MEASUREMENT REPORT
of
Wireless Router

Applicant	**:**	ASUSTek Computer Inc.
EUT	**:**	Wireless Router
Model No.	**:**	WL-530g
FCC ID	**:**	MSQWL530G
Report No.	**:**	A5415275

Tested by :

Training Research Co., Ltd.

TEL : 886-2-26935155 **FAX : 886-2-26934440**

No. 255, Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C.

CERTIFICATION

We here by verify that:

The test data, data evaluation, test procedures and equipment configurations shown in this report were made mainly in accordance with the procedures given in ANSI C63.4 (2003) as a reference. All test were conducted by ***Training Research Co., Ltd.***, 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Also, we attest to the accuracy of each.

We further submit that the energy emitted by the sample EUT tested as described in the report is **in compliance with** the technical requirements set forth in the FCC Rules Part 15 Subpart B (Declaration of Conformity) and C Section 15.247.

Applicant	:	ASUSTek Computer Inc.
Applicant Address	:	4F, No. 150, Li-Te Rd., Peitou, Taipei, Taiwan, R.O.C.
Product Name	:	Wireless Router
Model Name	:	WL-530g
FCC ID	:	MSQWL530G
Report No.	:	A5415275
Test Date	:	November 30, 2004

Prepared by: *Jack Tsai* **Approved by:** *Frank Tsai*

Conditions of issue :

(1) ***This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.***

(2) ***This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.***

(3) ***This test report, measurements made by TRC are traceable to the NIST only Conducted and Radiated Method.***

★ NVLAP LAB CODE: 200174-0

Federal Communications Commission
Declaration of Conformity
(DoC)

for the following equipment:

Product name : Wireless Router
Model name : WL-530G
Trade name : ASUS

Is herewith confirmed and found to comply with the requirements of CFR 47 part15 Subpart B - Unintentional Radiators regulation. The results of electromagnetic mission evaluation are shown in the report number : A5415275

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation

Manufacturer	***USA local representative***
Company name: ASUSTeK Computer Inc.	To be determined
Computer address: 4/F, 150, Li-Te Rd., Peitou, Taipei, Taiwan	
ZIP / Postal code 112	
Contact person: Lawrence Yu	
Title: Manager	
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Ⅰ. GENERAL

1.1 Introduction

The following measurement report is submitted on behalf of applicant in support that the certification in accordance with Part 2 Subpart J and Part 15 Subpart A, B and C of the Commission's Rules and Regulations.

1.2 Description of EUT

Granted FCC ID	:	MSQWL530G
Product Name	:	Wireless Router
Model Name	:	WL-530g
Frequency Range	:	2.412 GHz ~ 2.462GHz
Support Channel	:	11 Channels
Modulation Skill	:	DBPSK, DQPSK, CCK, OFDM
Power Type	:	Powered by the Switching adapter, 1) Mfg.: PHIHONG Model: PSC11R-050 I/P: 100-240VAC, 50-60Hz, 0.3A O/P: +5VDC, 2A MAX. 180cm length, non-shielded, incorporates a ferrite core
	or	2) Mfg.: LEADER ELECTRONICS INC. Model: MU12-2050200-A1 I/P: 100-240VAC, 50/60Hz, 0.5A O/P: 5VDC, 2A 185cm length, non-shielded, incorporates a ferrite core
Data Cable	:	RJ45 cable x1, 60cm length, non-shielded, no ferrite core RJ45 cable x3, 2m length, non-shielded, no ferrite core RJ45 cable x1, 30m length, non-shielded, no ferrite core

1.3 Test method

1. LAN1, LAN2, and LAN3 of EUT are termination by RJ45 cables.
2. The WAN port of EUT connected to HUB located remotely.
3. Connected the LAN4 port of EUT with the LAN interface of PC. Using PC and software provided by the manufacturer to control EUT, the test is performed under the specific conditions.
4. Set different data rate and channel (CH1/CH6/CH11) being tested and repeat the procedures above.
   (a) Radiated for Intentional test:
   making EUT to the mode of continuous transmission
   (b) Conducted test and Radiated for unintentional test:
   making EUT to the linking (Rx/Tx) mode with far support equipments

4.1.Description of Support Equipment

In order to construct the minimum testing, following equipment were used as the support units.

PC	**:**	**HP**
Model No.	:	P8574A
Serial No.	:	TW21920435
FCC ID	:	N/A, DoC (Declaration of Confirmation) Approved
BSMI	:	3902H097
Power type	:	100 ~ 127VAC / 4A, 200 ~ 240VAC/2A, 50 ~ 60Hz, 5A, Switching
Power cord	:	Non-shielded, 1.8m length, Plastic hood, No ferrite core

Monitor	**:**	**HP 15' Color Monitor**
Model No.	:	D2827A, D2832A
Serial No.	:	KR91161719, KR91161716, KR91159981
FCC ID	:	C5F7NFCMC1518X, DoC Approved
BSMI	:	3872B039, 4872A167
Power type	:	110 ~ 240 VAC / 50 ~ 60 Hz, Switching
Power cord	:	Shielded, 1.83m long, No ferrite core
Data cable	:	Shielded, 1.46m long, with two ferrite cores

Printer	**:**	**EPSON**
Model No.	:	B241A
Serial No.	:	FAPY155090
FCC ID	:	N/A, DoC Approved
BSMI	:	R33126
Power type	:	Switching adaptor
Power cord	:	Non-shielded, 198cm length, No ferrite core
Data cable	:	Shielded, 1.50m length, No ferrite core

PS/2 Mouse	**:**	**HP**
Model No.	:	M-UR89, M-S69, M-S34
Serial No.	:	LZS21750238, 334684-002 323614-001, LZB90714106
FCC ID	:	DoC Approved
BSMI	:	3892D767, R41126, 4862A011
Power type	:	By PC
Power cord	:	Shielded, 1.80m (1.90m) length, No ferrite core

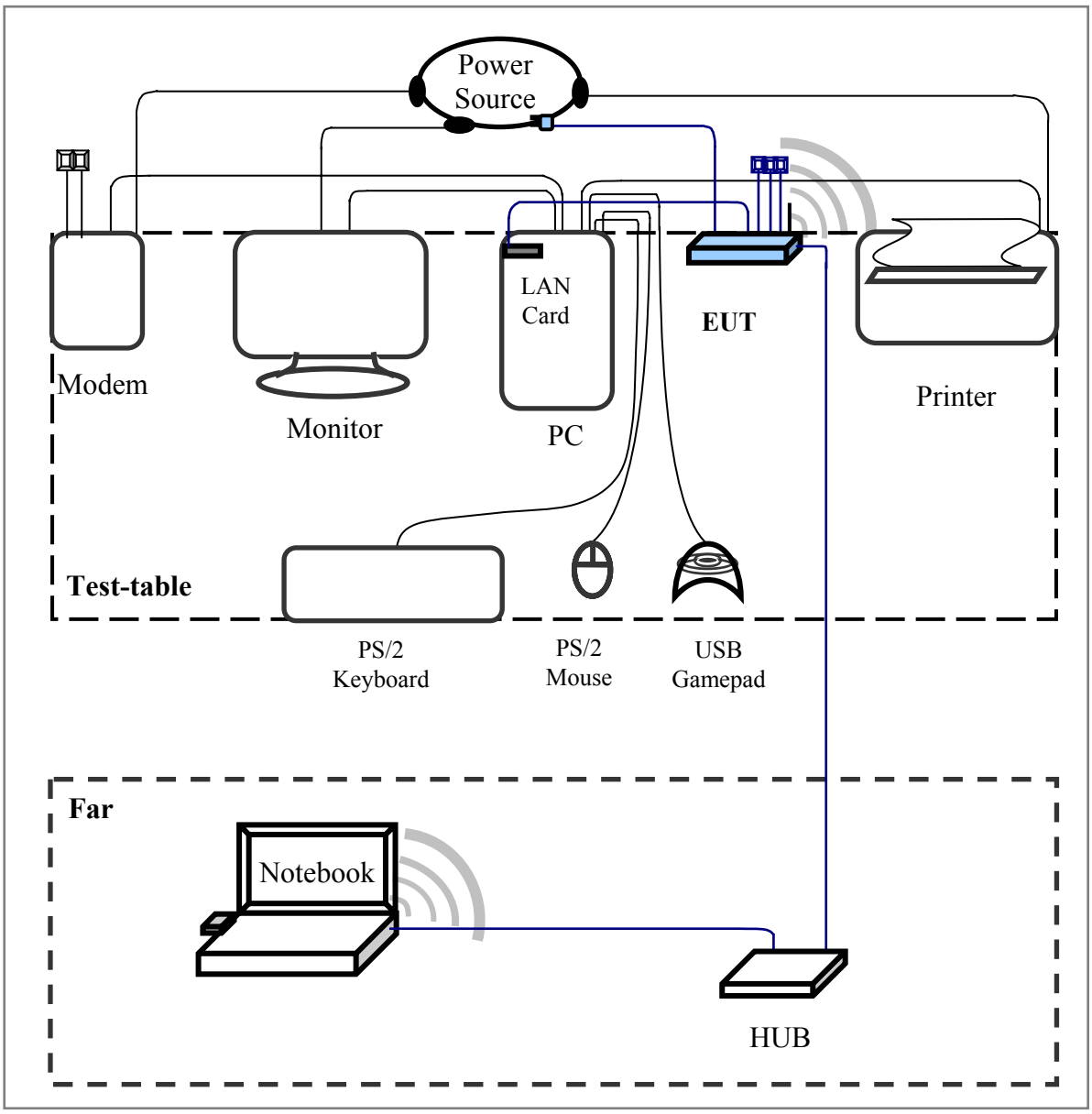
PS/2 Keyboard	**:**	**HP**
Model No.	:	5187-0343, KB0133, 5181
Serial No.	:	BE21700404, 265987-AB1 Tch 323686-AB1, BE21700405
FCC ID	:	DoC Approved
BSMI	:	3892C981, R31310, 3892C981
Power type	:	By PC
Data cable	:	Shielded, 1.85m length, with ferrite core

Modem	**:**	**ACEEX**
Model No.	:	XDM-56V14
FCC ID	:	IFAXDM-56V14
Power type	:	Linear
Power cord	:	Non-shielded, 1.9m length, No ferrite cord
Data cable	:	RS232, Shielded, 1.2m length, No ferrite core
		RJ11C x 2, 7’ length non-shielded, No ferrite core

USB Gamepad	**:**	**Rockfire**
Model No.	:	QF-337uv
Serial No.	:	10600545, KR91379759
FCC ID	:	None (CE approval)
BSMI	:	3862A574
Power type	:	By computer
Data Cable	:	Shielded, 1.81m length, Plastic, with ferrite core
LAN Card	**:**	**D-Link**
Model No.	:	DFE-530TX
Serial No.	:	0050BAE32FF3
FCC ID	:	N/A, DoC Approved
Notebook PC	**:**	**Twinhead**
Model No.	:	N222S
Serial No.	:	SY3261000988
FCC ID	:	DoC (Declaration of Confirmation) Approved
BSMI	:	71001018
Power adaptor	**:**	**LI Shin International Enterprise Corp.**
Model No.	:	LSE9802A2060
Serial No.	:	A20231065818
FCC ID	:	DoC Approved
BSMI	:	3882B381
Power type	:	100 ~ 240VAC / 50 ~ 60Hz, 1.5A, Switching
Power cord	:	Non-shielded, 1.0m length, Plastic hood, No ferrite core (Main power to adaptor) Shielded, 1.5m length, Plastic hood, ferrite core (DC plug to adaptor)
WLAN Card	**:**	**Gemtek Technology Co., Ltd.**
Model No.	:	C911003
FCC ID	:	MXF-C911003

1.5 Configuration of System Under Test

1.5.1 Conducted and Radiated for Unintentional



Connections of Equipment

PC: *Parallel Port --- a printer

*VGA Port --- a monitor

*Serial Port --- an external modem

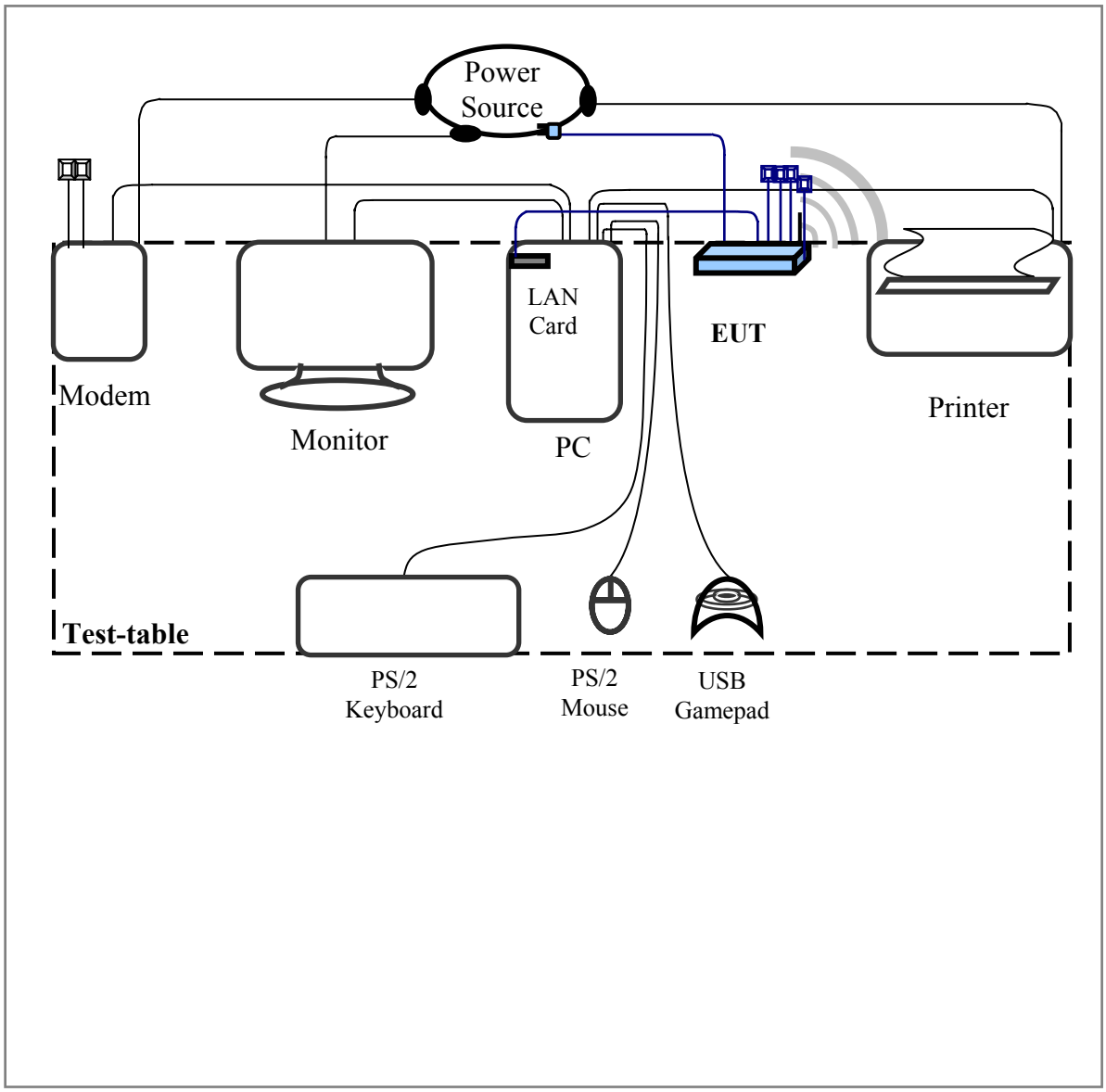
*USB Port --- a USB gamepad

*LAN Interface --- **EUT**

*PS/2-key Port --- a PS/2 keyboard

*PS/2-mouse Port --- a PS/2 mouse

1.5.2 Radiated of Intentional



The tests below are carried with the EUT transmitter set at high power in TDD mode. The EUT is forced to select of output power level and channel number by LAN port.

The setting up procedure was recorded in 1.3 test method.

1.6 Verify the Frequency and Channel

Channel	Frequency (GHz)
1	2.412
2	2.417
3	2.422
4	2.427
5	2.432
6	2.437
7	2.442
8	2.447
9	2.452
10	2.457
11	2.462

Note:

1. This is for confirming that all frequencies are in 2.412GHz to 2.462GHz.
2. Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10 MHz
   (The locations of these frequencies one near the top, one near the middle and one near the bottom.)
3. After test, the EUT operating frequencies are in 2.412GHz to 2.462GHz. So all the items as followed in testing report are need to test these three frequencies:
   Top: Channel – 1; Middle: Channel – 6; Bottom: Channel – 11.

1.7 Test Procedure

All measurements contained in this report were performed mainly according to the techniques described in ANSI C63.4 (2003) and the pre-setup was written on 1.3 test method, the detail setup was written on each test item.

1.8 Location of the Test Site

The radiated emissions measurements required by the rules were performed on the **three-meter**, **Anechoic Chamber (FCC Registration Number: 93906)** maintained by *Training Research Co., Ltd.* 1F, No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. Complete description and measurement data have been placed on file with the commission. The conducted power line emissions tests and other test items were performed in a anechoic chamber also located at Training Research Co., Ltd.

No. 255 Nanyang Street, Shijr, Taipei Hsien 221, Taiwan, R.O.C. *Training Research Co., Ltd.* is listed by the FCC as a facility available to do measurement work for others on a contract basis.

1.9 General Test Condition

The conditions under which the EUT operates were varied to determine their effect on the equipment's emission characteristics. The final configuration of the test system and the mode of operation used during these tests were chosen as that which produced the highest emission levels. However, only those conditions, which the EUT was considered likely to encounter in normal use were investigated.

In test, they were set in high power and continuously transmitting mode that controlled by computer. The ch01, ch06 and ch11 of EUT were all tested. The setting up procedure is recorded on 1.3 test method.

II. Section 15.101(a): Equipment authorization of unintentional radiators

The EUT equipped with a LAN interface and should be operated with the computer. It was categorized to *Class B personal computers and peripherals* as cannot be operated stand-alone. The authorization requires **Declaration of Conformity (DoC)** and the items required such as Sect.15.107 (Conducted limits) and Section15.109 (Radiated emission limits) is same as Section15.207 and 15.247(C).

III. Section 15.203: Antenna requirement

The EUT can be equipped with detachable antenna. The detachable external antenna is affixed to the EUT using a unique connector, which allows for replacement of a broken antenna, but does not use a standard antenna jack or electrical connector.

The custom antenna specification of list as below:

Manufacturer	:	Wha Yu Industrial Co., Ltd.
Part No	:	C660-510003-A
Connector	:	SMA Plug Reverse
Antenna Type	:	Dipole Antenna
Antenna Gain	:	1.80dBi

VI. Section 15.207: Power Line Conducted Emissions for AC Powered Units

4.1 Test Condition & Setup

The power line conducted emission measurements were performed in an anechoic chamber. The EUT was assembled on a wooden table, which is 80 centimeters high, was placed 40 centimeters from the backwall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and Line Impedance Stabilization Networks (LISNs). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer (or EMI receiver) was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak and average detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in paragraph 4.3

There is a test condition apply in this test item, the test procedure description as <1.3>. Three channels were tested, one in the top (CH01), one in the middle (CH06) and the other in bottom (CH11).

4.2 List of Test Instruments

Instrument Name	Model	Brand	Serial No.	Calibration Date Next time
EMI Receiver	8546A	HP	3520A00242	08/05/05
RF Filter Section	85460A	HP	3448A00217	08/05/05
LISN (EUT)	LISN-01	TRC	99-05	10/07/05
LISN (Support E.)	LISN-01	TRC	9912-03, 04	11/04/05
Pre-amplifier	15542 ZFL-500	Mini – Circuits	0 0117	05/20/05
6dB Attenuator	MCL BW-S6W2	Mini – Circuits	9915 – Conducted	05/20/05
10dB Attenuator	A5542 VAT010	Mini – Circuits	0215 – Conducted	05/20/05
Coaxial Cable (2 meter)	A30A30-0058-50FS-2M	Jyebao	SMA-08	05/20/05
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	Jyebao	SMA-09	05/20/05
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-01	05/20/05
Coaxial Cable (20 meter)	RG-214/U	Jyebao	NP-02	05/20/05
Auto Switch Box (< 30MHz)	ASB-01	TRC	9904-01	05/20/05

4.3 Test Result of Power Line Conducted Emissions

The following table shows a summary of the highest emissions of power line conducted emissions on the LIVE and NETURAL conductors of the EUT power cord. Show as follows.

Test Conditions: Temperature : 25 °C Humidity : 73 % RH

Test mode: Standby mode for Adapter#1 PSC11R-050

Power Connected Emissions					*Class B*		
Conductor	*Frequency (KHz)*	*Peak (dBμV)*	*QP (dBμV)*	*Average (dBμV)*	*QP-limit (dBμV)*	*AVG-limit (dBμV)*	*Margin (dB)*
Line 1	203.000	38.64	---	---	64.49	54.49	-15.85
	257.000	38.96	---	---	62.94	52.94	-13.98
	391.000	39.30	---	---	59.11	49.11	-9.81
	513.500	44.78	44.01	36.46	56.00	46.00	-9.54
	911.000	35.38	---	---	56.00	46.00	-10.62
	1320.000	34.45	---	---	56.00	46.00	-11.55
	1661.000	34.86	---	---	56.00	46.00	-11.14
	2094.000	35.03	---	---	56.00	46.00	-10.97
	5130.000	35.61	---	---	60.00	50.00	-14.39
	8300.000	36.38	---	---	60.00	50.00	-13.62
Line 2	185.000	42.50	---	---	65.00	55.00	-12.50
	264.000	40.10	---	---	62.74	52.74	-12.64
	466.000	37.49	---	---	56.97	46.97	-9.48
	509.000	39.40	---	---	56.00	46.00	-6.60
	651.000	36.11	---	---	56.00	46.00	-9.89
	1661.000	32.76	---	---	56.00	46.00	-13.24
	3189.000	34.51	---	---	56.00	46.00	-11.49
	4484.000	36.40	---	---	56.00	46.00	-9.60
	7360.000	41.16	---	---	60.00	50.00	-8.84
	11940.000	40.03	---	---	60.00	50.00	-9.97

NOTE:

(1)Margin = Peak Amplitude – Limit, *The reading amplitudes are all under limit.*

(2)A "+" sign in the margin column means the emission is OVER the Class B Limit and "–" sign of means UNDER the Class B limit

Test mode: IEEE 802.11b Channel 1 for PSC11R-050

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	255.000	46.11	---	---	63.00	53.00	-6.89
	391.000	43.91	---	---	59.11	49.11	-5.20
	514.270	44.95	43.68	35.02	56.00	46.00	-10.98
	893.000	38.25	---	---	56.00	46.00	-7.75
	1629.000	36.67	---	---	56.00	46.00	-9.33
	4523.000	38.46	---	---	56.00	46.00	-7.54
Line 2	257.000	47.06	---	---	62.94	52.94	-5.88
	480.000	41.05	---	---	56.57	46.57	-5.52
	639.000	40.23	---	---	56.00	46.00	-5.77
	3542.000	37.26	---	---	56.00	46.00	-8.74
	6300.000	42.58	---	---	60.00	50.00	-7.42
	7960.000	43.45	---	---	60.00	50.00	-6.55

Test mode: IEEE 802.11b Channel 6 for PSC11R-050

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	262.000	44.01	---	---	62.80	52.80	-8.79
	387.000	43.27	---	---	59.23	49.23	-5.96
	514.000	45.82	43.57	35.05	56.00	46.00	-10.95
	893.000	38.37	---	---	56.00	46.00	-7.63
	1629.000	37.12	---	---	56.00	46.00	-8.88
	3780.000	37.33	---	---	56.00	46.00	-8.67
Line 2	262.000	45.20	---	---	62.80	52.80	-7.60
	480.000	40.12	---	---	56.57	46.57	-6.45
	651.000	39.38	---	---	56.00	46.00	-6.62
	893.000	36.81	---	---	56.00	46.00	-9.19
	6710.000	43.02	---	---	60.00	50.00	-6.98
	8740.000	44.60	---	---	60.00	50.00	-5.40

Test mode: IEEE 802.11b Channel 11 for PSC11R-050

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	384.000	43.18	---	---	59.31	49.31	-6.13
	513.455	44.52	43.93	36.35	56.00	46.00	-9.65
	767.000	37.81	---	---	56.00	46.00	-8.19
	902.000	38.32	---	---	56.00	46.00	-7.68
	2029.000	37.17	---	---	56.00	46.00	-8.83
	4666.000	38.27	---	---	56.00	46.00	-7.73
Line 2	183.000	42.83	---	---	65.06	55.06	-12.23
	513.000	39.38	---	---	56.00	46.00	-6.62
	657.000	36.12	---	---	56.00	46.00	-9.88
	3158.000	34.32	---	---	56.00	46.00	-11.68
	5770.000	39.99	---	---	60.00	50.00	-10.01
	8120.000	41.01	---	---	60.00	50.00	-8.99

Test mode: IEEE 802.11g Channel 1 for PSC11R-050

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	380.000	39.03	---	---	59.43	49.43	-10.40
	513.095	44.97	43.97	36.18	56.00	46.00	-9.82
	657.000	35.15	---	---	56.00	46.00	-10.85
	902.000	35.95	---	---	56.00	46.00	-10.05
	1308.000	34.82	---	---	56.00	46.00	-11.18
	2051.000	34.44	---	---	56.00	46.00	-11.56
Line 2	255.000	40.77	---	---	63.00	53.00	-12.23
	509.000	39.36	---	---	56.00	46.00	-6.64
	657.000	36.23	---	---	56.00	46.00	-9.77
	3158.000	34.66	---	---	56.00	46.00	-11.34
	7010.000	40.10	---	---	60.00	50.00	-9.90
	12560.000	39.66	---	---	60.00	50.00	-10.34

Test mode: IEEE 802.11g Channel 6 for PSC11R-050

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	384.000	38.92	---	---	59.31	49.31	-10.39
	514.175	44.33	43.92	36.48	56.00	46.00	-9.52
	919.000	35.81	---	---	56.00	46.00	-10.19
	1308.000	35.15	---	---	56.00	46.00	-10.85
	1661.000	34.94	---	---	56.00	46.00	-11.06
	4092.000	34.80	---	---	56.00	46.00	-11.20
Line 2	509.000	40.21	---	---	56.00	46.00	-5.79
	651.000	36.48	---	---	56.00	46.00	-9.52
	3381.000	34.52	---	---	56.00	46.00	-11.48
	5710.000	38.69	---	---	60.00	50.00	-11.31
	8150.000	41.56	---	---	60.00	50.00	-8.44
	11610.000	40.40	---	---	60.00	50.00	-9.60

Test mode: IEEE 802.11g Channel 11 for PSC11R-050

Power Connected Emissions					FCC Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	398.000	39.17	---	---	58.91	48.91	-9.74
	513.405	44.60	43.96	36.39	56.00	46.00	-9.61
	911.000	35.81	---	---	56.00	46.00	-10.19
	1308.000	35.15	---	---	56.00	46.00	-10.85
	1661.000	34.70	---	---	56.00	46.00	-11.30
	3158.000	34.23	---	---	56.00	46.00	-11.77
Line 2	509.000	40.06	---	---	56.00	46.00	-5.94
	651.000	36.34	---	---	56.00	46.00	-9.66
	1308.000	33.21	---	---	56.00	46.00	-12.79
	2308.000	33.35	---	---	56.00	46.00	-12.65
	4092.000	36.71	---	---	56.00	46.00	-9.29
	7730.000	41.49	---	---	60.00	50.00	-8.51

Test mode: Standby mode for Adapter#2 MU12-2050200-A1

Power Connected Emissions					*Class B*		
Conductor	*Frequency (KHz)*	*Peak (dBμV)*	*QP (dBμV)*	*Average (dBμV)*	*QP-limit (dBμV)*	*AVG-limit (dBμV)*	*Margin (dB)*
Line 1	190.370	52.51	52.28	41.35	64.83	54.83	-12.55
	285.000	37.28	---	---	62.14	52.14	-14.86
	380.000	36.83	---	---	59.43	49.43	-12.60
	1134.000	31.30	---	---	56.00	46.00	-14.70
	1518.000	33.52	---	---	56.00	46.00	-12.48
	1889.000	35.20	---	---	56.00	46.00	-10.80
	2741.000	34.11	---	---	56.00	46.00	-11.89
	10090.000	39.03	---	---	60.00	50.00	-10.97
	11290.000	39.66	---	---	60.00	50.00	-10.34
	17080.000	37.91	---	---	60.00	50.00	-12.09
Line 2	187.000	49.91	---	---	64.94	54.94	-5.03
	282.000	37.90	---	---	62.23	52.23	-14.33
	662.000	32.74	---	---	56.00	46.00	-13.26
	1134.000	31.63	---	---	56.00	46.00	-14.37
	1424.000	30.47	---	---	56.00	46.00	-15.53
	2458.000	35.79	---	---	56.00	46.00	-10.21
	8560.000	33.82	---	---	60.00	50.00	-16.18
	10090.000	39.50	---	---	60.00	50.00	-10.50
	11290.000	39.80	---	---	60.00	50.00	-10.20
	16830.000	39.43	---	---	60.00	50.00	-10.57

Test mode: IEEE 802.11b Channel 1 for MU12-2050200-A1

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	189.245	52.51	51.97	41.01	64.83	54.83	-12.86
	282.000	40.89	---	---	62.23	52.23	-11.34
	1889.000	35.17	---	---	56.00	46.00	-10.83
	2663.000	34.46	---	---	56.00	46.00	-11.54
	9680.000	38.92	---	---	60.00	50.00	-11.08
	11230.000	40.61	---	---	60.00	50.00	-9.39
Line 2	187.000	49.77	---	---	64.94	54.94	-5.17
	1134.000	33.26	---	---	56.00	46.00	-12.74
	2558.000	35.03	---	---	56.00	46.00	-10.97
	10090.000	40.77	---	---	60.00	50.00	-9.23
	11230.000	39.78	---	---	60.00	50.00	-10.22
	16830.000	38.51	---	---	60.00	50.00	-11.49

Test mode: IEEE 802.11b Channel 6 for MU12-2050200-A1

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	189.720	52.49	51.94	41.15	64.89	54.89	-12.95
	1518.000	34.25	---	---	56.00	46.00	-11.75
	1889.000	35.01	---	---	56.00	46.00	-10.99
	2741.000	33.75	---	---	56.00	46.00	-12.25
	9680.000	38.58	---	---	60.00	50.00	-11.42
	11230.000	39.59	---	---	60.00	50.00	-10.41
Line 2	187.000	49.52	---	---	64.94	54.94	-5.42
	475.000	34.50	---	---	56.71	46.71	-12.21
	2072.000	35.34	---	---	56.00	46.00	-10.66
	2636.000	35.38	---	---	56.00	46.00	-10.62
	10090.000	39.36	---	---	60.00	50.00	-10.64
	11230.000	41.45	---	---	60.00	50.00	-8.55

Test mode: IEEE 802.11b Channel 11 for MU12-2050200-A1

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	189.720	52.49	51.88	41.12	64.89	54.89	-13.01
	380.000	37.86	---	---	59.43	49.43	-11.57
	2741.000	34.18	---	---	56.00	46.00	-11.82
	10090.000	40.44	---	---	60.00	50.00	-9.56
	11230.000	40.08	---	---	60.00	50.00	-9.92
	16660.000	37.82	---	---	60.00	50.00	-12.18
Line 2	187.000	48.94	---	---	64.94	54.94	-6.00
	2158.000	36.26	---	---	56.00	46.00	-9.74
	2458.000	35.27	---	---	56.00	46.00	-10.73
	10090.000	39.03	---	---	60.00	50.00	-10.97
	11230.000	40.54	---	---	60.00	50.00	-9.46
	17080.000	39.29	---	---	60.00	50.00	-10.71

Test mode: IEEE 802.11g Channel 1 for MU12-2050200-A1

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	193.000	51.85	---	---	64.77	54.77	-2.92
	282.000	41.45	---	---	62.23	52.23	-10.78
	2094.000	35.01	---	---	56.00	46.00	-10.99
	10090.000	40.84	---	---	60.00	50.00	-9.16
	11230.000	42.07	---	---	60.00	50.00	-7.93
	12800.000	40.16	---	---	60.00	50.00	-9.84
Line 2	191.000	51.69	---	---	64.83	54.83	-3.14
	288.000	39.38	---	---	62.06	52.06	-12.68
	2179.000	36.83	---	---	56.00	46.00	-9.17
	10090.000	42.39	---	---	60.00	50.00	-7.61
	11230.000	42.37	---	---	60.00	50.00	-7.63
	12800.000	40.40	---	---	60.00	50.00	-9.60

Test mode: IEEE 802.11g Channel 6 for MU12-2050200-A1

Power Connected Emissions					Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	185.000	49.52	---	---	65.00	55.00	-5.48
	288.000	42.27	---	---	62.06	52.06	-9.79
	380.000	37.52	---	---	59.43	49.43	-11.91
	2094.000	34.04	---	---	56.00	46.00	-11.96
	10090.000	42.27	---	---	60.00	50.00	-7.73
	11230.000	42.58	---	---	60.00	50.00	-7.42
Line 2	187.000	50.15	---	---	64.94	54.94	-4.79
	2558.000	36.94	---	---	56.00	46.00	-9.06
	10090.000	42.23	---	---	60.00	50.00	-7.77
	11230.000	42.39	---	---	60.00	50.00	-7.61
	12800.000	41.26	---	---	60.00	50.00	-8.74
	16660.000	39.74	---	---	60.00	50.00	-10.26

Test mode: IEEE 802.11g Channel 11 for MU12-2050200-A1

Power Connected Emissions					FCC Class B		
Conductor	**Frequency (KHz)**	**Peak (dBμV)**	**QP (dBμV)**	**Average (dBμV)**	**QP-limit (dBμV)**	**AVG-limit (dBμV)**	**Margin (dB)**
Line 1	172.000	47.69	---	---	65.37	55.37	-7.68
	285.000	41.31	---	---	62.14	52.14	-10.83
	2094.000	35.17	---	---	56.00	46.00	-10.83
	2663.000	35.45	---	---	56.00	46.00	-10.55
	10030.000	40.96	---	---	60.00	50.00	-9.04
	11610.000	42.79	---	---	60.00	50.00	-7.21
Line 2	193.000	48.36	---	---	64.77	54.77	-6.41
	285.000	40.49	---	---	62.14	52.14	-11.65
	2663.000	36.76	---	---	56.00	46.00	-9.24
	10030.000	41.94	---	---	60.00	50.00	-8.06
	11610.000	43.07	---	---	60.00	50.00	-6.93
	16660.000	37.77	---	---	60.00	50.00	-12.23

V. Section 15.247 (a): Technical description of the EUT

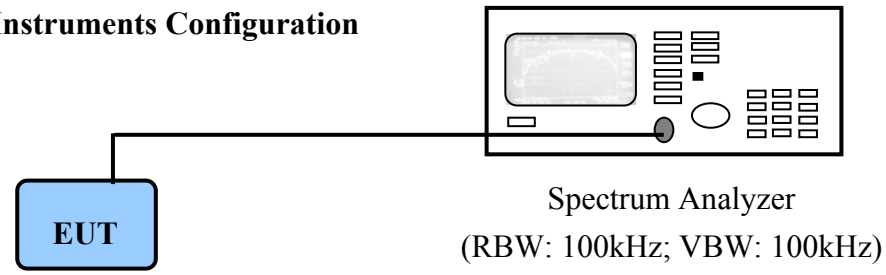
Direct Sequence System is a spread spectrum system in which the carrier has been modulated by a high speed spreading code and an information data stream. The high speed code sequence dominates the "modulating function" and is the direct cause of the wide spreading of the transmitted signal. In the operational description demonstrates the operation principles of the Baseband processor employed by the EUT, shows that which is a complete DSSS baseband processor and meets the definition of the direct sequence spread spectrum system.

VI. Section 15.247(a)(2): Bandwidth for Direct Sequence System.

6.1 Test Condition & Setup

The transmitter bandwidth measurements were performed by the contact manner. The EUT was set to transmit continuously, also various channels were investigated to find the maximum occupied bandwidth. The output of the EUT was connected to the spectrum analyzer. The bandwidth of the fundamental frequency is observed by the spectrum analyzer with 100kHz RBW and 100kHz VBW.

6.2 Test Instruments Configuration



P.S.: computer to control the EUT at maximal power output and channel number and set antenna kit

6.3 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.	Next time
Spectrum Analyzer	MS2665C	ANRITSU	6200175476	12/30/04

6.4 Test Result of Bandwidth

Channel	802.11b	802.11g
01	9.60 MHz	16.64 MHz
06	9.56 MHz	16.60 MHz
11	9.68 MHz	16.60 MHz

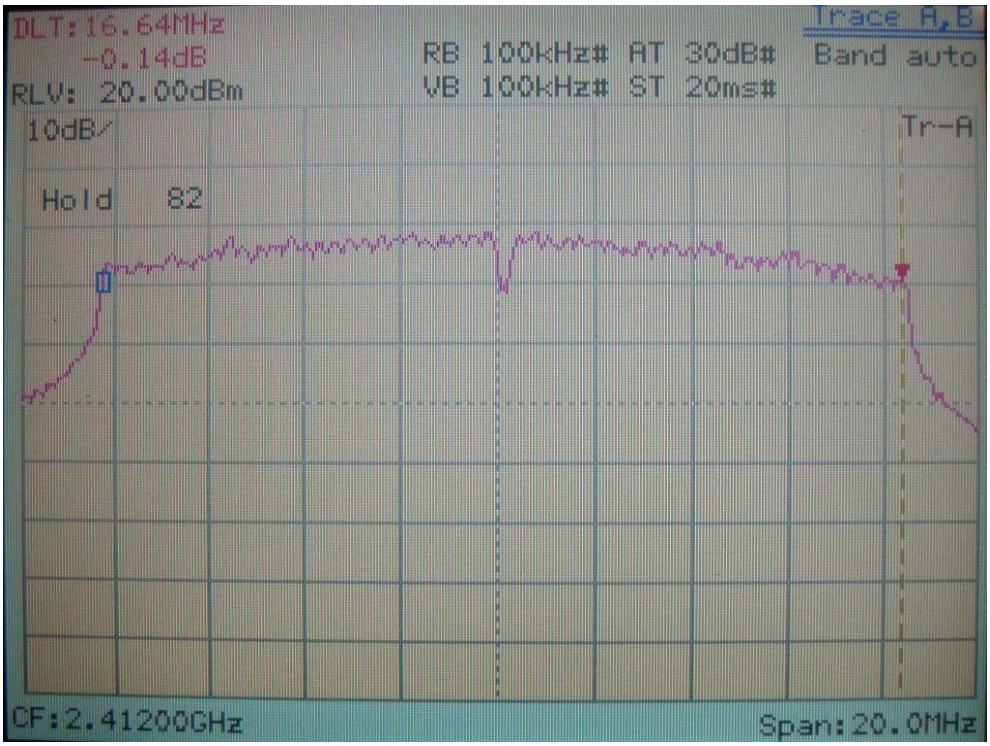
Note: 1. The data in the above table are summarizing the following attachment spectrum analyzer hard copy. According to the guidance, we'd made the measurement with the spectrum analyzer's resolution bandwidth *(RBW)=100kHz* and set the *span>>RBW*. The results show the measured 6dB bandwidth comply with the minimum 500kHz requirement.

2. The attachments show these on the following pages.

6dB Bandwidth of Channel 1 (The minimum 6dB BW at least 500kHz)

IEEE 802.11b

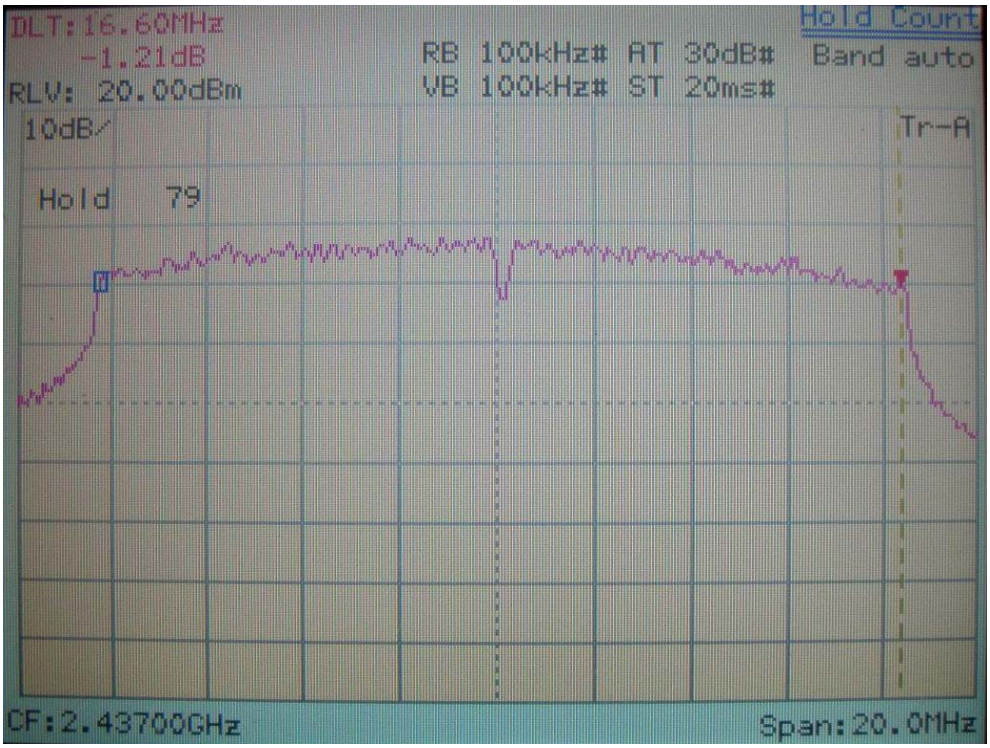
IEEE 802.11g



6dB Bandwidth of Channel 6 (The minimum 6dB BW at least 500kHz)

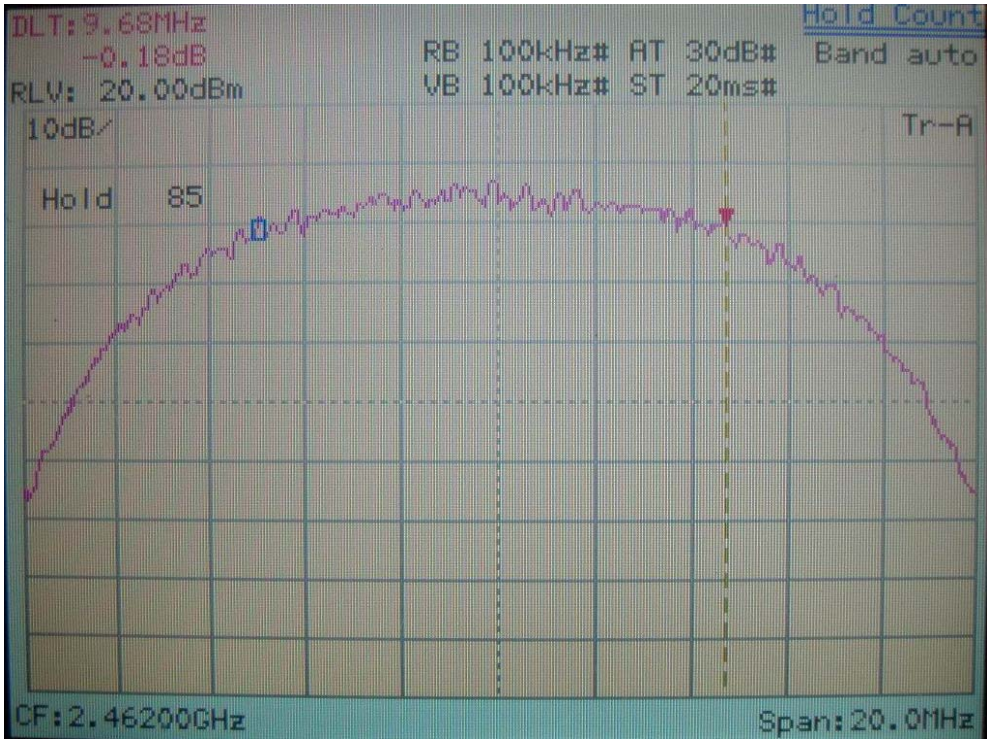
IEEE 802.11b

IEEE 802.11g

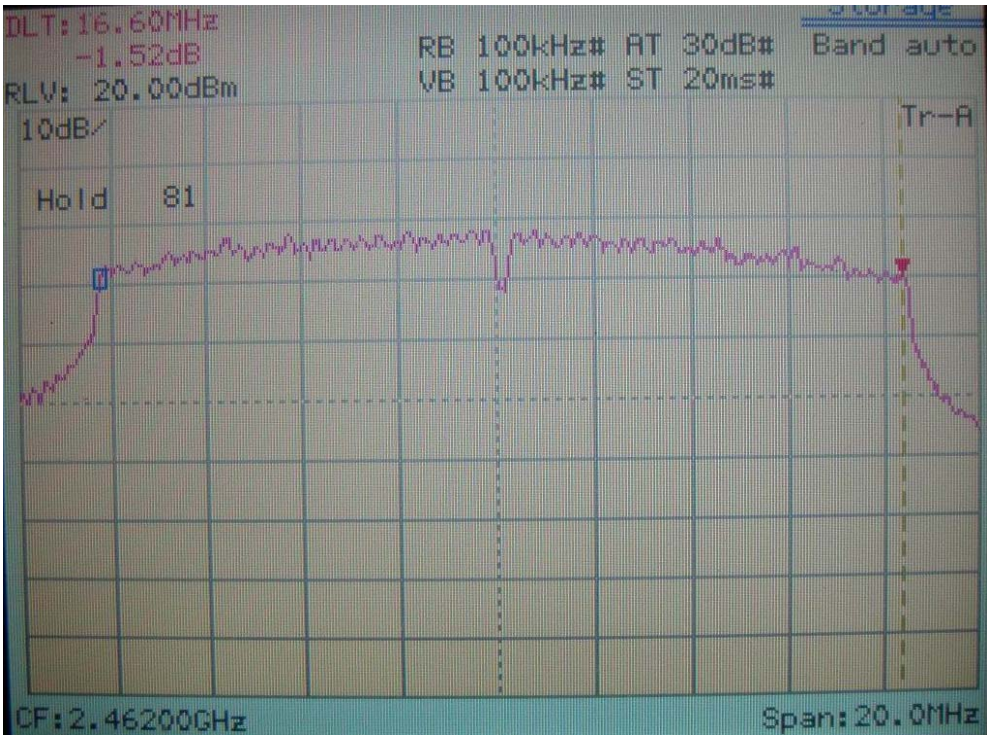


6dB Bandwidth of Channel 11 (The minimum 6dB BW at least 500kHz)

IEEE 802.11b

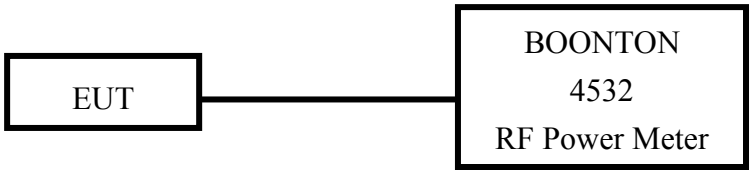


IEEE 802.11g



VII. Section 15.247(b): Power Output

7.1 Test Condition & Setup



1. The output of the transmitter is connected to the BOONTON RF Power Meter.
2. The calibration is performed before every test. The values of the output power of the EUT will shown in the dBm directly are the transmitter output peak power. Recording as follows.

7.2 List of Test Instruments

Instrument Name	Model	Brand	Serial No.	Next time
RF Power Meter	4532	BOONTON	117501	04/16/05
Peak Power Sensor	57340	BOONTON	2696	04/16/05

7.3 Test Result

Formula:
RF Output of EUT + |Cable Loss| = Output Peak Power

IEEE 802.11b

Channel	RF Output	Cable Loss	Output Peak Power	
	dBm	dBm	dBm	mW
CH 01	16.79	0.60	17.39	54.83
CH 06	16.65	0.60	17.25	53.09
CH 11	16.18	0.60	16.78	47.64

IEEE 802.11g

Channel	RF Output	Cable Loss	Output Peak Power	
	dBm	dBm	dBm	mW
CH 01	15.31	0.60	15.91	38.99
CH 06	14.96	0.60	15.56	35.97
CH 11	14.25	0.60	14.85	30.55

VIII. Section 15.247 (C): Spurious Emissions (Radiated)

8.1 Test Condition & Setup

We'd performed the test by the *radiated emission* skill: The EUT was placed in an anechoic chamber, and set the EUT transmitting continuously and scanned at 3-meter distance to determine its emission characteristics. The physical arrangement of the EUT was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude, directivity, and frequency. The exact system configuration, which produced the highest emissions was noted so it could be reproduced later during the final tests. For the measurement above 1GHz, according to the guidance we'd set the spectrum analyzer's 6dB bandwidth RBW to 1MHz.

This was done to ensure that the final measurements would demonstrate the worst-case interference potential of the EUT.

Final radiation measurements were made on a three-meter, 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 30 MHz to 1000 MHz using an Hewlett Packard 85460A EMI Receiver, SCHWARZECK whole range Small Biconical Antenna (Model No.: UBAA9114 & BBVU9135) is used to measure frequency from 30 MHz to 1GHz. The final test is used the HP 85460A spectrum and 8564E spectrum was examined from 1GHz to 25GHz using an Hewlett Packard Spectrum Analyzer, EMCO/HP Horn Antenna (Model 3115 / 84125-80008) for 1G - 25GHz.

At each frequency, 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.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. There are two spectrum analyzers use on this testing, HP 85460A for frequency 30MHz to 1000MHz, and 8564E for frequency 1GHz to 25GHz. No post-detector video filters were used in the test. The spectrum analyzer's 6dB bandwidth was set to 120KHz (spectrum was examined from 30 MHz to 1000 MHz), the spectrum analyzer's 6 dB bandwidth was set to 1 MHz (spectrum was examined from 1GHz to 25GHz) and the analyzer was operated in the maximum hold mode. There is a test condition applies in this test item, the test procedure description as the following:

Three channels were tested, one in the top (CH01), one in the middle (CH06) and the other in bottom (CH11). The setting up procedure is recorded on <1.3>

With the transmitter operating from a AC source and using the internal of EUT, radiates spurious emissions falling within the restricted bands of 15.209 were measured at operating frequencies corresponding to upper, middle and bottom channels in the 2400 ~ 2483.5 MHz band.

The actual field intensity in decibels referenced to 1 microvolt per meter (dBμV/m) is determined by algebraically adding the measured reading in dBμV, the antenna factor (dB), and cable loss (dB) at the appropriate frequency. Since the EUT was set to transmit continuously, no *duty cycle* is present.

For frequency between 30MHz to 1000MHz

FIa (dBuV/m) = FIr (dBμV) + Correction Factors

FIa : Actual Field Intensity

FIr : Reading of the Field Intensity

Correction Factors = Antenna Factor + (Cable Loss – Amplifier Gain) + Switching Box Loss

For frequency between 1GHz to 25GHz

FIa (dBμV/m) = FIr (dBμV) + Correction Factor

FIa : Actual Field Intensity

FIr : Reading of the Field Intensity

Correction Factors = Antenna Factor + (Cable Loss – Amplifier Gain) + Switching Box Loss

8.2 List of Test Instruments

Instrument Name	Model	Brand	Serial No.	Calibration Date Next time
EMI Receiver	8546A	HP	3520A00242	08/05/05
RF Filter Section	85460A	HP	3448A00217	08/05/05
Small Biconical Antenna	UBAA9114 & BBVU9135	SCHWARZECK	127	10/11/05
Pre-amplifier	PA1F	TRC	1FAC	05/20/05
Auto Switch Box (>30MHz)	ASB-01	TRC	9904-01	05/20/05
Coaxial Cable (Double shielded, 15 meter)	A30A30-0058-50FS-15M	JYEBAO	SMA-01	05/20/05
Coaxial Cable (1.1 meter)	A30A30-0058-50FS-1M	JYEBAO	SMA-02	05/20/05
Spectrum Analyzer	8564E	HP	3720A00840	08/13/05
Microwave Preamplifier	84125C	HP	US36433002	08/13/05
Horn Antenna	3115	EMCO	9104-3668	12/18/04
Standard Guide Horn Antenna	84125-80008	HP	18-26.5GHz	12/18/04
Standard Guide Horn Antenna	84125-80001	HP	26.5-40GHz	12/18/04
Horn Antenna	1196E (3115)	HP (EMCO)	9704-5178	12/12/04
Pre-amplifier	PA2F	TRC	2F1GZ	03/20/05
Coaxial Cable (3 miter)	A30A30-0058-50FST118	JYEBAO	MSA-05	03/20/05
Coaxial Cable (1 meter)	A30A30-0058-50FST118	JYEBAO	MSA-04	03/20/05

8.3 Test Result of Spurious Radiated Emissions

The highest peak values of radiated emissions form the EUT at various antenna heights, antenna polarizations, EUT orientation, etc. are recorded on the following.

Test Conditions: Temperature : 25 ° C Humidity : 73 % RH

Test mode: Standby mode for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table ( )	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
198.54	36.91	1.00	340	-3.79	33.12	43.50	-10.38
251.28	43.79	1.00	287	-4.04	39.75	46.00	-6.25
320.39	45.11	1.00	161	-3.31	41.80	46.00	-4.20
350.71	40.83	1.00	153	-2.71	38.12	46.00	-7.88
799.94	25.32	1.00	270	11.61	36.93	46.00	-9.07
875.72	25.09	1.00	229	13.96	39.05	46.00	-6.95

Test mode: Standby mode for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table ( )	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
39.09	32.58	1.00	183	5.91	38.49	40.00	-1.51
65.16	35.71	1.00	0	1.77	37.48	40.00	-2.52
86.38	36.94	1.00	277	-0.21	36.73	40.00	-3.27
143.97	41.19	1.00	180	-2.97	38.22	43.50	-5.28
251.28	47.54	1.00	59	-4.04	43.50	46.00	-2.50
800.54	30.23	1.00	287	11.63	41.86	46.00	-4.14

Note:

1. Margin = Amplitude – limit, *if margin is minus means under limit.*
2. Corrected Amplitude = Reading Amplitude + Correction Factors
3. Correction factor = Antenna factor + (Cable Loss – Amplitude gain) + Switching Box Loss

Test mode: Standby mode for 1GHz to 25GHz [Horizontal]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
3833.33	1.00	283	31.24	---	11.73	42.97	---	73.96	53.96	-10.99
5682.08	1.00	28	27.57	---	17.39	44.96	---	73.96	53.96	-9.00
9004.17	1.00	99	24.08	---	23.67	47.75	---	73.96	53.96	-6.21
22912.29	1.00	171	46.16	---	3.55	49.71	---	73.96	53.96	-4.25
24835.42	1.00	49	47.49	---	2.27	49.76	---	73.96	53.96	-4.20

Test mode: Standby mode for 1GHz to 25GHz [Vertical]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
3394.17	1.00	336	32.24	---	10.15	42.39	---	73.96	53.96	-11.57
6900.42	1.00	162	25.24	---	20.24	45.48	---	73.96	53.96	-8.48
8047.92	1.00	224	24.91	---	22.51	47.42	---	73.96	53.96	-6.54
12942.50	1.00	338	29.57	---	20.56	50.13	---	73.96	53.96	-3.83
19728.33	1.00	258	45.66	---	1.86	47.52	---	73.96	53.96	-6.44
23043.33	1.00	150	46.99	---	3.66	50.65	---	73.96	53.96	-3.31

Note:

1. Margin = Corrected - Limit.
2. The EUT utilizes a *permanently attached antenna*. In addition the spurious RF radiated emissions levels do comply with the *20dBc limit* both at its bandedges and other spurious emissions.
3. As stated in Section 15.35(b), for any frequencies above 1000MHz, radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. As the results of our test, the peak amplitudes are already below the FCC limit. Thus the average amplitudes of the rest are omitted.

Test mode: IEEE 802.11b CH01 for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
251.28	44.07	1.00	265	-4.04	40.03	46.00	-5.97
320.39	45.50	1.00	160	-3.31	42.19	46.00	-3.81
350.71	41.34	1.00	139	-2.71	38.63	46.00	-7.37
501.06	32.31	1.00	293	2.94	35.25	46.00	-10.75
800.54	26.04	1.00	282	11.63	37.67	46.00	-8.33
875.72	24.81	1.00	128	13.96	38.77	46.00	-7.23

Test mode: IEEE 802.11b CH01 for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
39.70	32.28	1.00	124	5.83	38.11	40.00	-1.89
65.16	34.89	1.00	307	1.77	36.66	40.00	-3.34
86.99	37.52	1.00	269	-0.25	37.27	40.00	-2.73
148.82	41.93	1.00	195	-3.11	38.82	43.50	-4.68
251.28	48.37	1.00	35	-4.04	44.33	46.00	-1.67
799.94	31.03	1.00	282	11.61	42.64	46.00	-3.36

Test mode: IEEE 802.11b CH01 for 1GHz to 25GHz [Horizontal]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2239.58	1.00	154	41.83	---	8.76	50.59	---	73.96	53.96	-3.37
4823.12	1.00	299	48.44	---	3.76	52.20	---	73.96	53.96	-1.76
7233.75	1.00	29	40.44	---	10.07	50.51	---	73.96	53.96	-3.45
9650.42	1.00	199	34.77	---	11.47	46.24	---	73.96	53.96	-7.72
12061.04	1.00	92	37.77	---	9.81	47.58	---	73.96	53.96	-6.38
21708.12	1.00	218	45.49	---	2.87	48.36	---	73.96	53.96	-5.60

Test mode: IEEE 802.11b CH01 for 1GHz to 25GHz [Vertical]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2037.50	1.00	321	39.33	---	8.20	47.53	---	73.96	53.96	-6.43
2237.50	1.00	143	40.17	---	8.75	48.92	---	73.96	53.96	-5.04
2308.33	1.00	56	41.00	---	8.95	49.95	---	73.96	53.96	-4.01
2559.96	1.00	191	45.17	42.83	9.60	54.77	52.43	73.96	53.96	-1.53
4823.12	1.00	298	47.60	---	3.76	51.36	---	73.96	53.96	-2.60
7233.75	1.00	131	39.94	---	10.07	50.01	---	73.96	53.96	-3.95
12061.04	1.00	328	38.10	---	9.81	47.91	---	73.96	53.96	-6.05
24120.00	1.00	221	45.16	---	3.40	48.56	---	73.96	53.96	-5.40

Test mode: IEEE 802.11b CH06 for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
251.28	45.14	1.00	273	-4.04	41.10	46.00	-4.90
320.39	45.13	1.00	163	-3.31	41.82	46.00	-4.18
350.71	40.74	1.00	122	-2.71	38.03	46.00	-7.97
501.66	32.82	1.00	293	2.97	35.79	46.00	-10.21
800.54	25.34	1.00	264	11.63	36.97	46.00	-9.03
875.72	24.97	1.00	128	13.96	38.93	46.00	-7.07

Test mode: IEEE 802.11b CH06 for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
39.70	32.68	1.00	204	5.83	38.51	40.00	-1.49
65.16	34.49	1.00	351	1.77	36.26	40.00	-3.74
86.38	36.34	1.00	283	-0.21	36.13	40.00	-3.87
143.97	41.81	1.00	195	-2.97	38.84	43.50	-4.66
251.28	47.47	1.00	21	-4.04	43.43	46.00	-2.57
799.94	30.47	1.00	279	11.61	42.08	46.00	-3.92

Test mode: IEEE 802.11b CH06 for 1GHz to 25GHz [Horizontal]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2239.58	1.00	128	41.17	---	8.76	49.93	---	73.96	53.96	-4.03
4871.46	1.00	104	45.60	---	3.95	49.55	---	73.96	53.96	-4.41
7312.29	1.00	315	38.11	---	10.30	48.41	---	73.96	53.96	-5.55
9747.08	1.00	170	34.27	---	11.89	46.16	---	73.96	53.96	-7.80
12187.92	1.00	194	37.94	---	9.74	47.68	---	73.96	53.96	-6.28
21934.79	1.00	144	46.16	---	3.09	49.25	---	73.96	53.96	-4.71
24371.46	1.00	150	45.16	---	3.26	48.42	---	73.96	53.96	-5.54

Test mode: IEEE 802.11b CH06 for 1GHz to 25GHz [Vertical]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2062.50	1.00	92	38.66	---	8.27	46.93	---	73.96	53.96	-7.03
2239.58	1.00	187	39.67	---	8.76	48.43	---	73.96	53.96	-5.53
2559.96	1.00	264	44.50	42.83	9.60	54.10	52.43	73.96	53.96	-1.53
4871.46	1.00	235	45.94	---	3.95	49.89	---	73.96	53.96	-4.07
7312.29	1.00	142	36.61	---	10.30	46.91	---	73.96	53.96	-7.05
9747.08	1.00	38	34.94	---	11.89	46.83	---	73.96	53.96	-7.13
12187.92	1.00	0	39.44	---	9.74	49.18	---	73.96	53.96	-4.78
21934.79	1.00	65	45.66	---	3.09	48.75	---	73.96	53.96	-5.21

Test mode: IEEE 802.11b CH11 for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
251.28	45.39	1.00	296	-4.04	41.35	46.00	-4.65
300.39	41.78	1.00	305	-3.70	38.08	46.00	-7.92
320.39	45.01	1.00	164	-3.31	41.70	46.00	-4.30
350.71	41.18	1.00	141	-2.71	38.47	46.00	-7.53
800.54	25.21	1.00	305	11.63	36.84	46.00	-9.16
875.72	23.98	1.00	174	13.96	37.94	46.00	-8.06

Test mode: IEEE 802.11b CH11 for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
39.70	31.65	1.00	283	5.83	37.48	40.00	-2.52
63.95	34.53	1.00	319	1.87	36.40	40.00	-3.60
86.38	36.99	1.00	286	-0.21	36.78	40.00	-3.22
148.82	42.25	1.00	189	-3.11	39.14	43.50	-4.36
251.28	47.33	1.00	50	-4.04	43.29	46.00	-2.71
799.94	30.33	1.00	275	11.61	41.94	46.00	-4.06

Test mode: IEEE 802.11b CH11 for 1GHz to 25GHz [Horizontal]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
1629.17	1.00	252	36.33	---	13.88	50.21	---	73.96	53.96	-3.75
2087.50	1.00	136	37.83	---	8.34	46.17	---	73.96	53.96	-7.79
2237.50	1.00	153	40.34	---	8.75	49.09	---	73.96	53.96	-4.87
2397.92	1.00	15	38.17	---	9.20	47.37	---	73.96	53.96	-6.59
9849.79	1.00	55	34.78	---	11.93	46.71	---	73.96	53.96	-7.25
12308.75	1.00	30	37.27	---	9.56	46.83	---	73.96	53.96	-7.13
24619.37	1.00	93	46.32	---	3.01	49.33	---	73.96	53.96	-4.63

Test mode: IEEE 802.11b CH11 for 1GHz to 25GHz [Vertical]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2087.50	1.00	24	39.66	---	8.34	48.00	---	73.96	53.96	-5.96
2239.58	1.00	198	40.17	---	8.76	48.93	---	73.96	53.96	-5.03
2397.92	1.00	206	43.67	---	9.20	52.87	---	73.96	53.96	-1.09
2504.17	1.00	206	42.66	---	9.50	52.16	---	73.96	53.96	-1.80
2559.96	1.00	127	44.83	42.83	9.60	54.43	52.43	73.96	53.96	-1.53
9849.79	1.00	338	34.94	---	11.93	46.87	---	73.96	53.96	-7.09
12308.75	1.00	248	36.44	---	9.56	46.00	---	73.96	53.96	-7.96
24619.37	1.00	240	46.16	---	3.01	49.17	---	73.96	53.96	-4.79

Test mode: IEEE 802.11g CH01 for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
168.22	37.18	1.00	111	-3.73	33.45	43.50	-10.05
251.28	44.56	1.00	258	-4.04	40.52	46.00	-5.48
320.39	45.06	1.00	161	-3.31	41.75	46.00	-4.25
350.71	40.97	1.00	150	-2.71	38.26	46.00	-7.74
800.54	23.82	1.00	296	11.63	35.45	46.00	-10.55
875.72	24.09	1.00	111	13.96	38.05	46.00	-7.95

Test mode: IEEE 802.11g CH01 for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
39.70	32.02	1.00	218	5.83	37.85	40.00	-2.15
65.16	35.66	1.00	277	1.77	37.43	40.00	-2.57
85.78	36.61	1.00	313	-0.17	36.44	40.00	-3.56
144.58	41.88	1.00	201	-2.98	38.90	43.50	-4.60
251.28	48.01	1.00	35	-4.04	43.97	46.00	-2.03
799.94	31.05	1.00	279	11.61	42.66	46.00	-3.34

Test mode: IEEE 802.11g CH01 for 1GHz to 25GHz [Horizontal]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
1827.08	1.00	340	38.33	---	10.79	49.12	---	73.96	53.96	-4.84
2037.50	1.00	144	38.66	---	8.20	46.86	---	73.96	53.96	-7.10
2239.58	1.00	154	42.17	---	8.76	50.93	---	73.96	53.96	-3.03
9560.42	1.00	94	34.44	---	11.47	45.91	---	73.96	53.96	-8.05
12061.04	1.00	193	37.77	---	9.81	47.58	---	73.96	53.96	-6.38
21708.12	1.00	238	46.16	---	2.87	49.03	---	73.96	53.96	-4.93

Test mode: IEEE 802.11g CH01 for 1GHz to 25GHz [Vertical]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2037.50	1.00	0	38.50	---	8.20	46.70	---	73.96	53.96	-7.26
2239.58	1.00	189	40.83	---	8.76	49.59	---	73.96	53.96	-4.37
2559.97	1.00	268	46.33	43.67	9.60	55.93	53.27	73.96	53.96	-0.69
7233.75	1.00	139	36.11	---	10.07	46.18	---	73.96	53.96	-7.78
9650.42	1.00	286	35.44	---	11.47	46.91	---	73.96	53.96	-7.05
12061.04	1.00	202	37.60	---	9.81	47.41	---	73.96	53.96	-6.55
24120.00	1.00	241	45.16	---	3.40	48.56	---	73.96	53.96	-5.40

Test mode: IEEE 802.11g CH06 for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
122.15	36.27	1.00	310	-2.25	34.02	43.50	-9.48
251.28	43.88	1.00	269	-4.04	39.84	46.00	-6.16
320.39	44.97	1.00	164	-3.31	41.66	46.00	-4.34
351.31	41.46	1.00	135	-2.68	38.78	46.00	-7.22
501.66	33.03	1.00	147	2.97	36.00	46.00	-10.00
875.72	24.05	1.00	131	13.96	38.01	46.00	-7.99

Test mode: IEEE 802.11g CH06 for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
39.09	31.32	1.00	224	5.91	37.23	40.00	-2.77
65.16	36.21	1.00	9	1.77	37.98	40.00	-2.02
86.38	37.11	1.00	274	-0.21	36.90	40.00	-3.10
145.79	41.68	1.00	204	-3.02	38.66	43.50	-4.84
251.28	48.49	1.00	35	-4.04	44.45	46.00	-1.55
799.94	30.93	1.00	287	11.61	42.54	46.00	-3.46

Test mode: IEEE 802.11g CH06 for 1GHz to 25GHz [Horizontal]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
1954.17	1.00	191	37.33	---	8.81	46.14	---	73.96	53.96	-7.82
2239.58	1.00	172	41.50	---	8.76	50.26	---	73.96	53.96	-3.70
7312.29	1.00	350	35.11	---	10.30	45.41	---	73.96	53.96	-8.55
9747.08	1.00	224	34.94	---	11.89	46.83	---	73.96	53.96	-7.13
12187.92	1.00	345	39.44	---	9.74	49.18	---	73.96	53.96	-4.78
21934.79	1.00	21	45.82	---	3.09	48.91	---	73.96	53.96	-5.05
24371.46	1.00	79	45.83	---	3.26	49.09	---	73.96	53.96	-4.87

Test mode: IEEE 802.11g CH06 for 1GHz to 25GHz [Vertical]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2318.75	1.00	125	41.17	---	8.98	50.15	---	73.96	53.96	-3.81
2397.92	1.00	295	43.84	---	9.20	53.04	---	73.96	53.96	-0.92
2559.96	1.00	265	45.17	42.33	9.60	54.77	51.93	73.96	53.96	-2.03
9747.08	1.00	42	34.44	---	11.89	46.33	---	73.96	53.96	-7.63
12187.92	1.00	283	39.27	---	9.74	49.01	---	73.96	53.96	-4.95
21934.79	1.00	126	46.32	---	3.09	49.41	---	73.96	53.96	-4.55
24371.46	1.00	322	45.16	---	3.26	48.42	---	73.96	53.96	-5.54

Test mode: IEEE 802.11g CH11 for 30MHz to 1GHz [Horizontal]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
251.89	45.09	1.00	307	-4.05	41.04	46.00	-4.96
320.39	44.67	1.00	206	-3.31	41.36	46.00	-4.64
351.31	41.53	1.00	194	-2.68	38.85	46.00	-7.15
501.66	32.05	1.00	202	2.97	35.02	46.00	-10.98
800.54	24.09	1.00	299	11.63	35.72	46.00	-10.28
875.72	24.12	1.00	128	13.96	38.08	46.00	-7.92

Test mode: IEEE 802.11g CH11 for 30MHz to 1GHz [Vertical]

Radiated Emission				Correction Factors	Corrected Amplitude	Class B (3 m)	
Frequency (MHz)	Amplitude (dBμV)	Ant. H. (m)	Table (°)	(dB)	(dBμV/m)	Limit (dBμV/m)	Margin (dB)
39.09	31.39	1.00	187	5.91	37.30	40.00	-2.70
65.16	36.28	1.00	340	1.77	38.05	40.00	-1.95
86.38	37.52	1.00	275	-0.21	37.31	40.00	-2.69
145.79	41.89	1.00	161	-3.02	38.87	43.50	-4.63
251.28	48.32	1.00	35	-4.04	44.28	46.00	-1.72
800.54	31.33	1.00	281	11.63	42.96	46.00	-3.04

Test mode: IEEE 802.11g CH11 for 1GHz to 25GHz [Horizontal]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2239.58	1.00	176	41.67	---	8.76	50.43	---	73.96	53.96	-3.53
2400.00	1.00	80	38.17	---	9.21	47.38	---	73.96	53.96	-6.58
7384.79	1.00	151	34.78	---	10.42	45.20	---	73.96	53.96	-8.76
9849.79	1.00	317	35.44	---	11.93	47.37	---	73.96	53.96	-6.59
12308.75	1.00	0	36.61	---	9.56	46.17	---	73.96	53.96	-7.79
22157.92	1.00	207	44.82	---	3.25	48.07	---	73.96	53.96	-5.89
24619.37	1.00	200	45.66	---	3.01	48.67	---	73.96	53.96	-5.29

Test mode: IEEE 802.11g CH11 for 1GHz to 25GHz [Vertical]

Frequency	*Ant. H.*	*Table*	*Amplitude Peak / Ave.*		*Correction Factor*	*Corrected Amplitude Peak / Ave.*		*Limit Peak / Ave.*		*Margin*
MHz	*m*	*degree*	*dBμV*		*dB/m*	*dBμV/m*		*dBμV/m*		*dB*
2087.50	1.00	0	39.00	---	8.34	47.34	---	73.96	53.96	-6.62
2239.58	1.00	186	40.00	---	8.76	48.76	---	73.96	53.96	-5.20
2397.92	1.00	227	43.84	---	9.20	53.04	---	73.96	53.96	-0.92
2559.95	1.00	114	44.67	42.17	9.60	54.27	51.77	73.96	53.96	-2.19
9849.79	1.00	261	35.11	---	11.93	47.04	---	73.96	53.96	-6.92
12308.75	1.00	355	37.61	---	9.56	47.17	---	73.96	53.96	-6.79
24619.37	1.00	124	46.82	---	3.01	49.83	---	73.96	53.96	-4.13

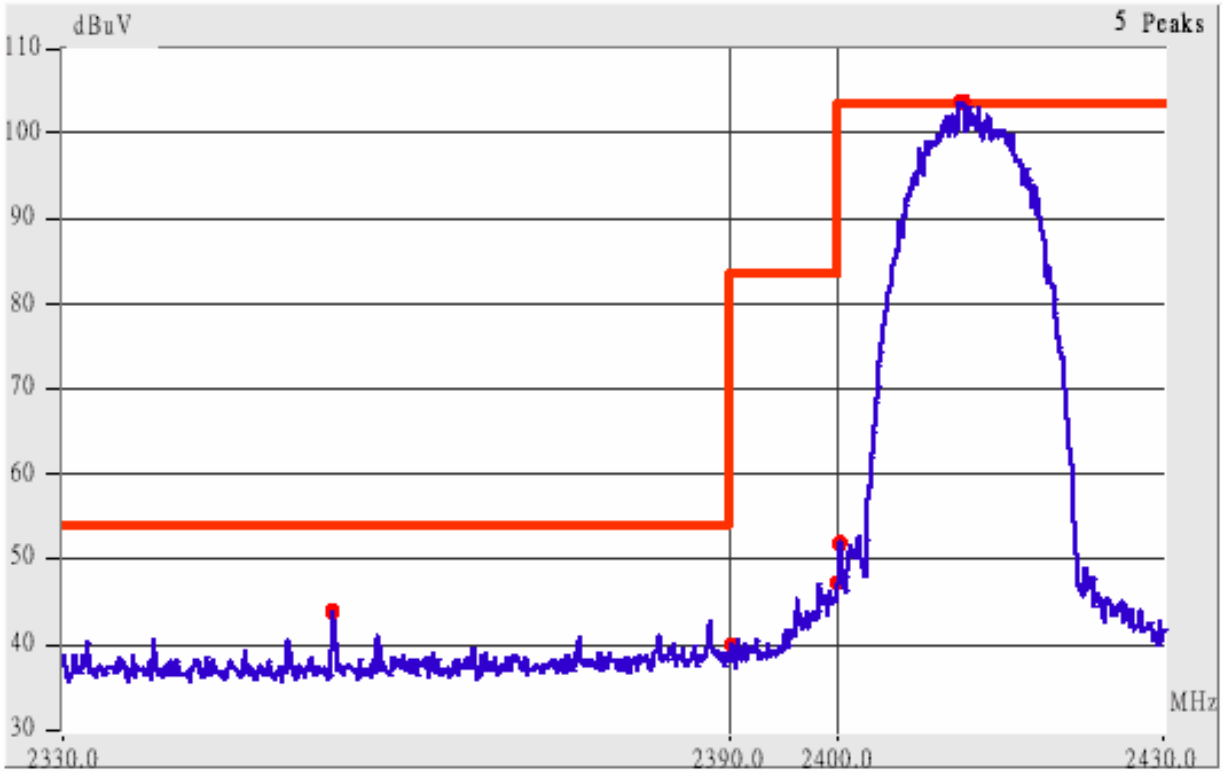
8.4 Test Result of the Bandedge

If any 100 kHz bandwidth outside these frequency bands, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be either *at least 20 dB below that in any 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified id §15.209(a)*,

We perform this section by the *radiated manner*, the RBW is set to 100kHz and VBW>RBW. We'd made the observation *up to 10th harmonics and the criterion is all the harmonic/spurious emissions must be 20dB below the highest emission level measured.* If the emissions fall in the restricted bands stated in the Part15.205(a) must also *comply with the radiated emission limits specified in Part15.209(a). (Peak mode: RBW=VBW=1MHz, Average mode: RBW=1MHz; VBW=10Hz)*

The following pages show our observations referring to the channel 1 and 11 respectively.
Test Condition & Setup: same as < 8.1 >

Channel 1 of IEEE 802.11b

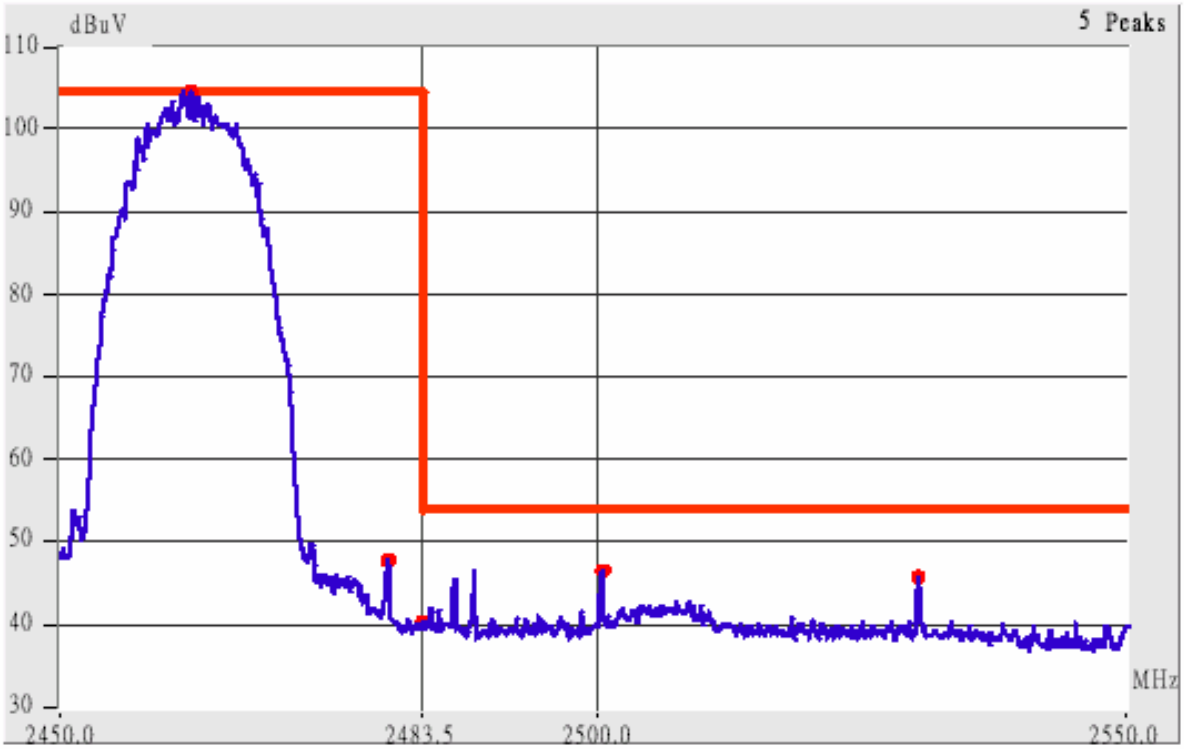


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 1.

1. The lobe left by the fundamental side is already 20dB below the highest emission level.
2. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below.

Radiated Emission					*Corrected Amplitude (dBμV/m)*		*Class B (3m)*		
Frequency (MHz)	*Ant. P.*	*Ant. H. (m)*	*Table ( )*	*Factors (dB)*	*Peak*	*Average*	*Limit (dBμV/m)* *Peak*	*Ave.*	*Margin (dB)*
2350.37	Hor	1.00	351	9.07	46.07	---	74.00	53.96	-7.89
2390.02	Hor	1.00	58	9.18	43.85	---	74.00	53.96	-10.11
2375.72	Ver	1.00	198	9.14	50.48	---	74.00	53.96	-3.48
2390.07	Ver	1.00	216	9.18	49.85	---	74.00	53.96	-4.11

Channel 11 of IEEE 802.11b

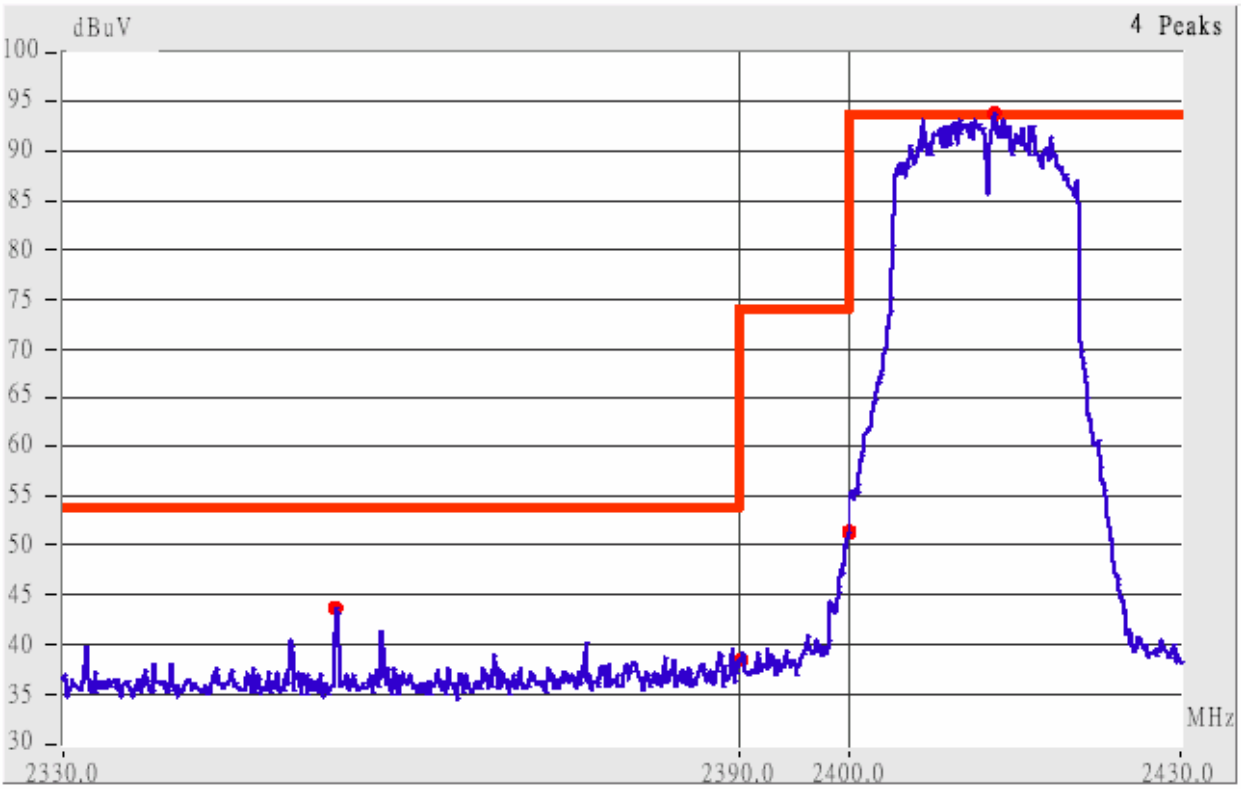


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 11.

3. The lobe right by the fundamental side is already 20dB below the highest emission level.
4. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below

Radiated Emission					*Corrected Amplitude (dBμV/m)*		*Class B (3m)*		
Frequency (MHz)	*Ant. P.*	*Ant. H. (m)*	*Table ( )*	*Factors (dB)*	*Peak*	*Average*	*Limit (dBμV/m)* *Peak*	*Ave.*	*Margin (dB)*
2487.58	Hor	1.00	325	9.46	45.96	---	74.00	53.96	-8.00
2506.13	Hor	1.00	302	9.50	46.67	---	74.00	53.96	-7.29
2483.50	Ver	1.00	321	9.44	49.44	---	74.00	53.96	-4.52
2488.22	Ver	1.00	308	9.46	52.79	---	74.00	53.96	-1.17
2500.01	Ver	1.00	309	9.49	51.49	---	74.00	53.96	-2.47
2508.18	Ver	1.00	309	9.51	53.01	---	74.00	53.96	-0.95

Channel 1 of IEEE 802.11g

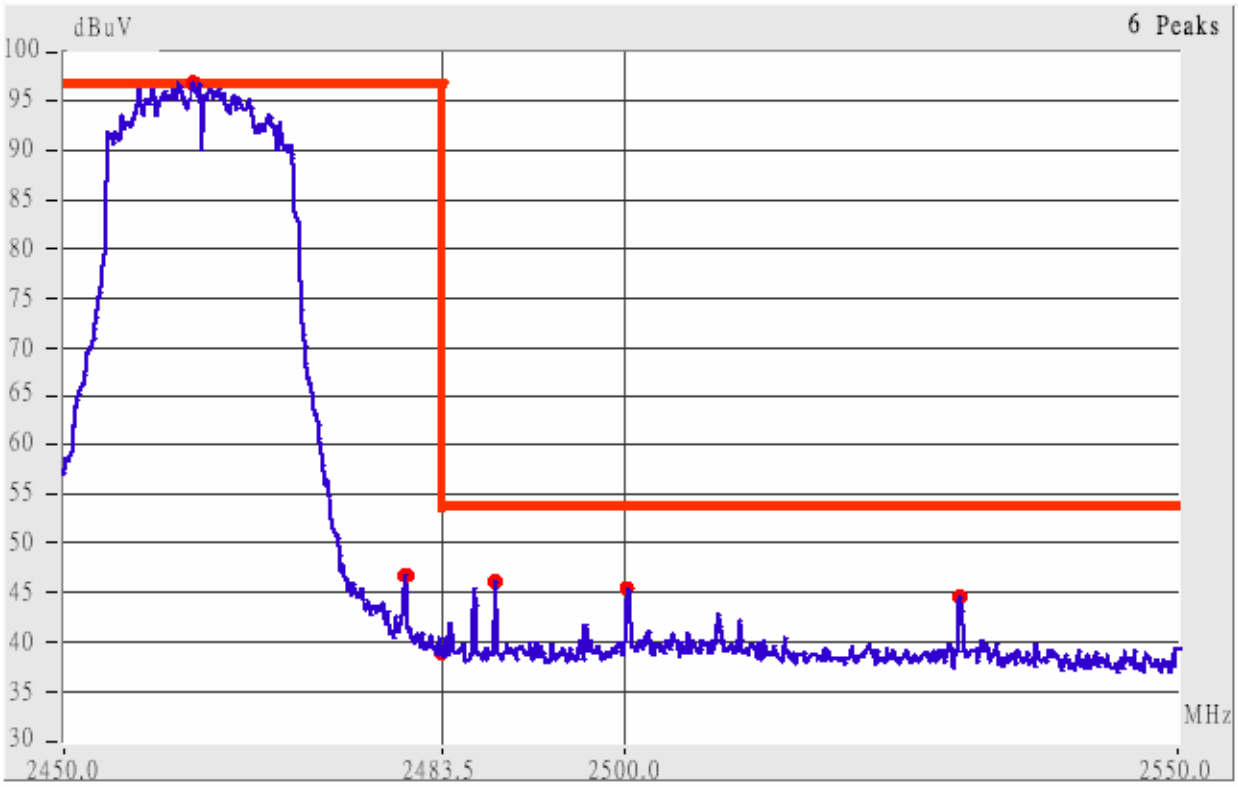


This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 1.

5. The lobe left by the fundamental side is already 20dB below the highest emission level.
6. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below.

Radiated Emission					*Corrected Amplitude (dBμV/m)*		*Class B (3m)*		
Frequency (MHz)	*Ant. P.*	*Ant. H. (m)*	*Table ( )*	*Factors (dB)*	*Peak*	*Average*	*Limit (dBμV/m)* *Peak*	*Ave.*	*Margin (dB)*
2354.05	Hor	1.00	99	9.08	45.91	---	74.00	53.96	-8.05
2390.02	Hor	1.00	87	9.18	44.02	---	74.00	53.96	-9.94
2354.00	Ver	1.00	306	9.08	51.41	---	74.00	53.96	-2.55
2390.02	Ver	1.00	191	9.18	49.18	---	74.00	53.96	-4.78

Channel 11 of IEEE 802.11g



This is the hard copy of our bandedge measurement generated by our bandedge testing program. The plot shown above is the bandedge of channel 11.

7. The lobe right by the fundamental side is already 20dB below the highest emission level.
8. The emissions recorded in the restricted band is do comply with the Part 15.209(a) – as below

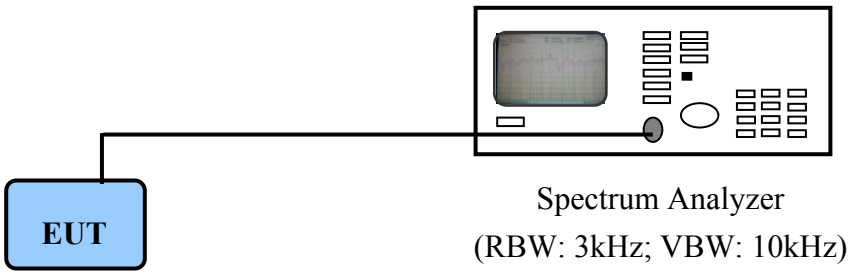
Radiated Emission					*Corrected Amplitude (dBμV/m)*		*Class B (3m)*		
Frequency (MHz)	*Ant. P.*	*Ant. H. (m)*	*Table ( )*	*Factors (dB)*	*Peak*	*Average*	*Limit (dBμV/m)* *Peak*	*Ave.*	*Margin (dB)*
2487.58	Hor	1.00	117	9.46	46.46	---	74.00	53.96	-7.50
2500.07	Hor	1.00	169	9.49	45.66	---	74.00	53.96	-8.30
2529.93	Hor	1.00	38	9.55	46.88	---	74.00	53.96	-7.08
2483.50	Ver	1.00	316	9.44	49.28	---	74.00	53.96	-4.68
2487.76	Ver	1.00	330	9.46	52.46	---	74.00	53.96	-1.50
2500.12	Ver	1.00	315	9.49	52.66	---	74.00	53.96	-1.30
2529.82	Ver	1.00	34	9.55	51.55	---	74.00	53.96	-2.41

IX. Section 15.247(d): Power Spectral Density

9.1 Test Condition & Setup

The tests below are running with the EUT transmitter set at high power in TDD mode. The EUT is needed to force selection of output power level and channel number. While testing, the EUT was set to transmit continuously and to be tested by the contact manner with the spectrum analyzer.

9.2 Test Instruments Configuration



P.S.: PC to control the EUT at maximal power output and channel Number and set antenna kit

9.3 List of Test Instruments

Instrument Name	Model No.	Brand	Serial No.	Next time
Spectrum Analyzer	MS2665C	ANRITSU	6200175476	12/30/04

9.4 Test Result of Power spectral density

The following table shows a summary of the test results of the Power Spectral Density.

IEEE 802.11b

Channel	*Ppr (dBm)*	*Cable Loss (dB)*	*Ppq (dBm)*	*Limit (dB)*	*Margin (dB)*
CH 01	-6.17	0.60	-5.57	8.00	-13.57
CH 06	-5.95	0.60	-5.35	8.00	-13.35
CH 11	-7.50	0.60	-6.90	8.00	-14.90

IEEE 802.11g

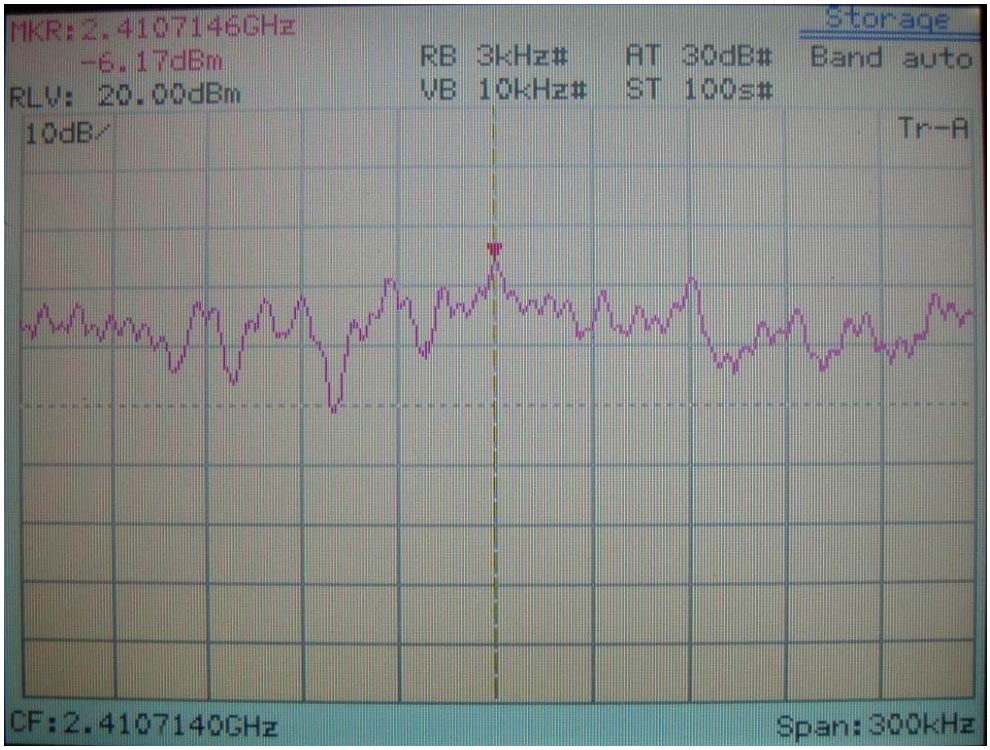
Channel	*Ppr (dBm)*	*Cable Loss (dB)*	*Ppq (dBm)*	*Limit (dB)*	*Margin (dB)*
CH 01	-15.21	0.60	-14.61	8.00	-22.61
CH 06	-14.67	0.60	-14.07	8.00	-22.07
CH 11	-14.02	0.60	-13.42	8.00	-21.42

Note:

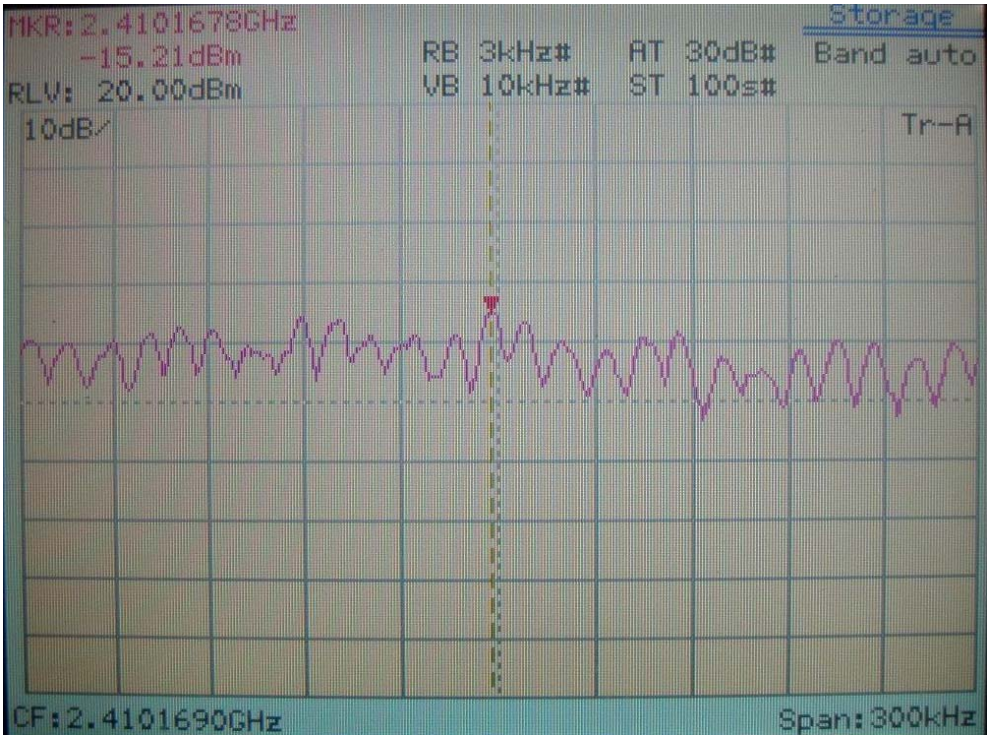
1. The following pages show the results of spectrum reading.
2. Ppr: spectrum read power density (using peak search mode),
   Ppq: actual peak power density in the spread spectrum band.
3. Ppq = Ppr + |Cable Loss|

Power Spectral Density Channel 01

IEEE 802.11b



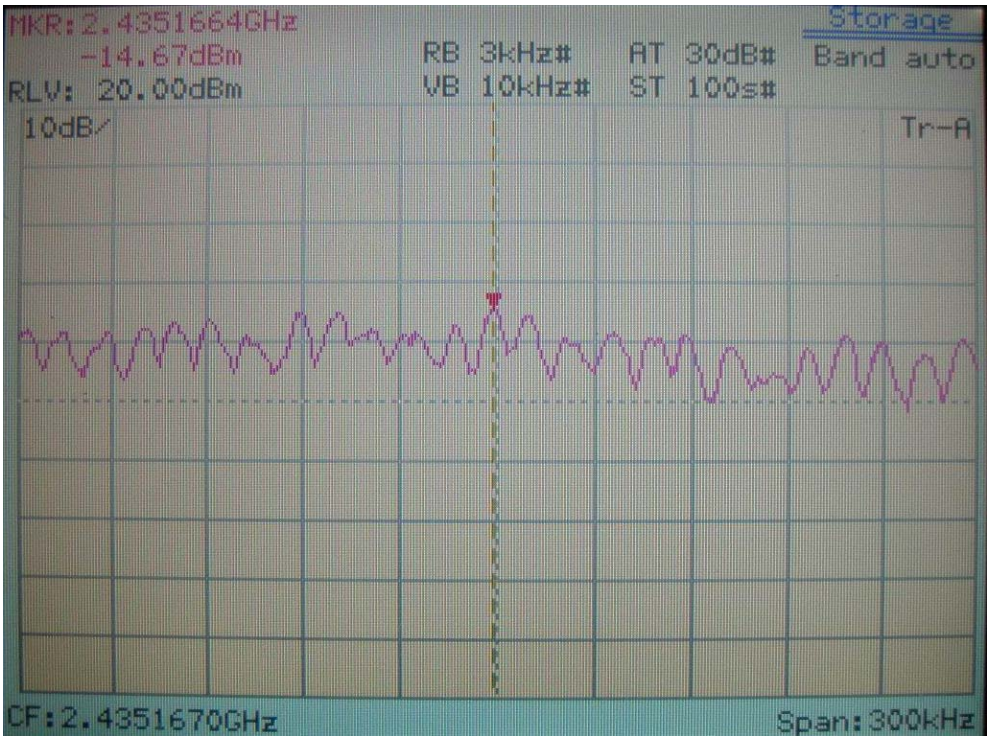
IEEE 802.11g



Power Spectral Density Channel 06

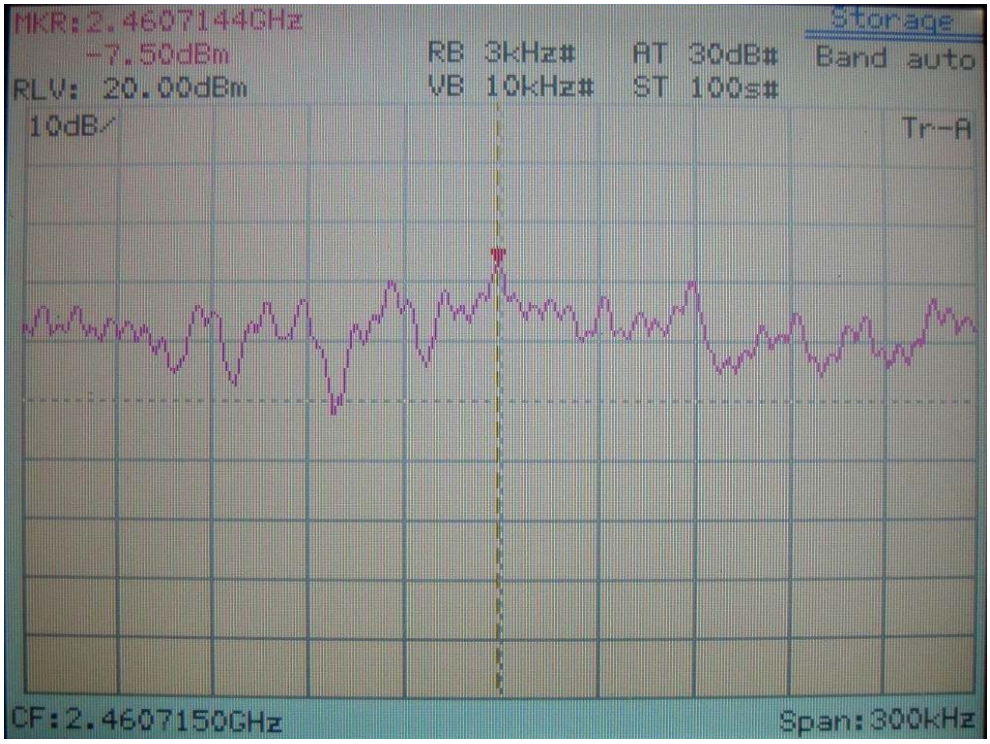
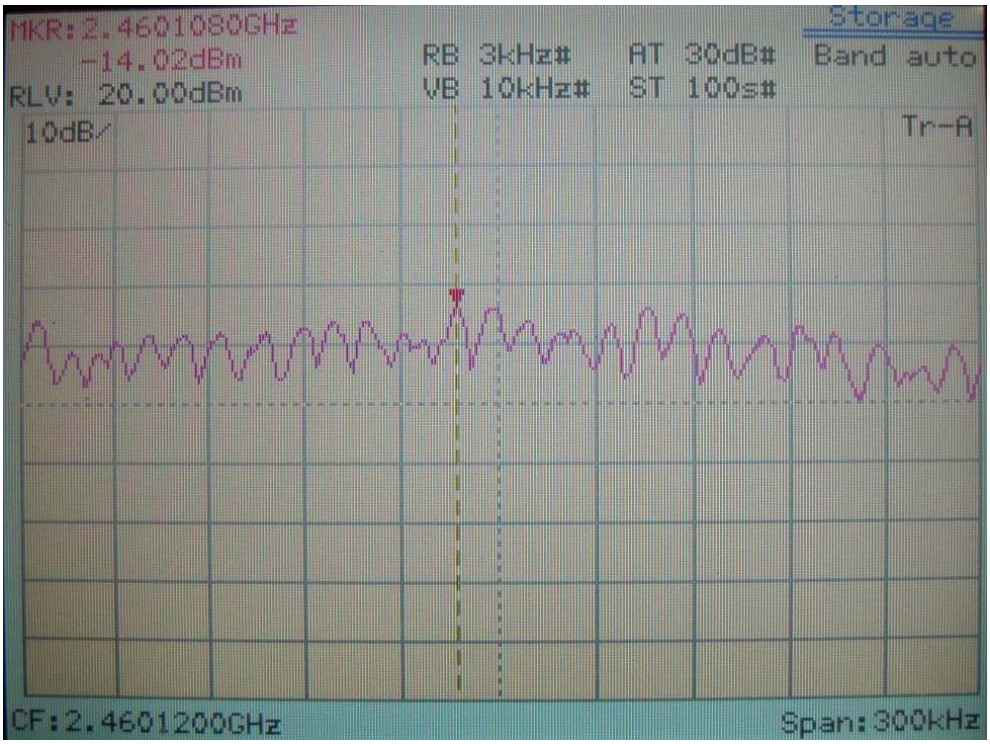
IEEE 802.11b

IEEE 802.11g



Power Spectral Density Channel 11

IEEE 802.11b



IEEE 802.11g