	74.00	-16.36	peak
2	2385.960	51.24	-0.24	51.00	54.00	-3.00	AVG
3	2390.000	52.32	-0.22	52.10	74.00	-21.90	peak
4	2390.000	50.64	-0.22	50.42	54.00	-3.58	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/09/14
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



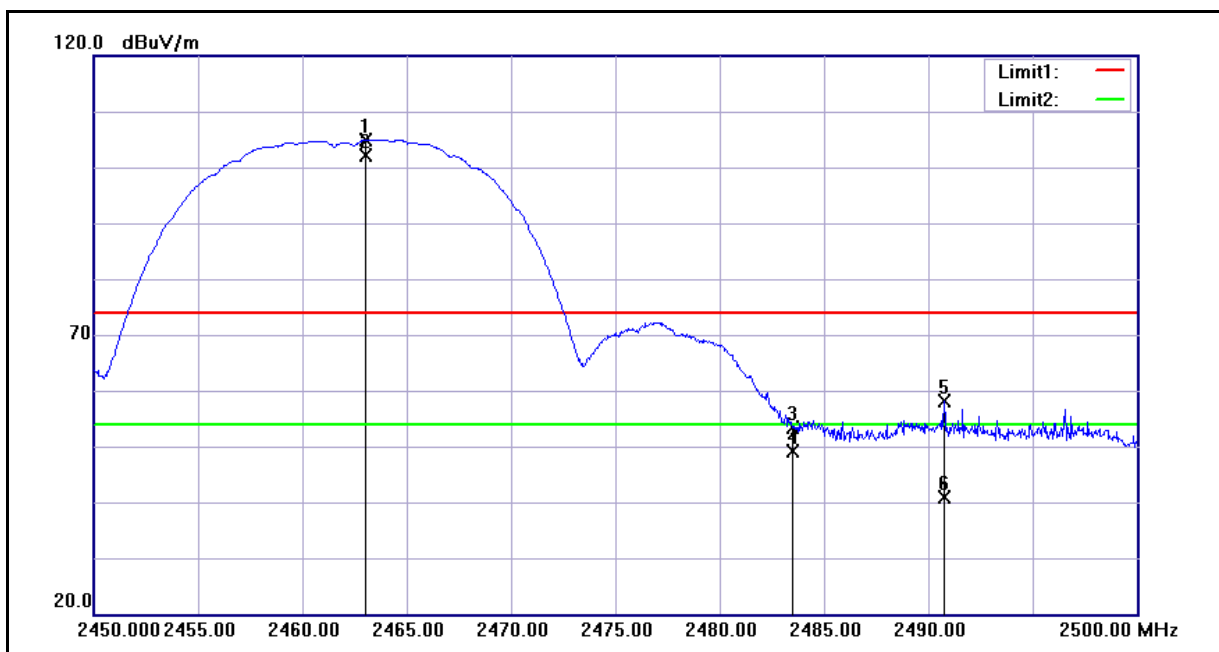
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.960	57.99	-0.24	57.75	74.00	-16.25	peak
2	2385.960	53.39	-0.24	53.15	54.00	-0.85	AVG
3	2390.000	52.34	-0.22	52.12	74.00	-21.88	peak
4	2390.000	51.96	-0.22	51.74	54.00	-2.26	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/09/14
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



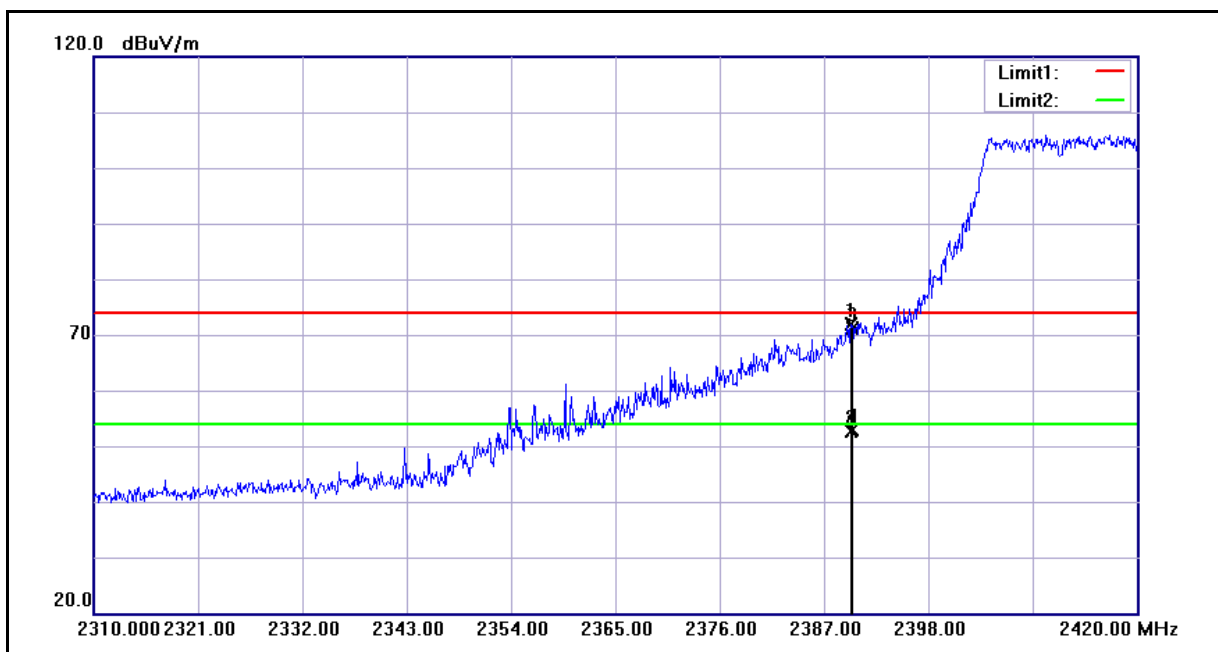
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	55.15	0.16	55.31	74.00	-18.69	peak
2	2483.500	51.50	0.16	51.66	54.00	-2.34	AVG
3	2484.500	57.24	0.16	57.40	74.00	-16.60	peak
4	2484.500	46.05	0.16	46.21	54.00	-7.79	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 2	Date:	2010/09/14
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



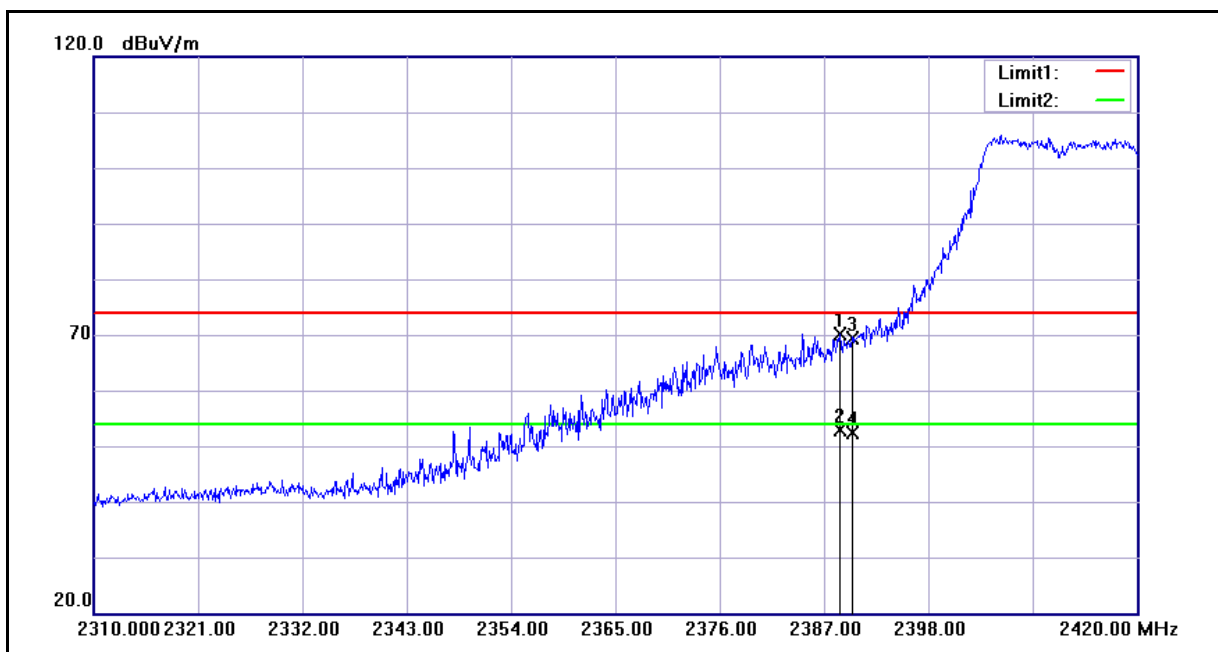
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	53.30	0.16	53.46	74.00	-20.54	peak
2	2483.500	48.93	0.16	49.09	54.00	-4.91	AVG
3	2490.750	58.04	0.19	58.23	74.00	-15.77	peak
4	2490.750	40.70	0.19	40.89	54.00	-13.11	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/09/14
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



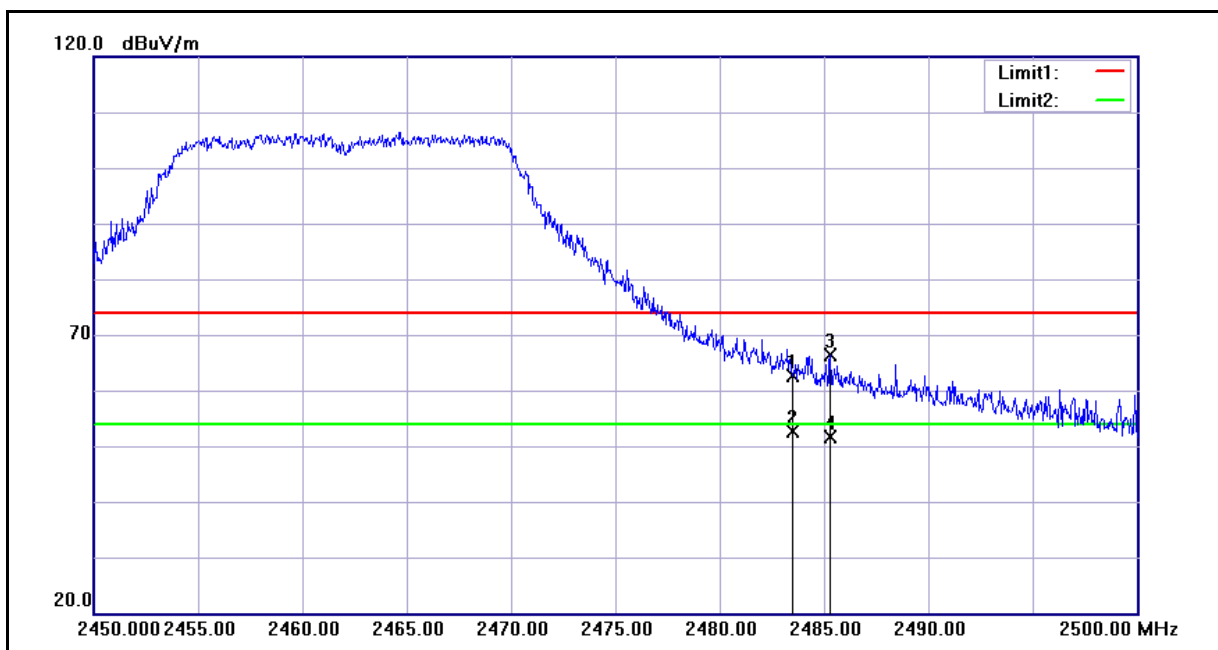
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.860	71.99	-0.22	71.77	74.00	-2.23	peak
2	2389.860	52.94	-0.22	52.72	54.00	-1.28	AVG
3	2390.000	71.36	-0.22	71.14	74.00	-2.86	peak
4	2390.000	53.06	-0.22	52.84	54.00	-1.16	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/09/14
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



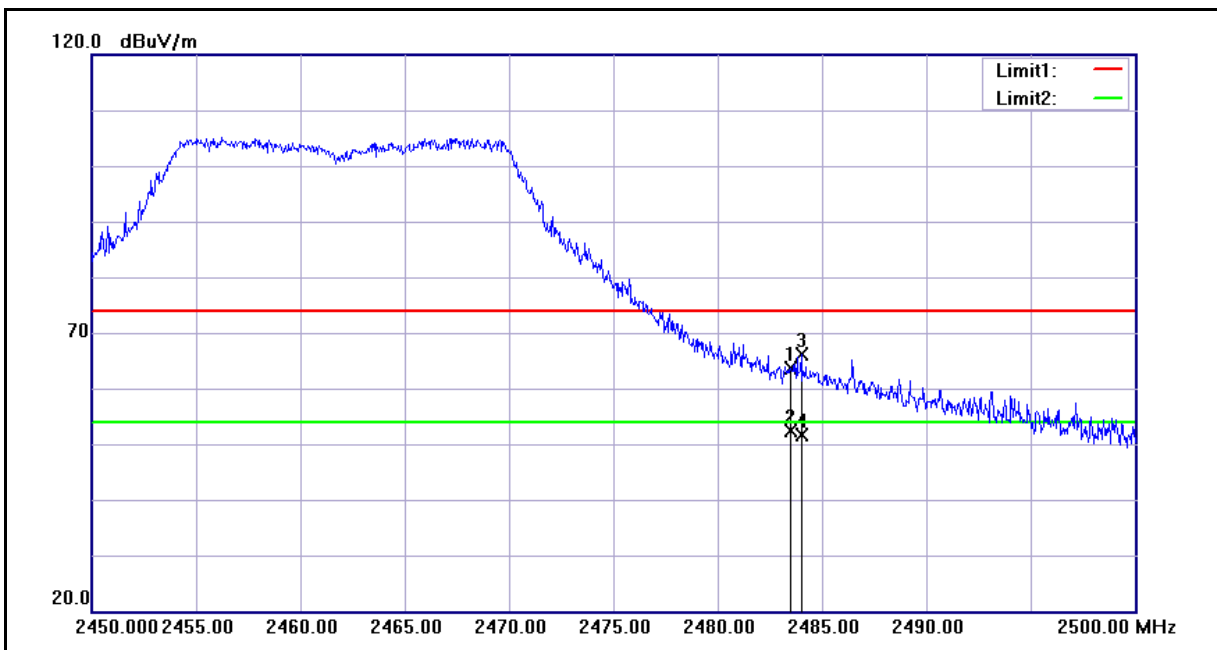
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.650	70.40	-0.22	70.18	74.00	-3.82	peak
2	2388.650	53.01	-0.22	52.79	54.00	-1.21	AVG
3	2390.000	69.64	-0.22	69.42	74.00	-4.58	peak
4	2390.000	52.53	-0.22	52.31	54.00	-1.69	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/09/14
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



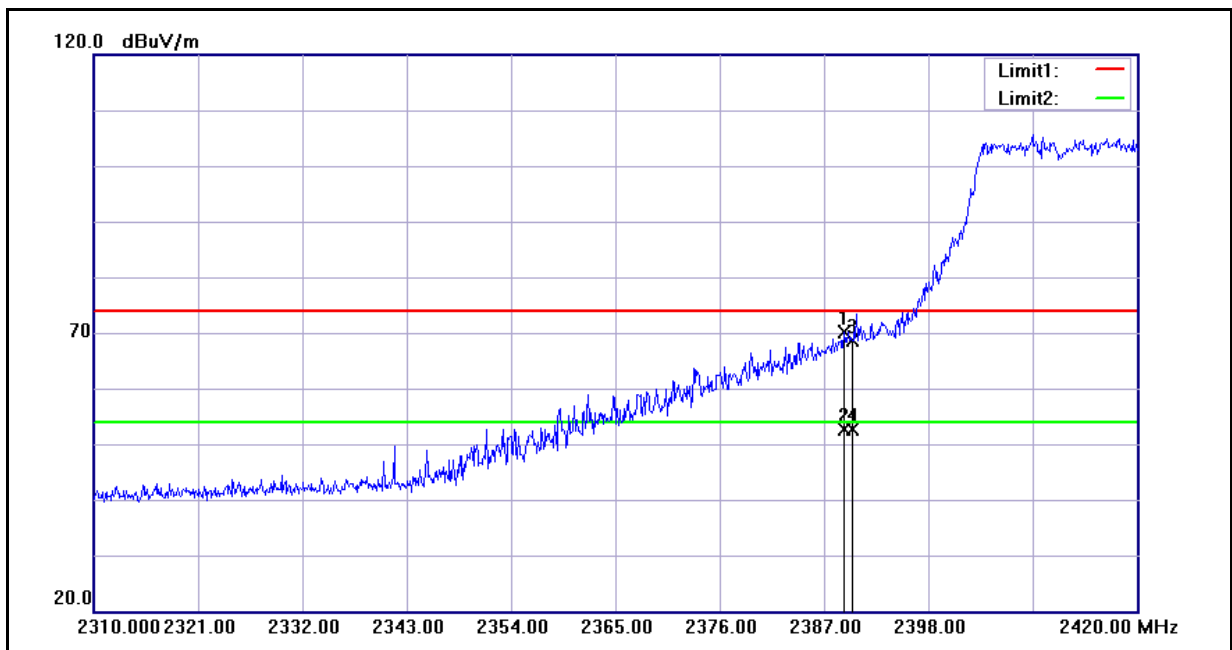
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	62.48	0.16	62.64	74.00	-11.36	peak
2	2483.500	52.57	0.16	52.73	54.00	-1.27	AVG
3	2485.300	66.26	0.16	66.42	74.00	-7.58	peak
4	2485.300	51.35	0.16	51.51	54.00	-2.49	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 3	Date:	2010/09/14
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



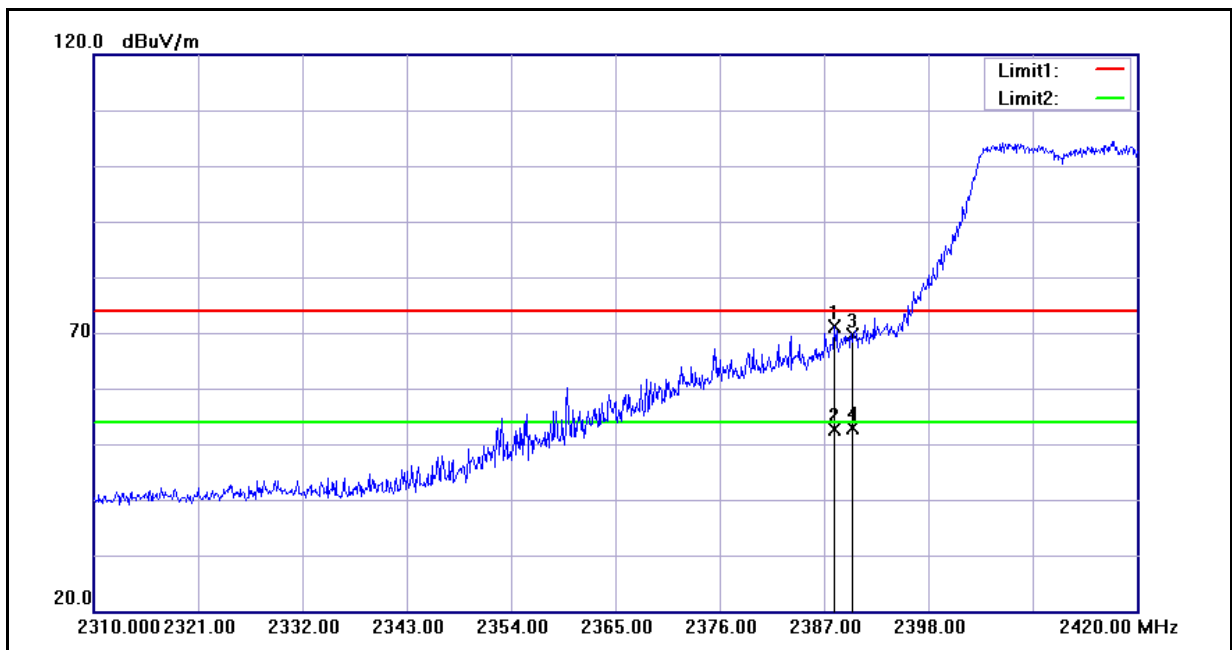
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	63.58	0.16	63.74	74.00	-10.26	peak
2	2483.500	52.20	0.16	52.36	54.00	-1.64	AVG
3	2484.000	65.95	0.16	66.11	74.00	-7.89	peak
4	2484.000	51.51	0.16	51.67	54.00	-2.33	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/09/14
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



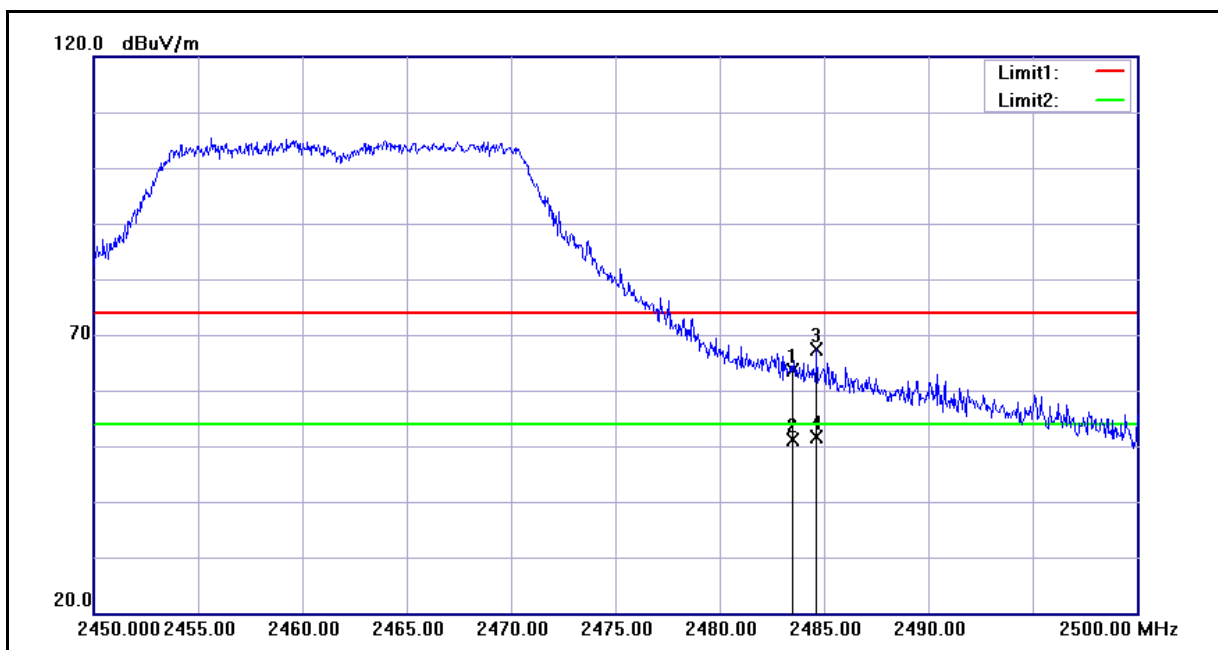
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2389.090	70.43	-0.22	70.21	74.00	-3.79	peak
2	2389.090	52.88	-0.22	52.66	54.00	-1.34	AVG
3	2390.000	68.81	-0.22	68.59	74.00	-5.41	peak
4	2390.000	52.81	-0.22	52.59	54.00	-1.41	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/09/14
Frequency:	2412 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



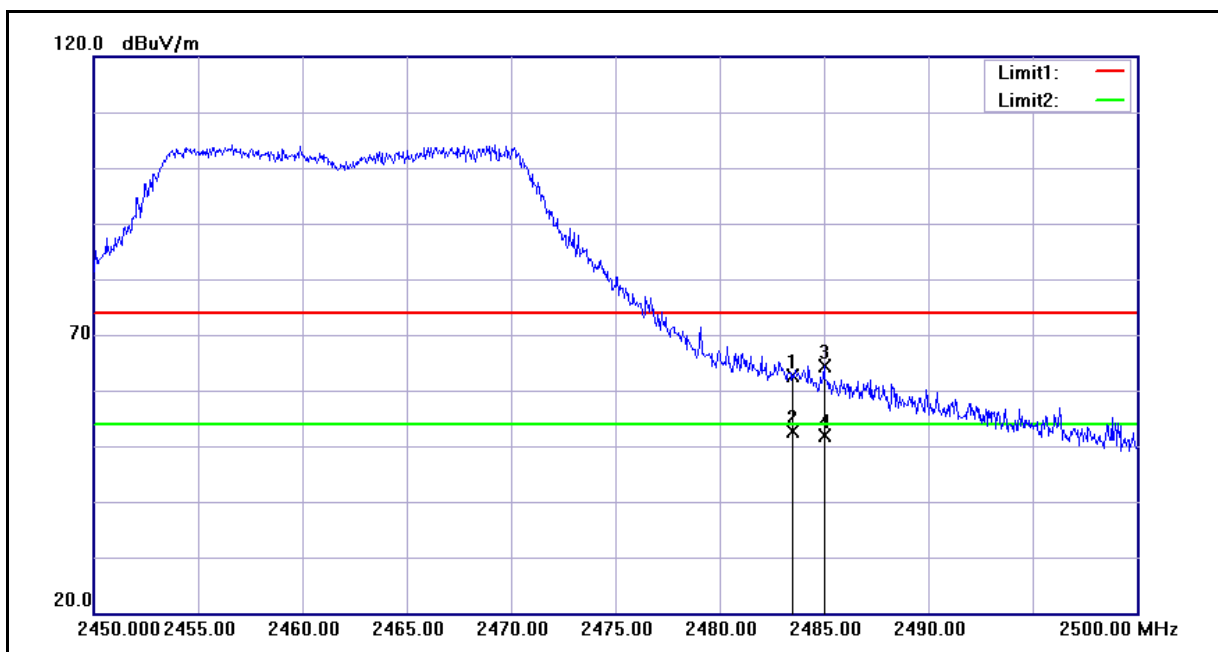
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2388.100	71.29	-0.22	71.07	74.00	-2.93	peak
2	2388.100	52.87	-0.22	52.65	54.00	-1.35	AVG
3	2390.000	69.86	-0.22	69.64	74.00	-4.36	peak
4	2390.000	52.98	-0.22	52.76	54.00	-1.24	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/09/14
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



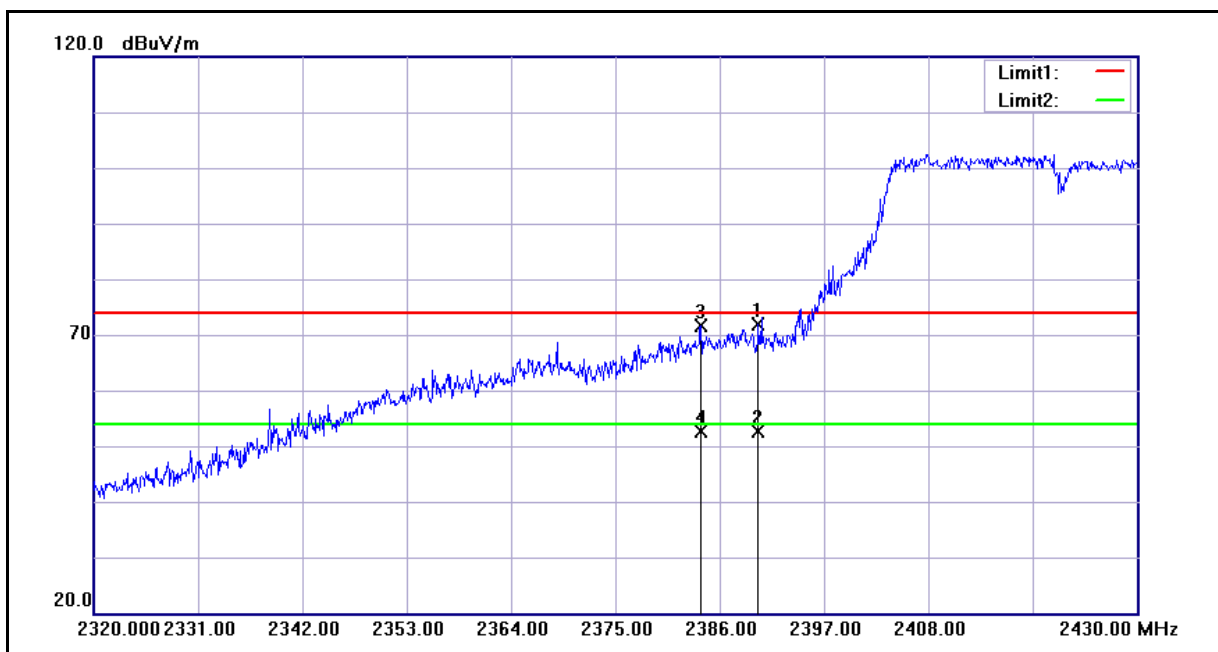
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	63.47	0.16	63.63	74.00	-10.37	peak
2	2483.500	50.88	0.16	51.04	54.00	-2.96	AVG
3	2484.650	67.11	0.16	67.27	74.00	-6.73	peak
4	2484.650	51.40	0.16	51.56	54.00	-2.44	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 4	Date:	2010/09/14
Frequency:	2462 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



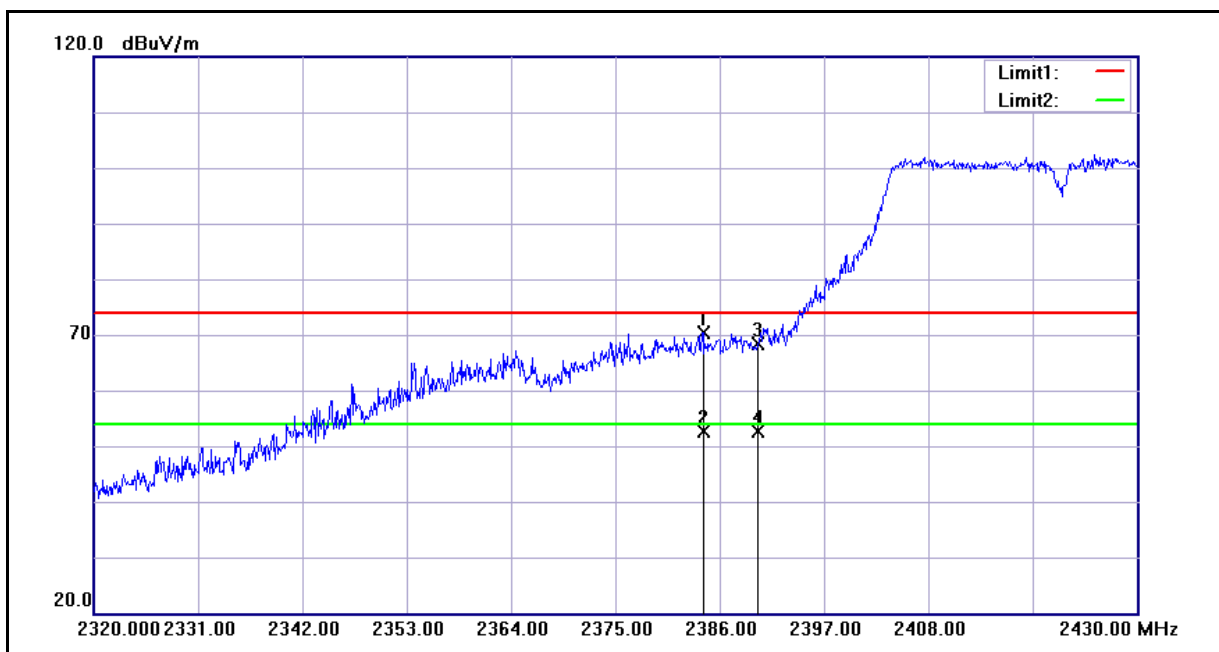
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	62.40	0.16	62.56	74.00	-11.44	peak
2	2483.500	52.35	0.16	52.51	54.00	-1.49	AVG
3	2485.000	64.29	0.16	64.45	74.00	-9.55	peak
4	2485.000	51.60	0.16	51.76	54.00	-2.24	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	2010/09/14
Frequency:	2422 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



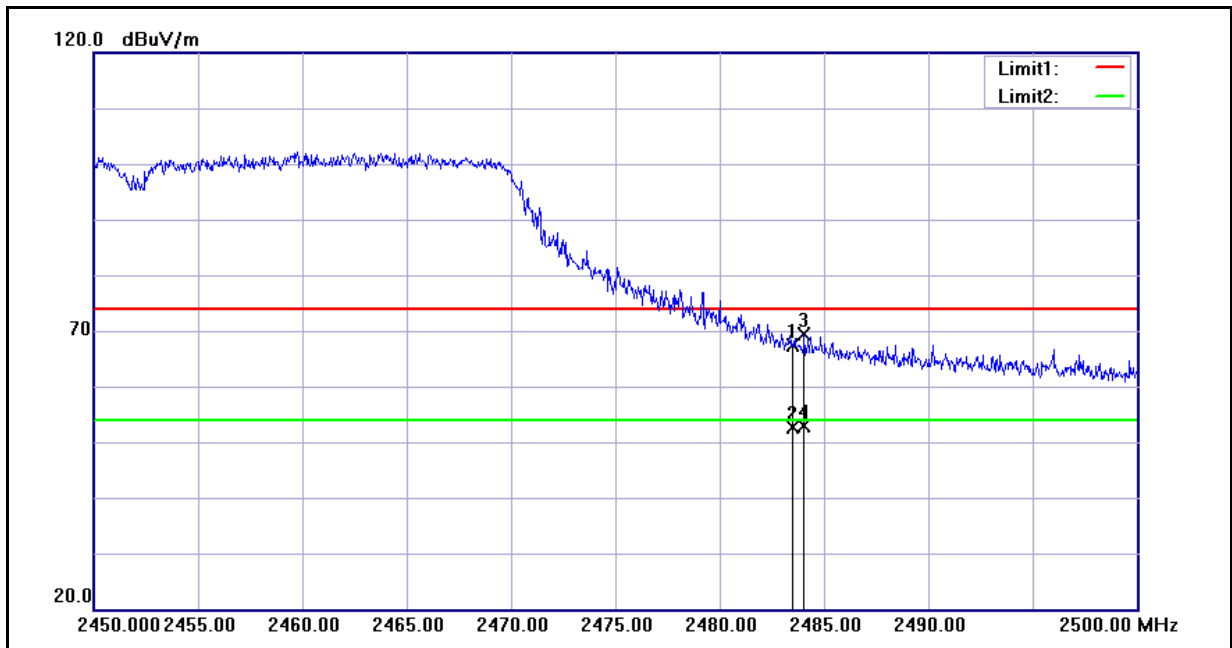
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	72.22	-0.22	72.00	74.00	-2.00	peak
2	2390.000	52.76	-0.22	52.54	54.00	-1.46	AVG
3	2384.020	71.82	-0.24	71.58	74.00	-2.42	peak
4	2384.020	52.99	-0.24	52.75	54.00	-1.25	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	2010/09/14
Frequency:	2422 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



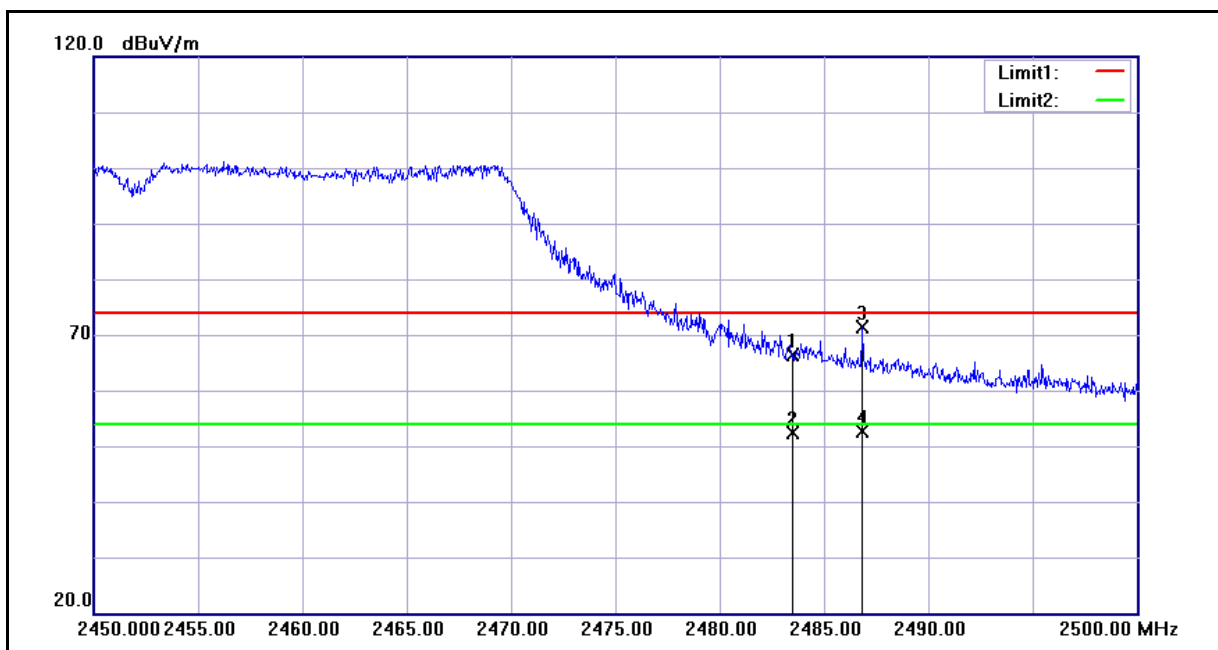
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.240	70.72	-0.24	70.48	74.00	-3.52	peak
2	2384.240	52.77	-0.24	52.53	54.00	-1.47	AVG
3	2390.000	68.68	-0.22	68.46	74.00	-5.54	peak
4	2390.000	52.83	-0.22	52.61	54.00	-1.39	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	2010/09/14
Frequency:	2452 MHz	Test By:	Gary Wu
Ant.Polar.:	Horizontal		



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	67.10	0.16	67.26	74.00	-6.74	peak
2	2483.500	52.44	0.16	52.60	54.00	-1.40	AVG
3	2484.050	69.18	0.16	69.34	74.00	-4.66	peak
4	2484.050	52.67	0.16	52.83	54.00	-1.17	AVG

Standard:	FCC Part 15C	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	AR5B195	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	Mode 5	Date:	2010/09/14
Frequency:	2452 MHz	Test By:	Gary Wu
Ant.Polar.:	Vertical		



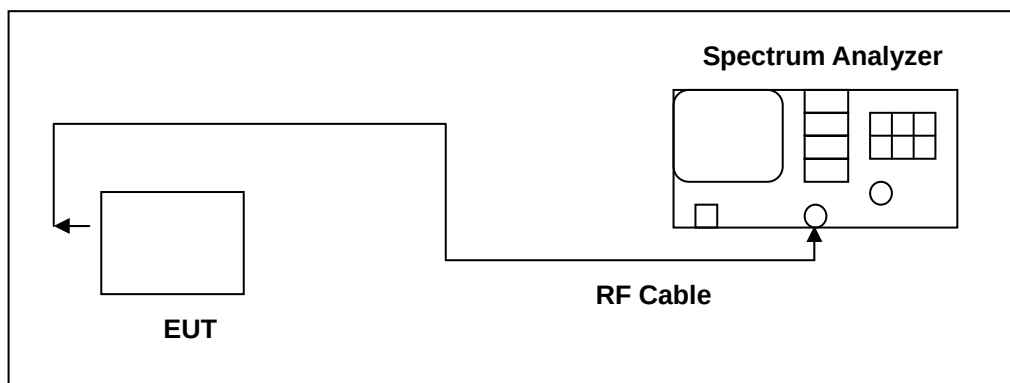
No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	66.20	0.16	66.36	74.00	-7.64	peak
2	2483.500	52.19	0.16	52.35	54.00	-1.65	AVG
3	2486.850	71.24	0.18	71.42	74.00	-2.58	peak
4	2486.850	52.56	0.18	52.74	54.00	-1.26	AVG

7 99 % Occupied Bandwidth Measurement

7.1. Limit

N/A

7.2. Test Setup



7.3. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	(2)
Test Site	ATL	TE06	TE06	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

7.4. Test Procedure

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled.

7.5. Test Result

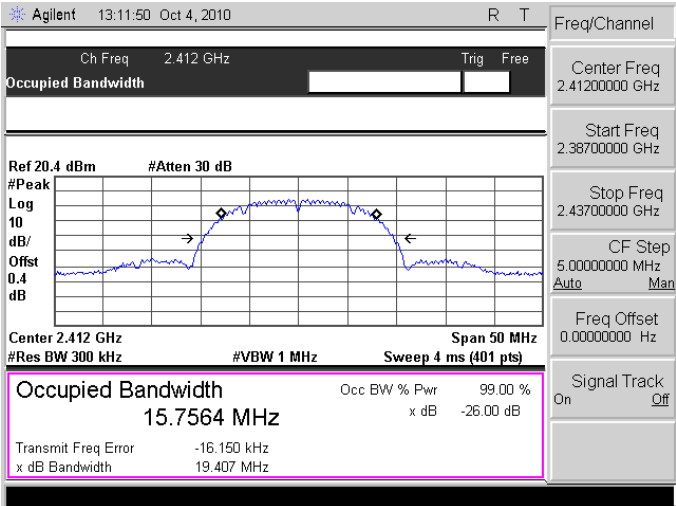
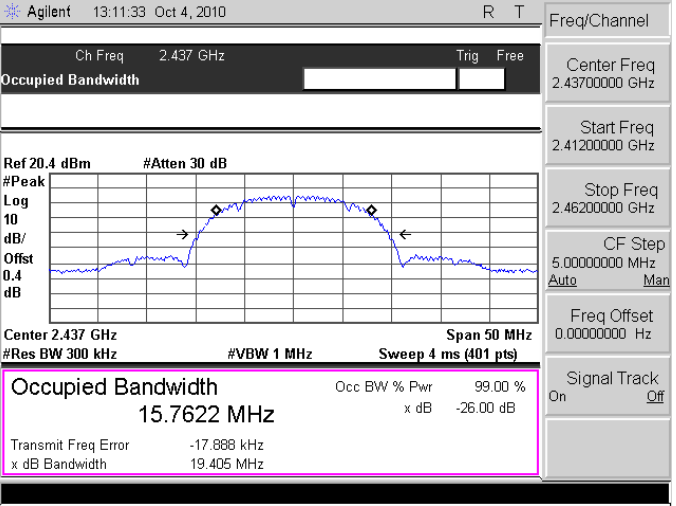
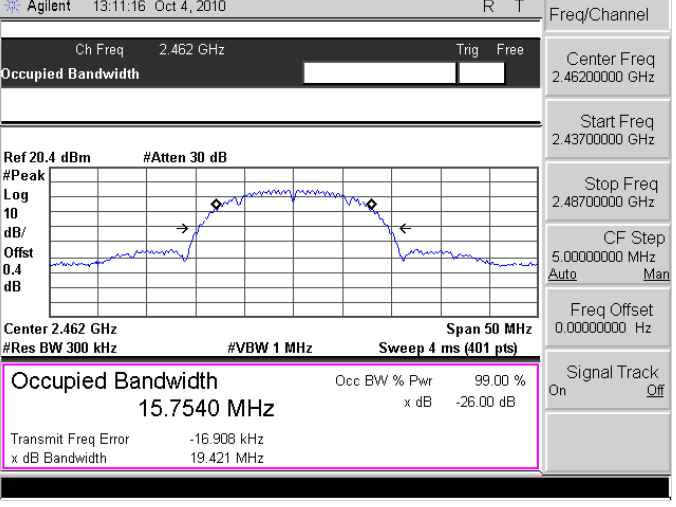
Model Number	AR5B195		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 2: IEEE 802.11b Link Mode		
Date of Test	10/04/2010	Test Site	TE06
Frequency (MHz)	Measurement (KHz)	Limit (kHz)	
2412	15756.4	-----	
2437	15762.2	-----	
2462	15754.0	-----	

Model Number	AR5B195		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 3: IEEE 802.11g Link Mode		
Date of Test	10/04/2010	Test Site	TE06
Frequency (MHz)	Measurement (KHz)	Limit (kHz)	
2412	17350.9	-----	
2437	17263.1	-----	
2462	17361.5	-----	

Model Number	AR5B195		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 4: draft 802.11n Standard-20MHz Link Mode		
Date of Test	10/04/2010	Test Site	TE06
Frequency (MHz)	Measurement (KHz)	Limit (kHz)	
2412	18479.7	-----	
2437	18358.9	-----	
2462	18342.7	-----	

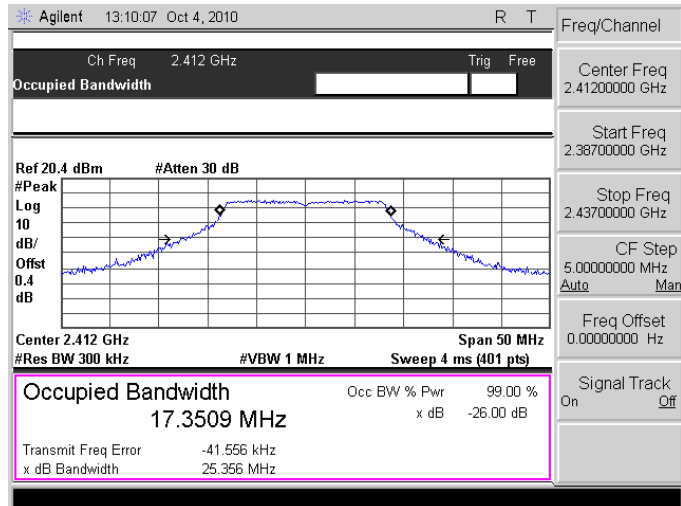
Model Number	AR5B195		
Test Item	99 % Occupied Bandwidth		
Test Mode	Mode 5: draft 802.11n Wide-40MHz Link Mode		
Date of Test	10/04/2010	Test Site	TE06
Frequency (MHz)	Measurement (KHz)	Limit (kHz)	
2422	36467.1	-----	
2437	36471.7	-----	
2452	36494.9	-----	

7.6. Test Graphs

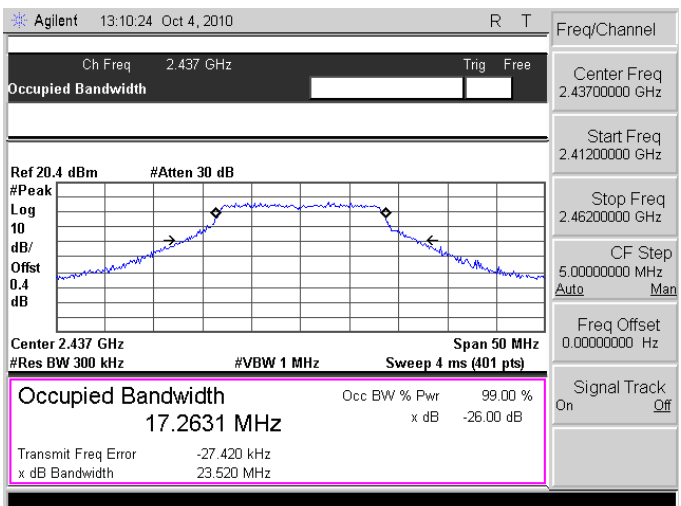
Mode 2: IEEE 802.11b Link Mode	
2412	 Agilent 13:11:50 Oct 4, 2010 R T Ch Freq 2.412 GHz Trig Free Occupied Bandwidth Ref 20.4 dBm #Atten 30 dB #Peak Log 10 dB/Offset 0.4 dB Center 2.412 GHz Span 50 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts) Occupied Bandwidth 15.7564 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -16.150 kHz x dB Bandwidth 19.407 MHz Freq/Channel Center Freq 2.41200000 GHz Start Freq 2.38700000 GHz Stop Freq 2.43700000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
2437	 Agilent 13:11:33 Oct 4, 2010 R T Ch Freq 2.437 GHz Trig Free Occupied Bandwidth Ref 20.4 dBm #Atten 30 dB #Peak Log 10 dB/Offset 0.4 dB Center 2.437 GHz Span 50 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts) Occupied Bandwidth 15.7622 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -17.888 kHz x dB Bandwidth 19.405 MHz Freq/Channel Center Freq 2.43700000 GHz Start Freq 2.41200000 GHz Stop Freq 2.46200000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off
2462	 Agilent 13:11:16 Oct 4, 2010 R T Ch Freq 2.462 GHz Trig Free Occupied Bandwidth Ref 20.4 dBm #Atten 30 dB #Peak Log 10 dB/Offset 0.4 dB Center 2.462 GHz Span 50 MHz #Res BW 300 kHz #VBW 1 MHz Sweep 4 ms (401 pts) Occupied Bandwidth 15.7540 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -16.908 kHz x dB Bandwidth 19.421 MHz Freq/Channel Center Freq 2.46200000 GHz Start Freq 2.43700000 GHz Stop Freq 2.48700000 GHz CF Step 5.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off

Mode 3: IEEE 802.11g Link Mode

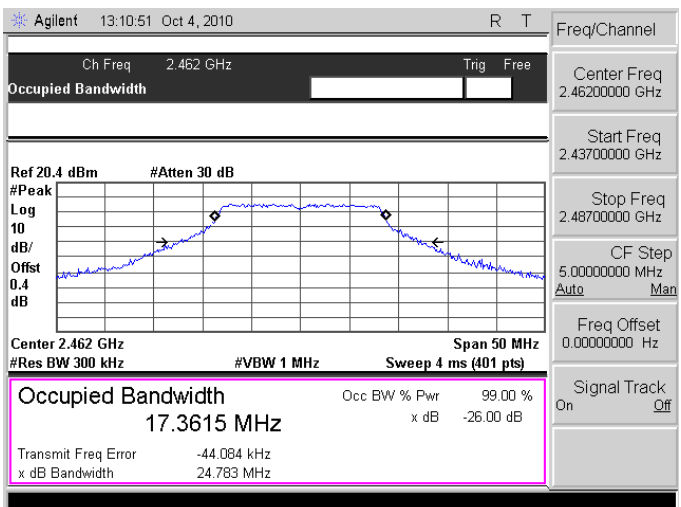
2412



2437

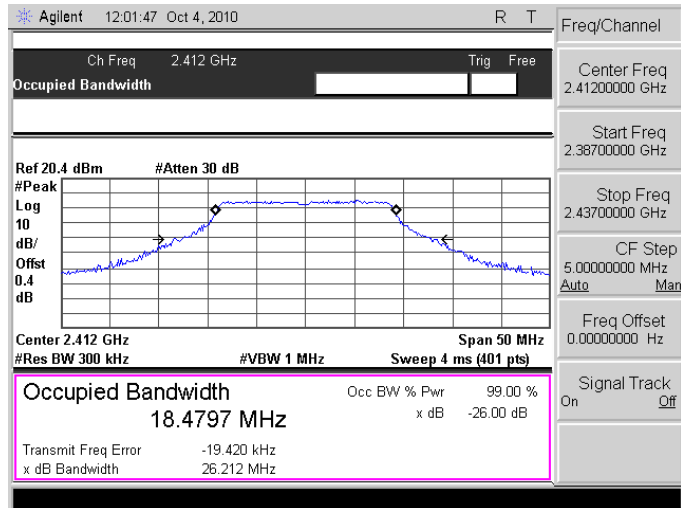


2462

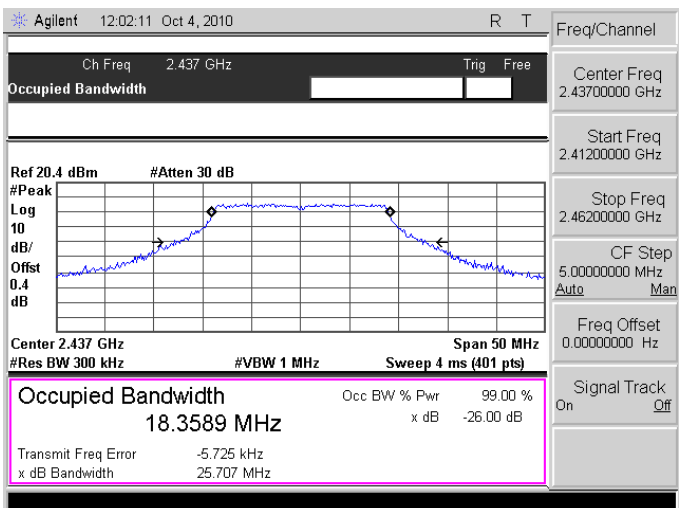


Mode 4: draft 802.11n Standard-20MHz Link Mode

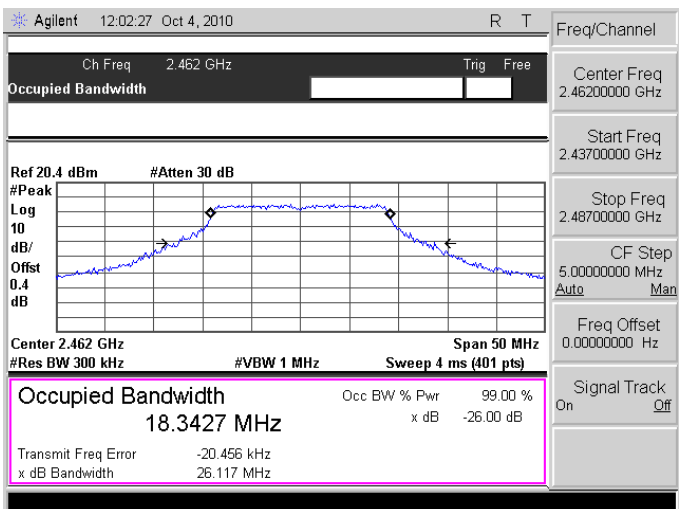
2412



2437

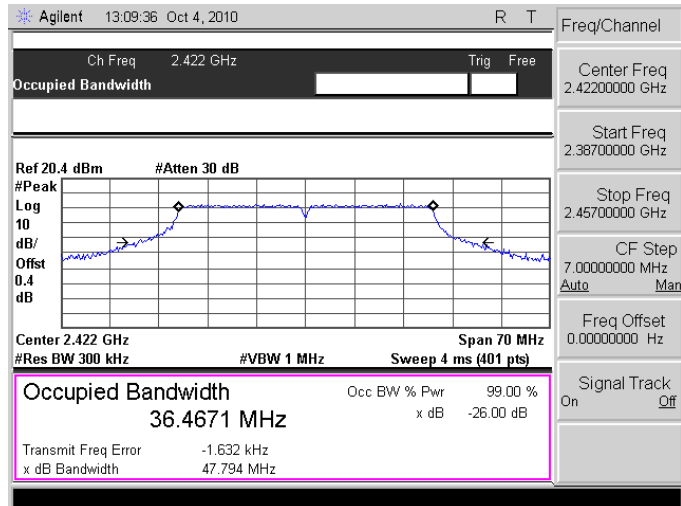


2462

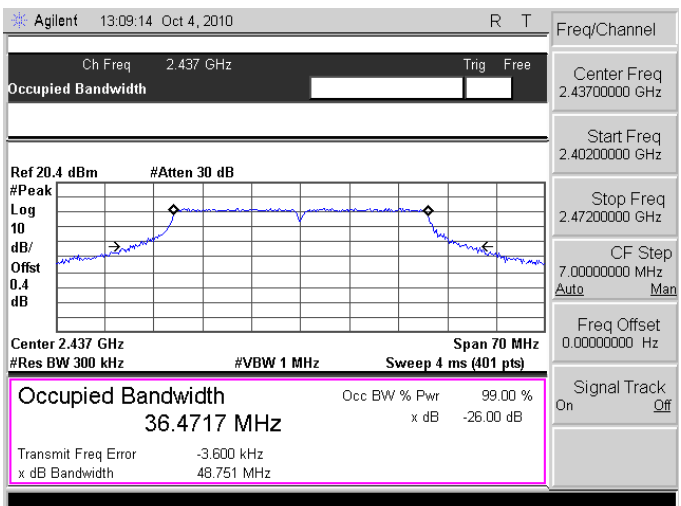


Mode 5: draft 802.11n Wide-40MHz Link Mode

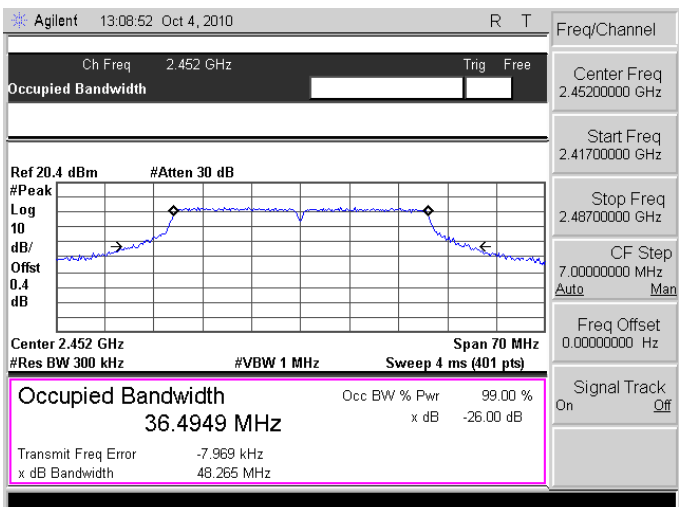
2422



2437



2452



8 Antenna Measurement

8.1. Limit

For intentional device, according to 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 15.247 (b), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

8.2. Antenna Connector Construction

The antenna used in this product is **PIFA antenna**. And the maximum Gain of this antenna is only **1.18 dBi**.