Most Technology Service Co., Ltd.
Tel:(86) 755-26825180 Fax:(86) 755-86170310
Http:// www. szmost.com Email: szmost@szmost.com

Test Report

Product Name: 802.11b/g PCI-Express Mini Card

FCC ID: XB5-PX5001

MODEL NO. : AWM50G-X

Applicant:

Shenzhen Allwins Technology Corporation
902#, Block A, R&D Building, Tsinghua Hi-Tech Park,
Nanshan District, Shenzhen, Guangdong, China

Date Received: 05/12/009

Date Tested: 05/10-11/2009

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TABLE OF CONTENTS

APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

TEST REPORT CONTAINING:

EXHIBIT INCLUDED:

Most Technology Service Co., Ltd.
Tel:(86) 755-26825180 Fax:(86) 755-86170310
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EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Mar 10,2009	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Mar 10,2009	1Year
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101202	Mar 10,2009	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238316	Mar 10,2009	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10,2009	1 Year
Bilog Antenna	Sunol	JB3	A121206	Mar 10,2009	1 Year
Horn Antenna	EMCO	3115	640201028-06	Mar 10,2009	1 Year
50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10,2009	1 Year
Cable	Resenberger	N/A	NO.1	Mar 10,2009	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10,2009	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10,2009	1 Year
Single Phase Power Line Filter	Kikusui	LIN40MA-PCR-L	LM002352	Mar 10,2009	1Year
AC Power Source	Kikusui	AC40MA	LM003232	Mar 10,2009	1Year
Test analyzer	Kikusui	KHA1000	LM003720	Mar 10,2009	1Year
ESD Tester	Kikusui	KES4021	LM003537	Mar 10,2009	1 Year
Signal Generator	IFR	2032	203002/100	Mar 10,2009	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
Dual Directional Coupler	A&R	DC6080	301508	Mar 10,2009	1 Year
Power Head	A&R	PH2000	301193	Mar 10,2009	1 Year
Power Meter	A&R	PM2002	302799	Mar 10,2009	1 Year
Field Monitor	A&R	FM5004	300329	Mar 10,2009	1 Year
Field Probe	A&R	FP5000	300221	Mar 10,2009	1 Year
EMCPRO System	EM Test	UCS-500-M4	V0648102026	Mar 10,2009	1 Year
EMCPRO System	EM Test	UCS-500-M4	V0648102026	Mar 10,2009	1 Year
Spectrum Analyzer	Agilent	E4446A	US44300459	Mar 10,2009	1 Year
Attenuator	Agilent	8491B	MY39262165	Mar 10,2009	1 Year

Remark:

Test Firm Name: Most Technology Service Co., Ltd.
Test Firm Address:
No. 5, 2nd Langshan Road, North District, Hi-tech Industrial Park,Nanshan, Shenzhen, Guangdong, China
FCC Registered Test Site Number: 490827

TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of MOST TECHNOLOGY SERVICE CO., LTD. The EUT was transmitting a test signal during the testing.

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a 50uH LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25 ℃ with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25℃ with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:
Freq (MHz) METER READING + ACF + CABLE = FS
33 20 dBuV + 10.36 dB + 0.9 dB= 31.26 dBuV/m @ 3m

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings were converted to average readings based on the duration of "ON" time.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.

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APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: Power Line Conducted Interference and Plots

RULES PART NUMBER: 15.207

REQUIREMENTS:

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

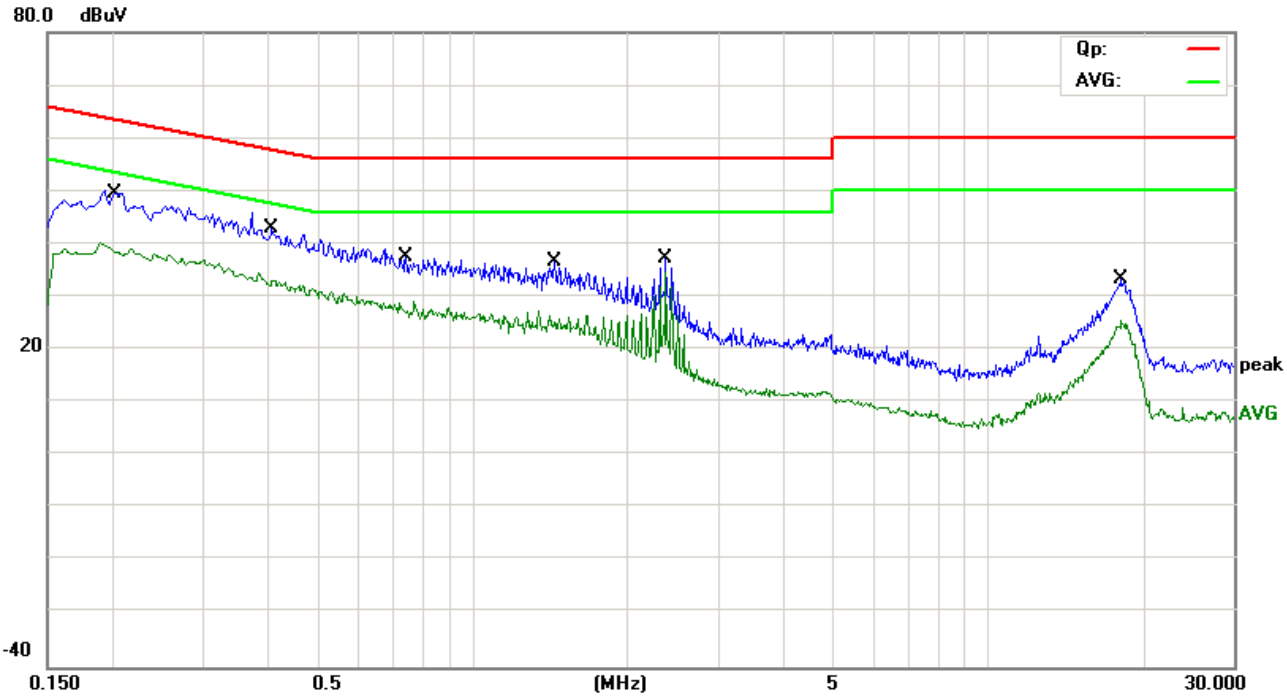
* Decreases with the logarithm of the frequency.

TEST PROCEDURE: ANSI STANDARD C63.4-2003

Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Conducted Emission Measurement

File : Allwins Data :#25 Date: 2009/05/11 Time: 14:10:50



Site site #1 Phase: *N* Temperature: 26

Limit: FCC Part 15 C Conduction QP Power: DC 3.3V From PC Input AC 120V/60Hz Humidity: 60 %

EUT: 802.11b/g PCI-Express Mini Card

M/N: XB5-PX5001

Mode: Running(WIFI Mode)

Note:

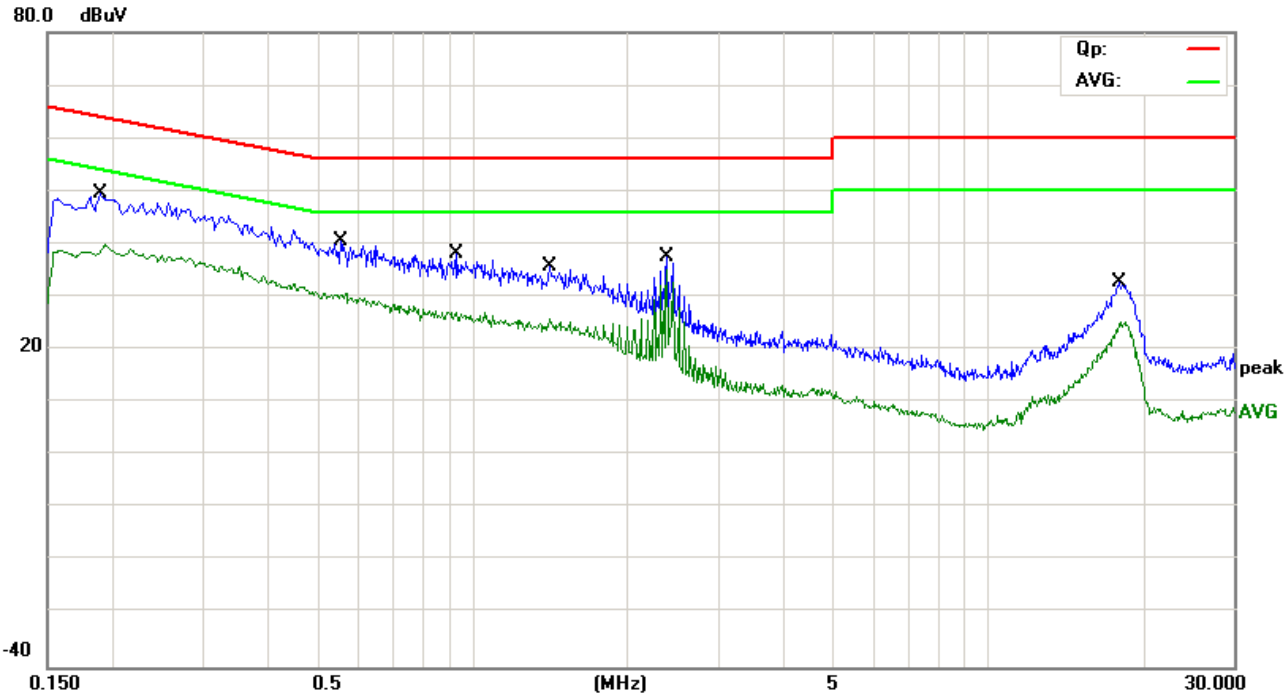
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2020	37.56	11.99	49.55	63.53	-13.98	QP	
2		0.4100	32.23	10.60	42.83	57.65	-14.82	QP	
3		0.7460	27.54	10.00	37.54	56.00	-18.46	QP	
4		1.4420	26.99	9.56	36.55	56.00	-19.45	QP	
5		2.3780	27.79	9.38	37.17	56.00	-18.83	QP	
6		18.1860	24.33	9.00	33.33	60.00	-26.67	QP	

*:Maximum data x:Over limit !:over margin

Address:No.5,Langshan 2nd Rd., North Hi-Tech Industrial park
Guangdong ,China
Tel: 0755-86170306 Fax: 0755-86170310

Conducted Emission Measurement

File :Allwins Data :#26 Date: 2009/05/11 Time: 14:16:02



Site site #1 Phase: *L1* Temperature: 26

Limit: FCC Part 15 C Conduction QP Power: DC 3.3V From PC Input AC 120V/60Hz Humidity: 60 %

EUT: 802.11b/g PCI-Express Mini Card

M/N: XB5-PX5001

Mode: Running(WIFI Mode)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1900	38.29	11.40	49.69	64.04	-14.35	QP	
2		0.5580	30.57	10.00	40.57	56.00	-15.43	QP	
3		0.9380	28.27	10.00	38.27	56.00	-17.73	QP	
4		1.4180	26.26	9.58	35.84	56.00	-20.16	QP	
5		2.3860	28.15	9.39	37.54	56.00	-18.46	QP	
6		17.9660	23.76	9.00	32.76	60.00	-27.24	QP	

*:Maximum data x:Over limit !:over margin

APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.247, 15.209

REQUIREMENTS:

30-88 MHz 40 dBuV/m @3m
88-216 MHz 43.5 dBuV/m @3m
216-960 MHz 46 dBuV/m @3m
960-1000 MHz 54 dBuV/m @3m
Above 1000MHz 74 dBuV/m(Peak) @3m, 54 dBuV/m(AV) @3m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 Db BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

REMARK: Emissions attenuated more than 20 dB below the permissible value are not reported.

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart C Limit(dBuV/m)
		Avg	QP	Peak	
54Mbps for IEEE 802.11b TX High frequency (2412.00MHz)					
112.21	Vertical	---	--	33.10	40.0
4824.00	Vertical	---	---	31.09	74.0
7236.10	Vertical	---	---	31.19	74.0
9648.20	Vertical	---	---	32.20	74.0
341.09	Horizontal	---	32.08	34.61	46.0
4824.00	Horizontal	---	---	33.25	74.0
7236.10	Horizontal	---	---	31.18	74.0
9648.20	Horizontal	---	---	30.30	74.0
54Mbps for IEEE 802.11g TX High frequency (2412.00MHz)					
112.22	Vertical	---	--	33.22	40.0
4824.09	Vertical	---	---	31.86	74.0
7236.10	Vertical	---	---	31.06	74.0
9648.01	Vertical	---	---	33.03	74.0
341.08	Horizontal	---	32.20	34.19	46.0
4824.01	Horizontal	---	---	33.00	74.0
7236.10	Horizontal	---	---	31.20	74.0
9648.21	Horizontal	---	---	30.01	74.0

APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.247, 15.209

REQUIREMENTS:

30-88 MHz 40 dBuV/m @3m
88-216 MHz 43.5 dBuV/m @3m
216-960 MHz 46 dBuV/m @3m
960-1000 MHz 54 dBuV/m @3m
Above 1000MHz 74 dBuV/m(Peak) @3m, 54 dBuV/m(AV) @3m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 Db BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

REMARK: Emissions attenuated more than 20 dB below the permissible value are not reported. Continued:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart C Limit(dBuV/m)
		Avg	QP	Peak	
54Mbps for IEEE 802.11b TX High frequency (2442.00MHz)					
112.19	Vertical	---	---	31.23	43.5
4884.10	Vertical	---	---	30.15	74.0
7326.03	Vertical	---	---	31.06	74.0
9768.30	Vertical	---	---	32.90	74.0
341.10	Horizontal	---	32.01	34.24	46.0
4884.10	Horizontal	---	---	30.80	74.0
7326.20	Horizontal	---	---	31.30	74.0
9768.00	Horizontal	---	---	31.22	74.0
54Mbps for IEEE 802.11b TX High frequency (2442.00MHz)					
112.21	Vertical	---	---	31.24	43.5
4884.09	Vertical	---	---	30.20	74.0
7326.00	Vertical	---	---	31.67	74.0
9768.11	Vertical	---	---	32.34	74.0
341.10	Horizontal	---	32.04	34.20	46.0
4884.10	Horizontal	---	---	31.07	74.0
7324.13	Horizontal	---	---	32.71	74.0
9768.01	Horizontal	---	---	31.19	74.0

APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.247, 15.209

REQUIREMENTS:

30-88 MHz 40 dBuV/m @3m
88-216 MHz 43.5 dBuV/m @3m
216-960 MHz 46 dBuV/m @3m
960-1000 MHz 54 dBuV/m @3m
Above 1000MHz 74 dBuV/m(Peak) @3m, 54 dBuV/m(AV) @3m

EMISSIONS RADIATED OUTSIDE OF THE SPECIFIED FREQUENCY BANDS, EXCEPT FOR HARMONICS, SHALL BE ATTENUATED BY AT LEAST 50 Db BELOW THE LEVEL OF THE FUNDAMENTAL OR TO THE GENERAL RADIATED EMISSION LIMITS IN 15.209, WHICHEVER IS THE LESSER ATTENUATION.

REMARK: Emissions attenuated more than 20 dB below the permissible value are not reported. Continued:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart C Limit(dBuV/m)
		Avg	QP	Peak	
54Mbps for IEEE 802.11b TX High frequency (2462.00MHz)					
112.21	Vertical	---	---	30.42	43.5
4924.09	Vertical	---	---	30.24	74.0
7386.11	Vertical	---	---	31.30	74.0
9848.10	Vertical	---	---	33.18	74.0
341.10	Horizontal	---	---	32.17	46.0
4924.08	Horizontal	---	32.67	33.57	74.0
7386.21	Horizontal	---	---	31.19	74.0
9848.01	Horizontal	---	---	30.13	74.0
54Mbps for IEEE 802.11b TX High frequency (2462.00MHz)					
112.21	Vertical	---	---	31.00	43.5
4924.09	Vertical	---	---	30.46	74.0
7386.11	Vertical	---	---	32.25	74.0
9848.10	Vertical	---	---	31.33	74.0
341.11	Horizontal	---	---	30.01	46.0
4924.05	Horizontal	---	32.18	34.04	74.0
7386.10	Horizontal	---	---	31.30	74.0
9848.09	Horizontal	---	---	32.25	74.0

Emissions attenuated more than 20 dB below the permissible value are not reported.

TEST PROCEDURE: ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector and an appropriate antenna. The resolution bandwidth of spectrum analyzer was 100 kHz below 1 GHz and 1 MHz above 1 GHz. An appropriate sweep speed was used. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.

APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: 6dB Bandwidth Test

RULES PART NUMBER: 15.247

REQUIREMENTS: The transmitter output was connected to a spectrum analyzer via a Attenuator.The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 KHz RBW and 100 KHz VBW.The 6dB Bandwidith is defined as the total spectrum the power of which is lower than peak power minus 6dB, The 6dB bandwidth shall be at least 500 KHz.

TEST RESULTS:

Test Mode: 54Mbps for IEEE 802.11b TX

Test Frequency (MHz)	6DB Bandwidth(MHz)	Limit	Conclusion
CH1:2412MHz	14.67	>500	PASS
CH7:2442MHz	14.89	>500	PASS
CH11:2462MHz	14.91	>500	PASS

Test Mode: 54Mbps for IEEE 802.11g TX

Test Frequency (MHz)	6DB Bandwidth(MHz)	Limit	Conclusion
CH1:2412MHz	15.69	>500	PASS
CH7:2442MHz	15.69	>500	PASS
CH11:2462MHz	15.69	>500	PASS

APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: Output Power Test

RULES PART NUMBER: 15.247

REQUIREMENTS: The transmitter output was connected to a power meter via a Attenuator,use the power meter to read out the peak output power, the peak output power shall be not exceed 30dBmw .

TEST RESULTS:

Test mode: 54Mbps for IEEE 802.11b TX

Test Frequency (MHz)	Read(PK) (dBm)	Cable loss (dB)	Atten loss (dB)	Result (dBm)	Limit (dBm)	Conclusion
CH1:2412MHz	-0.8	0.6	20	19.80	30	PASS
CH7:2442MHz	-1.09	0.6	20	19.51	30	PASS
CH11:2462MHz	-0.47	0.6	20	20.13	30	PASS

Test mode: 54Mbps for IEEE 802.11g TX

Test Frequency (MHz)	Read(PK) (dBm)	Cable loss (dB)	Atten loss (dB)	Result (dBm)	Limit (dBm)	Conclusion
CH1:2412MHz	-1.63	0.6	20	18.97	30	PASS
CH7:2442MHz	-1.41	0.6	20	19.19	30	PASS
CH11:2462MHz	-1.42	0.6	20	19.18	30	PASS

APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: Band Edge Compliance Test

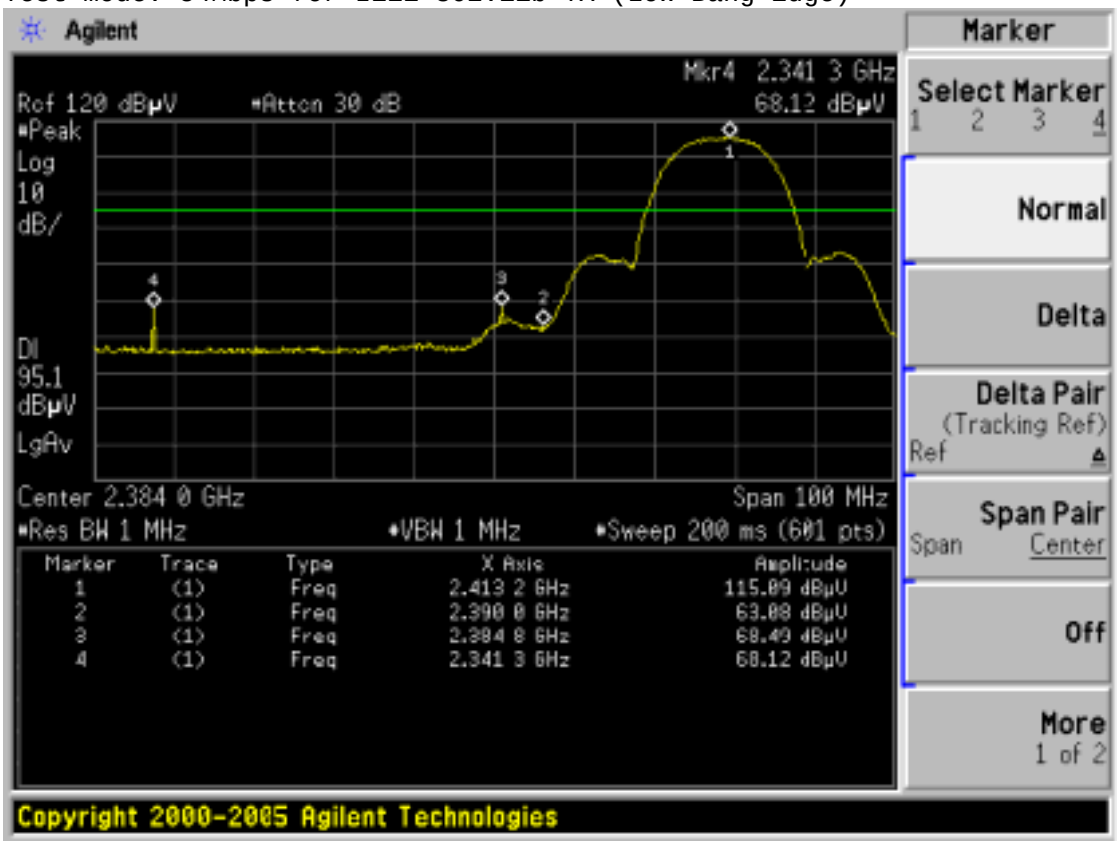
RULES PART NUMBER: 15.247

REQUIREMENTS:

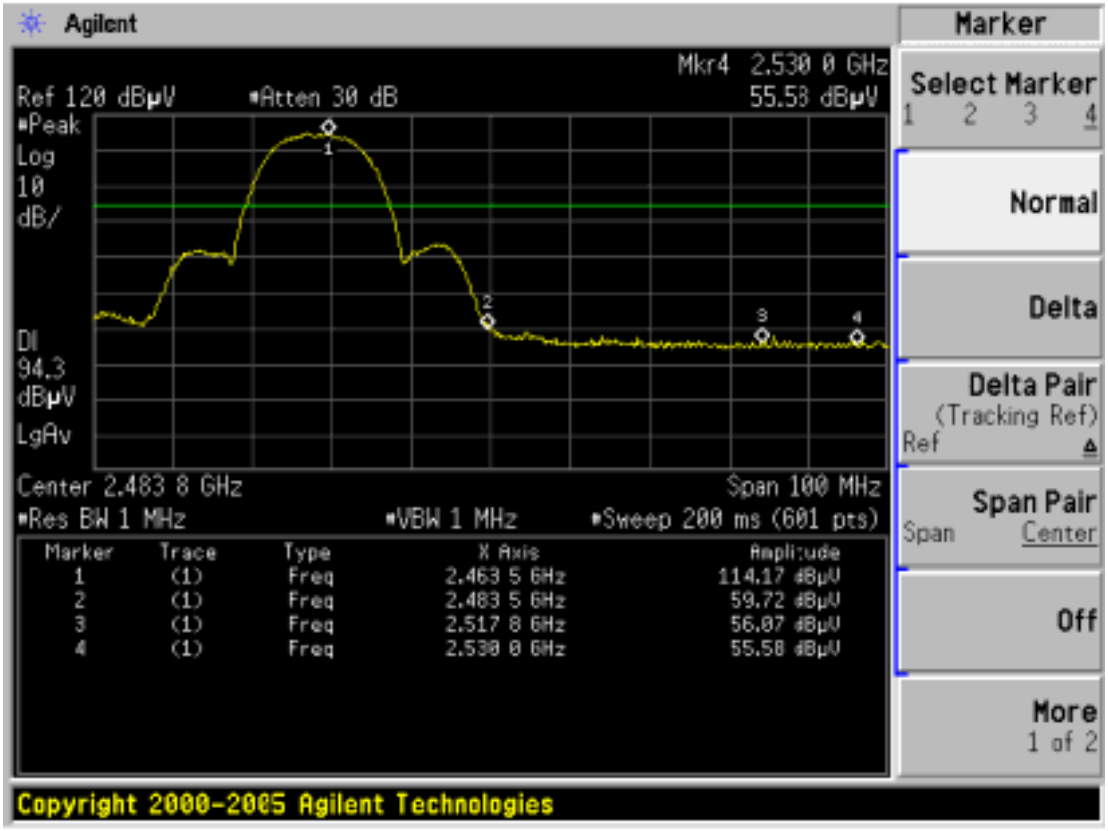
54Mbps for IEEE 802.11b TX				
Band Edge Frequency	AV	QP	Peak	Limit
2390 MHz	48.02dBuV	---	63.09 dBuV	54.0 dBuV
2483.5 MHz	46.33dBuV	---	59.72 dBuV	54.0 dBuV
54Mbps for IEEE 802.11g TX				
2390 MHz	50.12dBuV	---	70.40 dBuV	54.0 dBuV
2483.5 MHz	43.26dBuV	---	57.07 dBuV	54.0 dBuV

Emissions attenuated more than 20 dB below the permissible value are not reported.

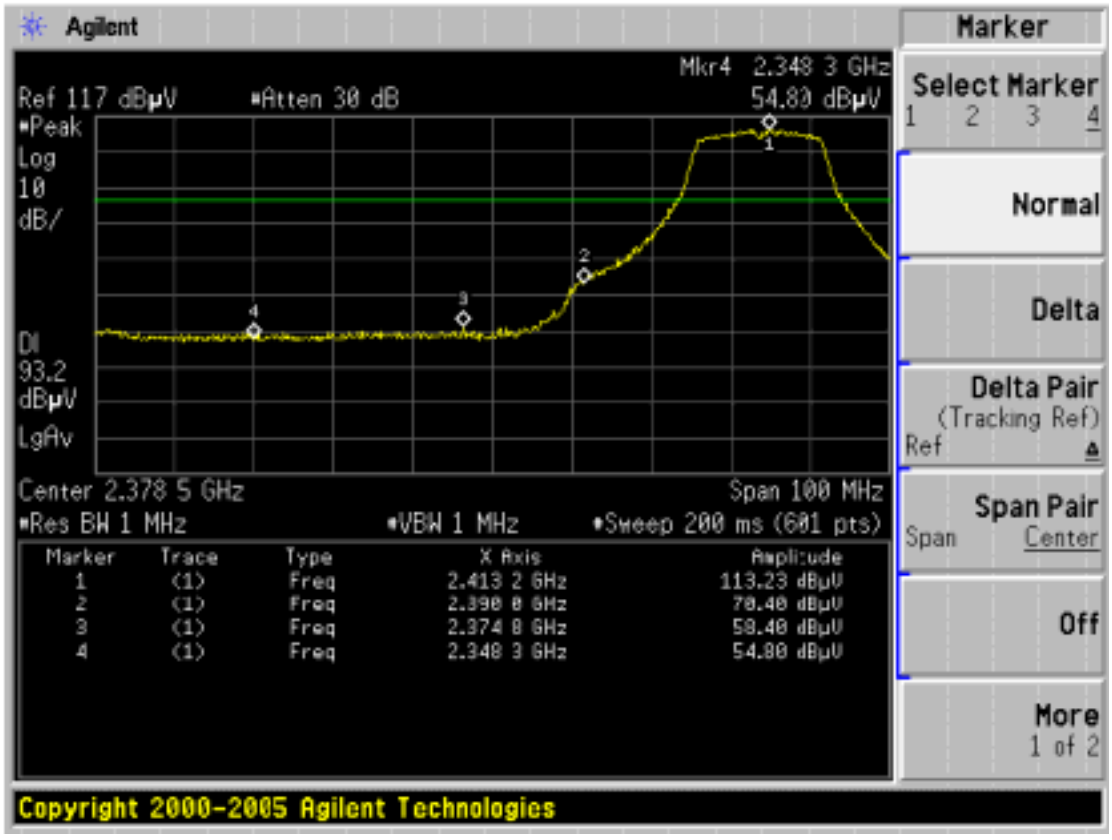
Test mode: 54Mbps for IEEE 802.11b TX (Low Bang Edge)



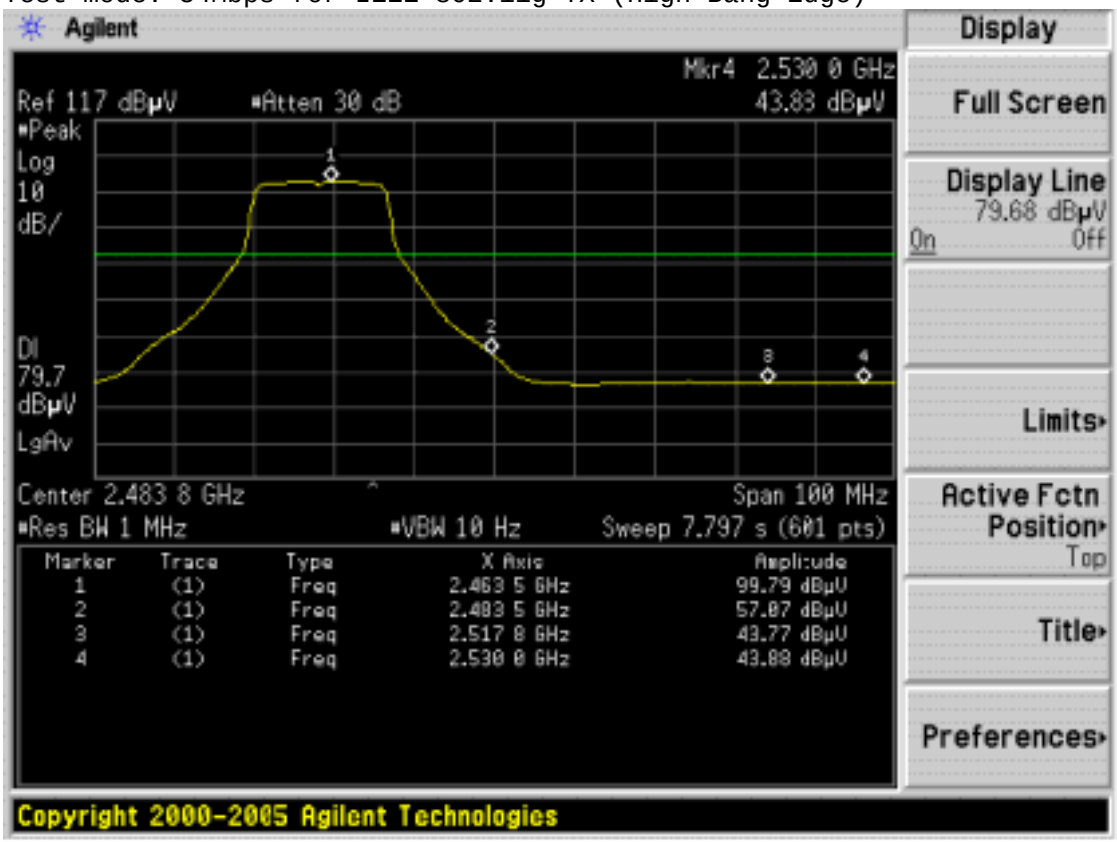
Test mode: 54Mbps for IEEE 802.11b TX (High Bang Edge)



Test mode: 54Mbps for IEEE 802.11g TX (Low Bang Edge)



Test mode: 54Mbps for IEEE 802.11g TX (High Bang Edge)



APPLICANT: Shenzhen Allwins Technology Corporation

FCC ID: XB5-PX5001

NAME OF TEST: Power Spectral Density Test

RULES PART NUMBER: 15.247

REQUIREMENTS: The transmitter output was connected to a spectrum analyzer via a Attenuator. The power density was measured by spectrum analyzer with 3 KHz RBW and 30 KHz VBW, sweep time=span/3KHz,the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3KHz band during any time interval of continuous transmission.

TEST RESULTS:

Test mode: 54Mbps for IEEE 802.11b TX

Test Frequency (MHz)	Read(PK) (dBm/3KHz)	Cable loss (dB)	Atten loss (dB)	Result (dBm/3KHz)	Limit (dBm/3KHz)	Conclusion
CH1:2412MHz	-23.91	0.6	20	-3.31	8	PASS
CH7:2442MHz	-21.69	0.6	20	-1.09	8	PASS
CH11:2462MHz	-21.58	0.6	20	-0.98	8	PASS

Test mode: 54Mbps for IEEE 802.11g TX

Test Frequency (MHz)	Read(PK) (dBm/3KHz)	Cable loss (dB)	Atten loss (dB)	Result (dBm/3KHz)	Limit (dBm/3KHz)	Conclusion
CH1:2412MHz	-26.78	0.6	20	-6.81	8	PASS
CH7:2442MHz	-27.05	0.6	20	-6.45	8	PASS
CH11:2462MHz	-28.70	0.6	20	-8.10	8	PASS