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Produkte
Products

Prüfbericht - Nr.: *Test Report No.:*	**12606802 001**	**Seite 1 von 81** *Page 1 of 81*
Auftraggeber: *Client:*	**Mitsumi Electric Co Ltd** 1601, Sakai, Atsugi-shi. Kanagawa-ken 243, Japan	
Gegenstand der Prüfung: *Test item:*	**Wireless LAN Module**	
Bezeichnung: *Identification:*	**DWM-W028**	**Serien-Nr.:** *Serial No.:* **Engineering sample**
Wareneingangs-Nr.: *Receipt No.:*	**PT213099091-1**	**Eingangsdatum:** *Date of receipt:* **2010-04-05**
Prüfort: *Testing location:*	**TÜV Rheinland Japan Ltd. - Global Technology Assessment Center** 4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan	
Prüfgrundlage: *Test specification:*	**47 CFR Part 15.247 (Subpart: C), 2010-01** **47 CFR Part 15.107 and 15.109 (Subpart: B), 2010-01** **ANSI C63.4-2003** **KDB Publication No. 558074: Guidance on Measurements for Digital Transmission Systems (47 CFR Part 15.247), March 23, 2005** **RSS-210 (Issue 7): 2007** **RSS-Gen (Issue 2): 2007**	
Prüfergebnis: *Test Result:*	**Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).** *The test item passed the test specification(s).*	
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland Japan Ltd. - Global Technology Assessment Center** 4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan	

geprüft/ *tested by:*			**kontrolliert/** *reviewed by:*		
2010-04-19	Y. Sasaki / Inspector		2010-04-19	T. Cheung / Reviewer	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges / *Other Aspects:*

This test report deals with the intentional and unintentional (receiver only) radiator of the tested product. The product is going to apply as Limited Module Approval. It consists of two radios 802.11b and 802.11g which cannot transmit at the same time.

Abkürzungen:				*Abbreviations:*			
	P(ass)	=	*entspricht Prüfgrundlage*		*P(ass)*	=	*passed*
	F(ail)	=	*entspricht nicht Prüfgrundlage*		*F(ail)*	=	*failed*
	N/A	=	*nicht anwendbar*		*N/A*	=	*not applicable*
	N/T	=	*nicht getestet*		*N/T*	=	*not tested*

TEST SUMMARY

3.2.1 VOLTAGE REQUIREMENTS, FCC 15.31(E)
RESULT: PASS

3.2.2 ANTENNA REQUIREMENTS, FCC 15.203, FCC 15.204 AND RSS-GEN 7.1.4
RESULT: PASS

5.1.1 CONDUCTED OUTPUT POWER AT ANTENNA TERMINALS, FCC 15.247(B)(3) AND RSS-210 A8.4(4)
RESULT: PASS

5.1.2 6DB AND 99% BANDWIDTH, FCC 15.247(A)(2) AND RSS-210 A8.2(A)
RESULT: PASS

5.1.3 CONDUCTED SPURIOUS EMISSION, FCC 15.247(D) AND RSS-210 A8.5
RESULT: PASS

5.1.4 PEAK POWER SPECTRAL DENSITY, FCC 15.247(E) AND RSS-210 A8.2(B)
RESULT: PASS

6.1.1 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE OF TRANSMITTER, FCC 15.207 AND RSS-GEN 7.2.2
RESULT: PASS

6.2.1 MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE OF RECEIVER, FCC 15.107 AND RSS-GEN 7.2.2
RESULT: PASS

7.1.1 BAND EDGE RADIATED EMISSION, FCC 15.247(D) AND RSS- 210 2.2
RESULT: PASS

7.1.2 RADIATED EMISSION, OUT-OF-BAND AND SPURIOUS EMISSION, FCC 15.247(D), FCC 15.205, FCC 15.209, RSS-210 2.2, RSS-210 A8.5 AND RSS-GEN 7.2.1
RESULT: PASS

7.2.1 RADIATED EMISSION OF RECEIVER, FCC 15.109, RSS-210 2.2, RSS-210 2.6, RSS-210 A8.5, RSS-GEN 7.2.3.2
RESULT: PASS

Contents

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report.

2. Test Sites

2.1 Test Facilities

TÜV Rheinland Japan Ltd. - Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-ku, Yokohama 224-0021, Japan

The used test equipment is in accordance with CISPR 16 for measurement of radio interference.
The Federal Communications Commission has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance with the requirements of section 2.948 of the FCC rules. The description of the test facility is listed under FCC registration number 299054.

The Industry Canada has reviewed the technical characteristics of the radiated and conducted emission facility, and has found these test facilities to be in compliance. The description of the test facility is listed under OATS filing number 3466B.

The test facility is accredited by VLAC (member of ILAC) under number VLAC-017 according to ISO/IEC 17025:2005. TÜV Rheinland Japan Ltd. is accredited by the Federal Communications Commission as a Conformity Assessment Body under Designation Number JP0017 and Test Firm Registration Number 386498.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Model Name	Serial Number	Equipment ID	Calibrated until
For Antenna Port Conducted Emission					
Receiver	Rohde & Schwarz	ESU 40	100029	RF-0021	2010-12
RF Power Meter	Agilent	N1911A	MY45101737	BT-8226	2009-10
RF Peak Power Sensor	Agilent	N1921A	MY45242228	BT-8227	2009-10
For AC Power Line Conducted Emission					
Receiver	Rohde & Schwarz	ESU 40	100029	RF-0021	2010-12
LISN	Rohde & Schwarz	ENV216	100276	RF-0016	2010-05
For Radiated Emission					
Receiver	Rohde & Schwarz	ESU 8	100025	RF-0020	2010-02
Receiver	Rohde & Schwarz	ESU 40	100029	RF-0021	2010-12
RF Selector (10m)	Toyo Corporation	NS4900	0703-182	RF-0029	2010-05
3dB Attenuator 50Ohm	Tamagawa Electronics Co., Ltd.	CFA-01	-	RF-0265	2010-05
Low Noise Pre-Amplifier	TSJ	MLA-10K01-B01-35	1370750	RF-0253	2010-05
Microwave Pre-Amplifier, 1-8GHz	Toyo Corporation	TPA0108-40	0634	RF-0052	2010-11
Band Reject Filter	Nitsuki	NF-49BT	027	RF-0131	2010-11
Trilog Antenna, 30-1000MHz	Schwarzbeck	VULB9168	0245	RF-0019	2010-05
Horn Antenna, 1-10GHz	Schwarzbeck	BBHA9120B	419	RF-0050	2010-05
Horn Antenna with Pre-Amplifier, 2-18GHz	Toyo Corporation	HAP06-18W	00000025	RF-0065	2010-05
Horn Antenna with Pre-Amplifier, 18-26.5GHz	Toyo Corporation	HAP18-26N	00000010	RF-0070	2010-05
Constant Voltage Constant Frequency Stabilizers					
CVCF (Shielded Room)	NF Corporation	ESU2000S	9075612	RF-0210	N/A
CVCF Booster (Shielded Room)	NF Corporation	ESU2000B	9074403	RF-0211	N/A
CVCF (10m chamber)	NF Corporation	ESU2000S	9067307	RF-0212	N/A
CVCF Booster (10m chamber)	NF Corporation	ESU2000B	9074408	RF-0213	N/A

2.3 Measurement Uncertainty

Table 2: Emission Measurement Uncertainty

Measurement Type	Frequency	Uncertainty
AC Power Line Conducted Emission	150kHz - 30MHz	±3.0dB
Antenna Port Conducted Emission	< 1GHz	±0.39dB
	> 1GHz	±0.68dB
Radiated Emission	30MHz - 1GHz	±4.7dB
	> 1GHz	±4.5dB

3. General Product Information

3.1 Product Function and Intended Use

The **EUT** (Equipment Under Test) is a Wireless LAN Module certified as Limited Module Approval (FCC ID: EW4DWMW028 and IC: 4250A-DWMW028). The module consists of radios 802.11b/g. 802.11b at 1/2Mbps supports NDS series. 802.11b/g supports Nintendo Wii. The two radios cannot transmit at the same time.

3.2 System Details

Radio standard:	IEEE 802.11b/g
Specified power output:	8.26dBm (802.11b)
	14.82dBm (802.11g)
Antenna gain:	-1.91dBi
Antenna type:	Inverted F antenna
Mounting type:	External, fixed location
Frequency range:	2412 – 2472 MHz
Number of channel:	13
Channel spacing:	5 MHz
Modulation type:	BPSK, QPSK, CCK (802.11b)
	BPSK, QPSK, 16 QAM, 64 QAM (802.11g)
FCC Classification:	DTS
Emission designator:	G1D
System Input rating:	DC 12V or AC 110-240V, 50/60Hz via AC adaptor
Protection Class:	II
Test voltage:	AC 120V
Test frequency:	60Hz

Table 3: Interfaces present on the EUT

No.	Interface	Cable Length for Testing, Shielding	Interface Classification
1.	AC Mains input *[AC Mains -> AC/DC adaptor]*	1.5m, un-shielded	AC Power Input Port
2.	DC power input *[AC/DC adaptor -> Host]*	0.9m, un-shielded	DC Power Input Port
3.	Flat cable *[USB to Nintendo proprietary Debugger <-> EUT]*	0.2m, un-shielded	DC and Signal Port
4.	DC cable *[USB to Nintendo proprietary Debugger <-> EUT]*	0.5m, un-shielded	DC Power Input Port

3.2.1 Voltage Requirements, FCC 15.31(e)

RESULT: **PASS**

The EUT has an internal voltage regulator to supply the RF circuit. Hence it complies with the power supply requirements.

3.2.2 Antenna Requirements, FCC 15.203, FCC 15.204 and RSS-Gen 7.1.4

RESULT: **PASS**

The EUT has a permanent external antenna, details refer to the exhibits.

3.3 Clock Frequencies

The highest clock frequency generated by the EUT is 40 MHz

3.4 Independent Operation Modes

The EUT was tested with the host and USB to Nintendo proprietary Debugger. The test system was configured for testing in a typical fashion (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4:2003. Testing was performed at the lowest operating frequency (2412 MHz), the operating frequency in the middle of the specified frequency band (2442 MHz) and the highest operating frequency (2472 MHz).

The basic operation modes are:

802.11.b radio
b1. EUT continuously transmits at lowest Channel (2412 MHz)
b2. EUT continuously transmits at middle Channel (2442 MHz)
b3. EUT continuously transmits at highest Channel (2472 MHz)

802.11.g radio
b1. EUT continuously transmits at lowest Channel (2412 MHz)
b2. EUT continuously transmits at middle Channel (2442 MHz)
b3. EUT continuously transmits at highest Channel (2472 MHz)

R. EUT receives packets with 802.11 b/g radio

All continuous modulated signals are streaming with 100% duty cycle.

The worst-case data rate for each mode is determined as follows, based on preliminary test of above radios.

Table 4: The Date rate corresponds the worst case of each frequency band of different radio

Channel	Modulation/ Date Rate(Mbps)	
	802.11b	802.11g
Lowest: 2412MHz	11	12
Middle: 2442MHz	11	18
Highest: 2472MHz	1	24

The worst-case position was investigated for X/Y and Z orientation with highest emission, the worst-position was X/Y orientation. Therefore, all tests were conducted in X/Y orientation.

3.5 Noise Suppressing Parts

Refer to the schematic

4. Test Set-up and Operation Modes

4.1 Test Methodology

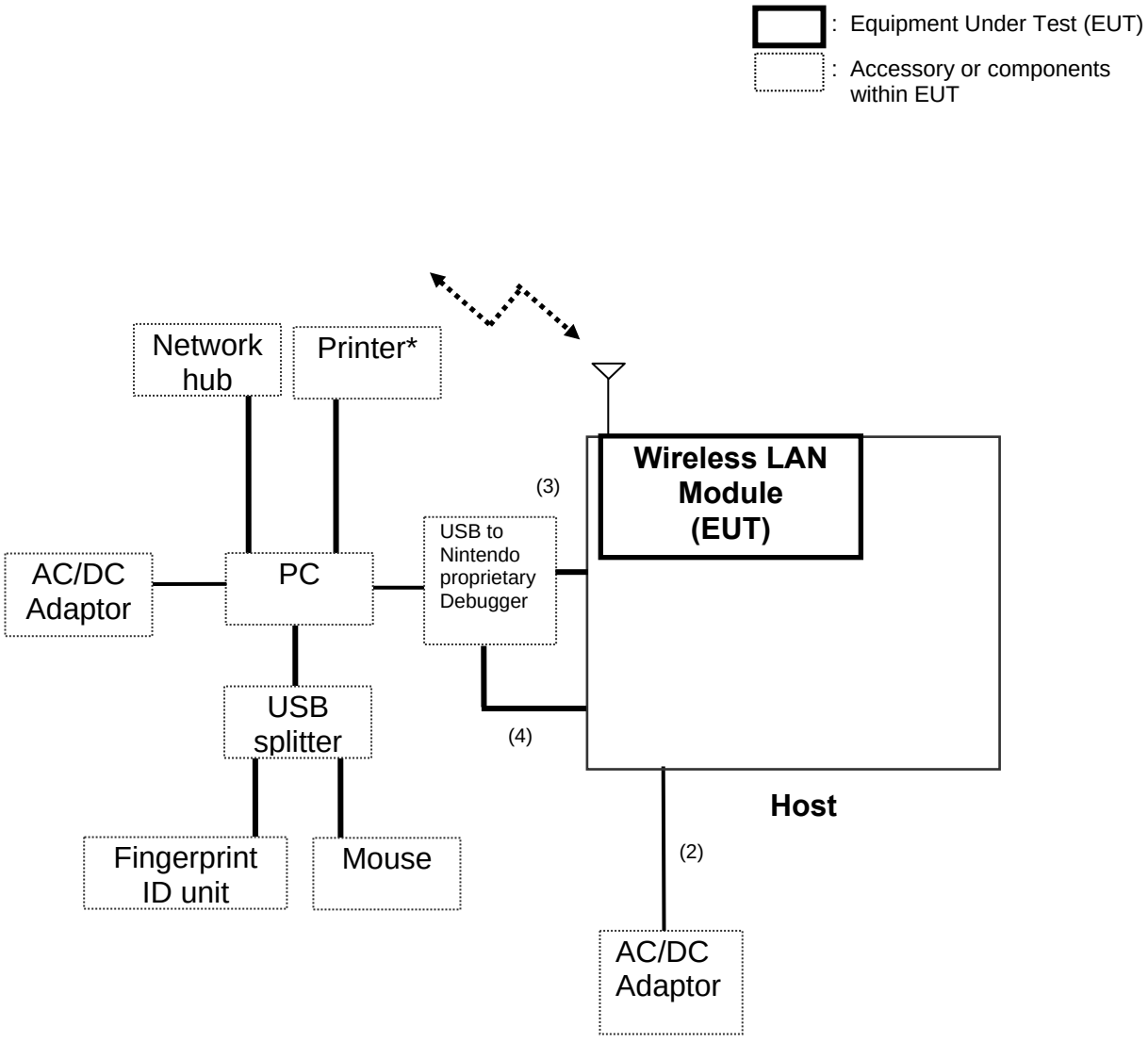
The test methodology used is based on the requirements of 47 CFR Part 15, sections 15.31, 15.33, 15.35, 15.205, 15.209 and Measurement of Digital Transmission Systems Operating under Section 15.247.

The test methods, which have been used, are based on ANSI C63.4:2003 and RSS-Gen (Issue 2).

For details, see under each test item.

4.2 Physical Configuration for Testing

Figure 1: Test setup



Note: The PC is necessary for operation mode setting. All AC input power ports of accessories are not shown.
For antenna conducted measurements, the antenna was removed and replaced SMA to U.FL connector attached to the EUT antenna port
*The printer was only used in test set-ups for the measurement of receiver mode (mode R).

For more details, refer to section: Photographs of the Test Set-Up.

4.3 Test Operation and Test Software

Following software were used for testing provided by Nintendo Co., Ltd.

1. The test program used for 11b/g test is "HOSTIO-ART"..
   HOSTIO-ART consists of the software on PC.
   The version of "HOSTIO-ART" is 1.8.

2. The software version of Debugger is 5.61-070_20100316

The software is used to enable on the EUT the test operation mode specified in section 3.4 as appropriate.

4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with the following additional accessories:

1. Product: Host
   Manufacturer: Nintendo Co., Ltd.
   Model: Nintendo DS CTR Target Board
   Rated voltage: DC 12V
   Protection class:III
   Serial number: J-01-0011

2. Product: AC Adapter for the Host
   Manufacturer: Nintendo Co., Ltd.
   Model: RVL-002(USA)
   Rating: AC 120V (input)/ DC 12V (output) at 95VA/3.7A
   Input power: 52W
   Frequency: 60Hz
   Protection class: II
   Serial number: E1246654J04

3. Product: Laptop PC
   Manufacturer: Dell
   Model: PP04S
   Rated voltage: DC 19.5V
   Input current: 3.34A
   Frequency: -
   Protection class: III
   Serial number: CN-0P5792-36521-52G-21C7

4. Product: AC Adapter for the Laptop PC
   Manufacturer: Dell
   Model: AA22850
   Rated voltage: AC 100-240V (input)/ DC 19.5V (output)
   Rated current: 1.5A
   Frequency: 50/60Hz
   Protection class: II
   Serial number: CN-0T2357-16291-52R-0364

5. Product: Fingerprint Identifier unit
   Manufacturer: Sony
   Model: FIU-830-N03
   Rated voltage: DC 5V (via USB port)
   Protection class: III
   Serial number: 3001499

6. Product: Network hub
   Manufacturer: Buffalo
   Model: LSW3-GT-5NS(D1)
   Rated voltage: AC 100V
   Input power: 5.0W
   Frequency: 50/60Hz
   Protection class: II
   Serial number: 16485784211186

7. Product: USB to Nintendo proprietary Debugger
   Manufacturer: Kyoto microcomputer
   Model: PARTNER-CTR/S
   Protection class: III
   Serial number: G0512000

8. Product: Extensional board for Debugger
   Manufacturer: Kyoto microcomputer
   Model: CTR-CBG-PRB1
   Protection class: III
   Serial number: 0911005 02061

9. Product: Mouse
   Manufacturer: Logitech
   Model: M-BS81A
   Rated voltage: DC 5V (via USB port)
   Input current: 100mA
   Protection class: III
   Serial number: LNA44800868

10. Product: USB splitter
    Manufacturer: SANWA
    Model: Un-specified
    Rated voltage: DC 5V (via USB port)
    Protection class: III
    Serial number: Un-specified

11. Product: Printer
    Manufacturer: Dell
    Model: 725
    Rated voltage: DC 30V
    Input current: 0.5A
    Protection class: III
    Serial number: CN-0FF79-048734-5BS-3HAV

12. Product: AC adaptor for Printer
    Manufacturer: Delta Electronics
    Model: ADP-15NM A
    Rated voltage: AC 100-240V
    Input current: 1.0A
    Frequency: 50/60Hz
    Protection class: II
    Serial number: 68W051013

4.5 Countermeasures to achieve EMC Compliance

None

5. Test Results Conducted Testing at Antenna Port

5.1.1 Conducted Output Power at Antenna Terminals, FCC 15.247(b)(3) and RSS-210 A8.4(4)

RESULT: **PASS**

Date of testing: 2010-04-05

Ambient temperature: 22°C
Relative humidity: 34%
Atmospheric pressure: 1012hPa

Requirements:
For systems using digital modulation in the 2400-2483.5MHz band, the maximum peak output power is 1W (30dBm).

Test procedure:
KDB Publication No. 558074 and RSS-Gen 4.8

The maximum peak output power (conducted) was measured directly at the antenna connector with the power meter. The final measurement takes into account the loss generated by the short cable to support the antenna connector.

The highest emission amplitudes relative to the appropriate limit were recorded in this report.

The measurement was performed at all the available modulations (data rates) in order to identify the one producing the highest output power for each mode of the 802.11b and 802.11g radios.

Table 5: Conducted Output Power, Mode b1(2412MHz), 802.11.b

Data Rate [Mbps]	Reading [dBm]	Correction Factor [dB]	Output Power [dBm]	Output Power [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
1	7.77	0.35	8.12	6.49	30.00	1000	21.88
2	7.81	0.35	8.16	6.55	30.00	1000	21.84
5.5	7.79	0.35	8.14	6.52	30.00	1000	21.86
11	7.82	0.35	8.17	6.56	30.00	1000	21.83

Notes: Output power = Reading + Correction factor
Correction factor = Total cable loss
mW = 10 ^ (dBm/10)
dBm = 10 x log(mW)

Table 6: Conducted Output Power, Mode b2 (2442MHz), 802.11.b

Data Rate [Mbps]	Reading [dBm]	Correction Factor [dB]	Output Power [dBm]	Output Power [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
1	7.72	0.35	8.07	6.41	30.00	1000	21.93
2	7.82	0.35	8.17	6.56	30.00	1000	21.83
5.5	7.80	0.35	8.15	6.53	30.00	1000	21.85
11	7.91	0.35	8.26	6.70	30.00	1000	21.74

Notes: Output power = Reading + Correction factor
Correction factor = Total cable loss
mW = 10 ^ (dBm/10)
dBm = 10 x log(mW)

Table 7: Conducted Output Power, Mode b3 (2472MHz), 802.11.b

Data Rate [Mbps]	Reading [dBm]	Correction Factor [dB]	Output Power [dBm]	Output Power [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
1	2.72	0.37	3.09	2.04	30.00	1000	26.91
2	2.65	0.37	3.02	2.00	30.00	1000	26.98
5.5	2.63	0.37	3.00	2.00	30.00	1000	27.00
11	2.66	0.37	3.03	2.01	30.00	1000	26.97

Notes: Output power = Reading + Correction factor
Correction factor = Total cable loss
mW = 10 ^ (dBm/10)
dBm = 10 x log(mW)

Table 8: Conducted Output Power, Mode g1 (2412MHz), 802.11.g

Data Rate [Mbps]	Reading [dBm]	Correction Factor [dB]	Output Power [dBm]	Output Power [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
6	13.72	0.35	14.07	25.53	30.00	1000	15.93
9	14.25	0.35	14.60	28.84	30.00	1000	15.40
12	14.47	0.35	14.82	30.34	30.00	1000	15.18
18	14.12	0.35	14.47	27.99	30.00	1000	15.53
24	14.12	0.35	14.47	27.99	30.00	1000	15.53
36	13.10	0.35	13.45	22.13	30.00	1000	16.55
48	12.75	0.35	13.10	20.42	30.00	1000	16.90
54	12.86	0.35	13.21	20.94	30.00	1000	16.79

Notes: Output power = Reading + Correction factor
Correction factor = Total cable loss
mW = 10 ^ (dBm/10)
dBm = 10 x log(mW)

Table 9: Conducted Output Power, Mode g2 (2442MHz), 802.11.g

Data Rate [Mbps]	Reading [dBm]	Correction Factor [dB]	Output Power [dBm]	Output Power [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
6	13.70	0.35	14.05	25.41	30.00	1000	15.95
9	14.21	0.35	14.56	28.58	30.00	1000	15.44
12	14.34	0.35	14.69	29.44	30.00	1000	15.31
18	14.38	0.35	14.73	29.72	30.00	1000	15.27
24	14.33	0.35	14.68	29.38	30.00	1000	15.32
36	13.16	0.35	13.51	22.44	30.00	1000	16.49
48	12.87	0.35	13.22	20.99	30.00	1000	16.78
54	12.89	0.35	13.24	21.09	30.00	1000	16.76

Notes: Output power = Reading + Correction factor
Correction factor = Total cable loss
mW = 10 ^ (dBm/10)
dBm = 10 x log(mW)

Table 10: Conducted Output Power, Mode g3 (2472MHz), 802.11.g

Data Rate [Mbps]	Reading [dBm]	Correction Factor [dB]	Output Power [dBm]	Output Power [mW]	Limit [dBm]	Limit [mW]	Margin [dB]
6	9.61	0.37	9.98	9.95	30.00	1000	20.02
9	10.03	0.37	10.40	10.96	30.00	1000	19.60
12	10.00	0.37	10.37	10.89	30.00	1000	19.63
18	10.16	0.37	10.53	11.30	30.00	1000	19.47
24	10.25	0.37	10.62	11.53	30.00	1000	19.38
36	9.70	0.37	10.07	10.16	30.00	1000	19.93
48	9.55	0.37	9.92	9.82	30.00	1000	20.08
54	10.15	0.37	10.52	11.27	30.00	1000	19.48

Notes: Output power = Reading + Correction factor
Correction factor = Total cable loss
mW = 10 ^ (dBm/10)
dBm = 10 x log(mW)

5.1.2 6dB and 99% Bandwidth, FCC 15.247(a)(2) and RSS-210 A8.2(a)

RESULT: **PASS**

Date of testing: 2010-04-05

Ambient temperature: 22°C
Relative humidity: 34%
Atmospheric pressure: 1012hPa

Requirements:
For systems using digital modulation in the 2400-2483.5MHz band, the 6dB bandwidth shall be at least 500 kHz.

Test procedure:
KDB Publication No. 558074 and RSS-Gen 4.6.1 & 4.6.2

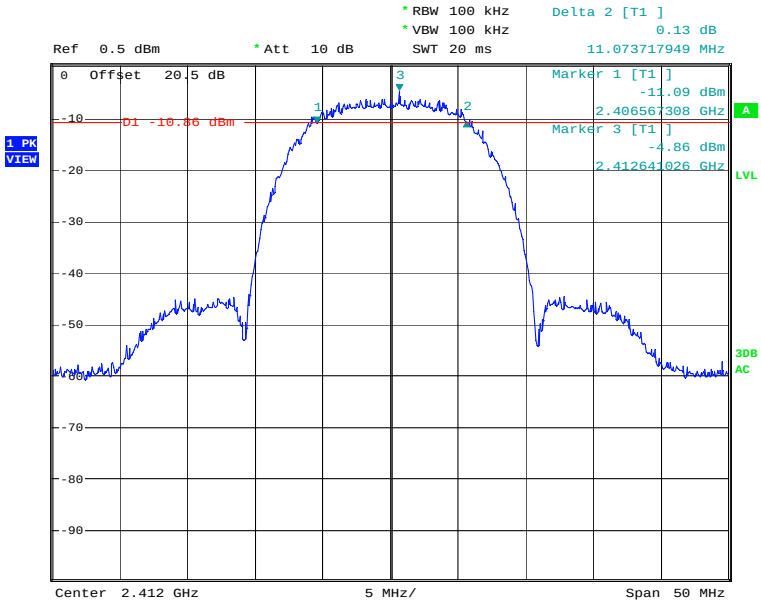
The antenna connector was connected to a spectrum analyzer. For 6dB bandwidth, make the measurement with the spectrum analyzer's resolution bandwidth (RBW) was set to100kHz. For the 99% bandwidth, the spectrum analyzer resolution bandwidth was set to 300kHz, i.e. 1% of the SPAN (30MHz). It measured by using the DELTA MARKER function of the analyzer.

Offset was applied in the plot due to the attenuator and loss.

Table 11: 6dB Bandwidth, 802.11.b

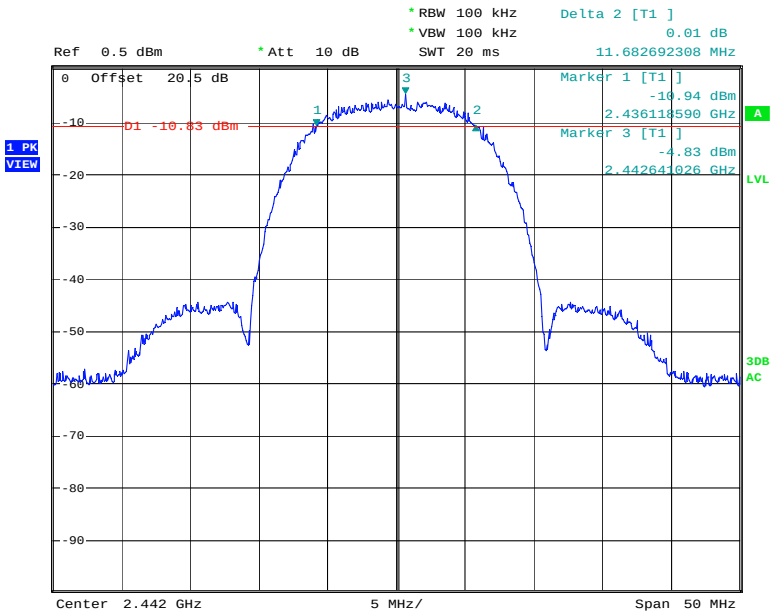
Frequency [MHz]	6dB Bandwidth [kHz]	Minimum Limit [kHz]
2412	11073.7	500
2442	11682.7	500
2472	10288.5	500

Figure 2: 6dB Bandwidth, Mode b1 (2412MHz)



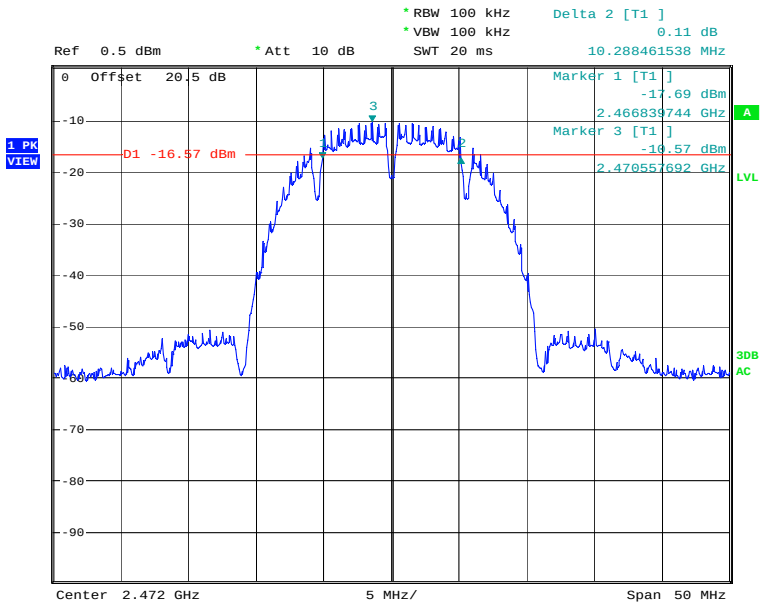
Mode b1
Date: 5.APR.2010 13:38:51

Figure 3: 6dB Bandwidth, Mode b2 (2442MHz)



Mode b2
Date: 5.APR.2010 12:22:40

Figure 4: 6dB Bandwidth, Mode b3 (2472MHz)

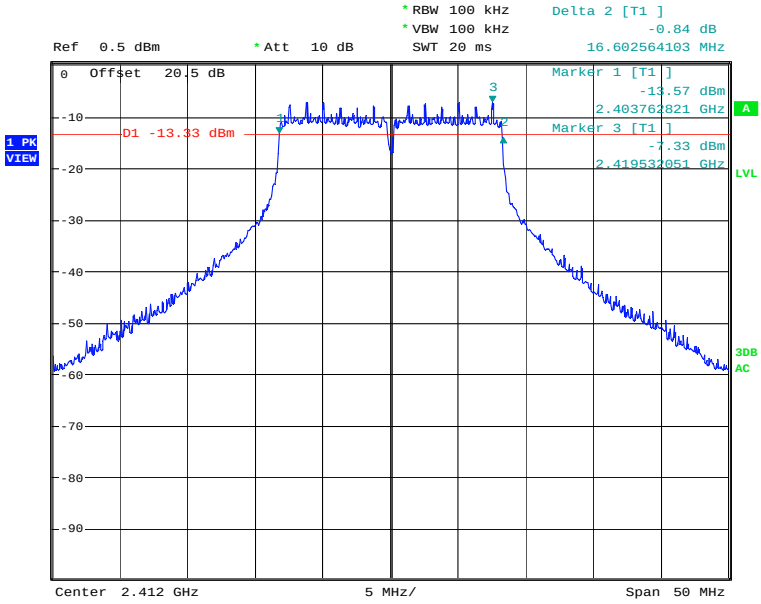


Mode b3
Date: 5.APR.2010 12:19:29

Table 12: 6dB Bandwidth, 802.11.g

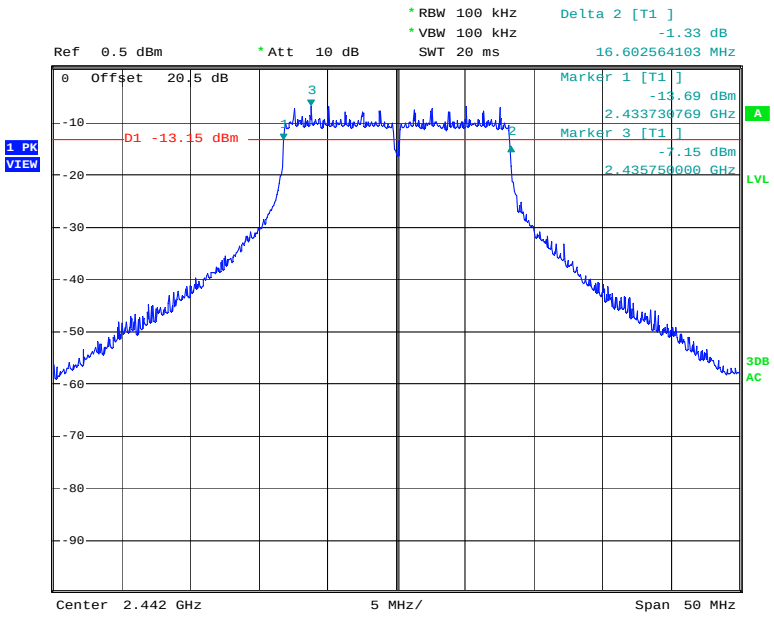
Frequency [MHz]	6dB Bandwidth [kHz]	Limit [kHz]
2412	16602.6	500
2442	16602.6	500
2472	16778.8	500

Figure 5: 6dB Bandwidth, Mode g1 (2412MHz)



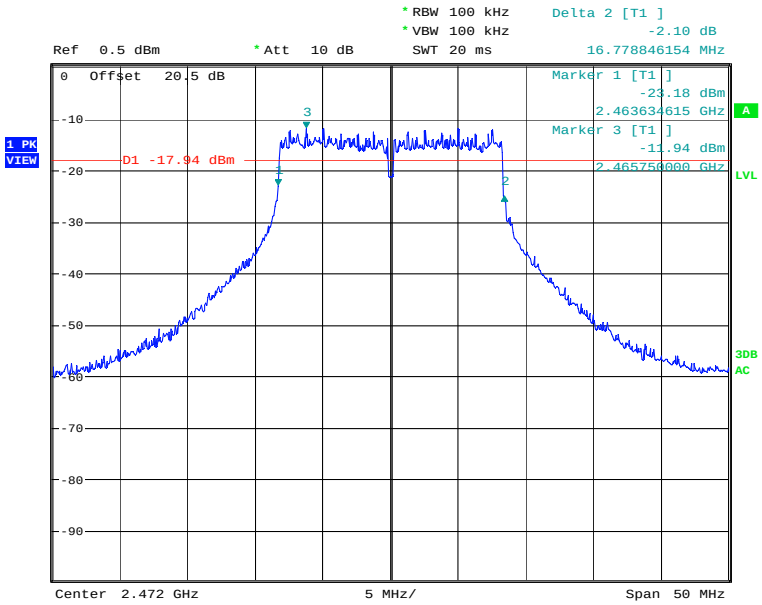
Mode g1
Date: 5.APR.2010 13:41:26

Figure 6: 6dB Bandwidth, Mode g2 (2442MHz)



Mode g2
Date: 5.APR.2010 13:29:56

Figure 7: 6dB Bandwidth, Mode g3 (2472MHz)

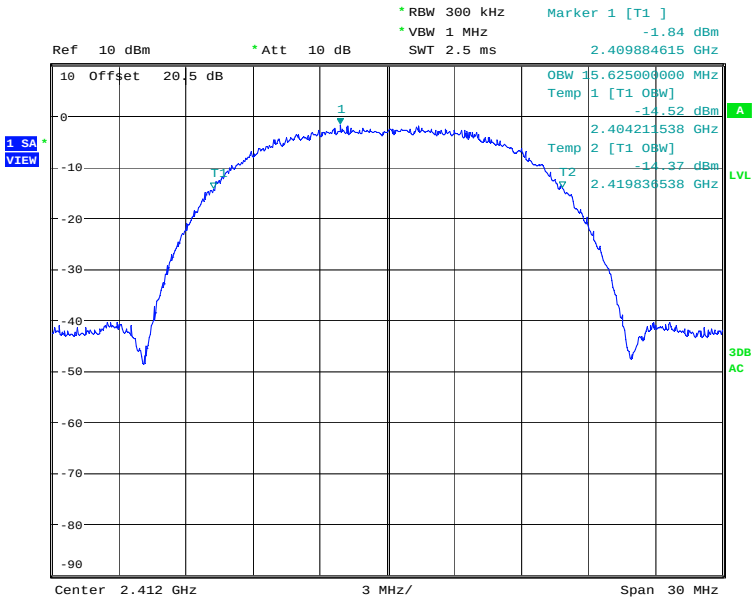


Mode g3
Date: 5.APR.2010 12:14:53

Table 13: 99% Bandwidth, 802.11.b

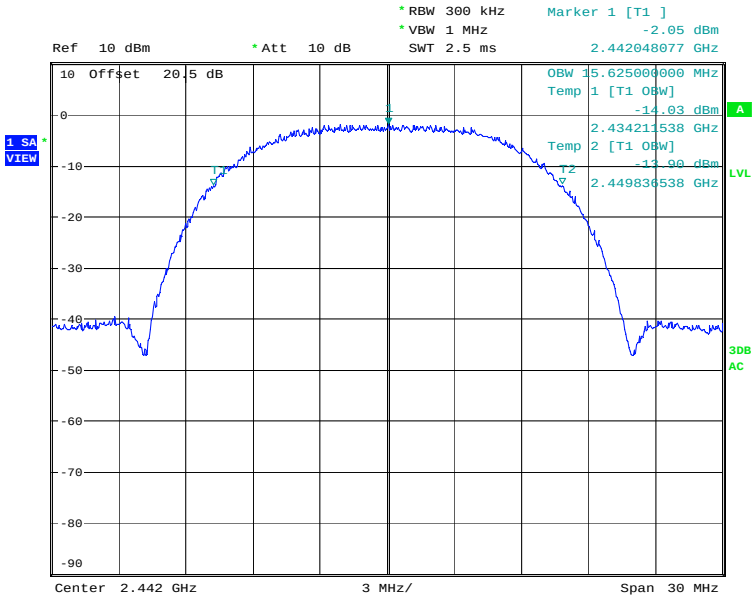
Operating Frequency [MHz]	99% Bandwidth [MHz]
2412	15.63
2442	15.63
2472	15.87

Figure 8: 99% Bandwidth, Mode b1 (2412MHz)



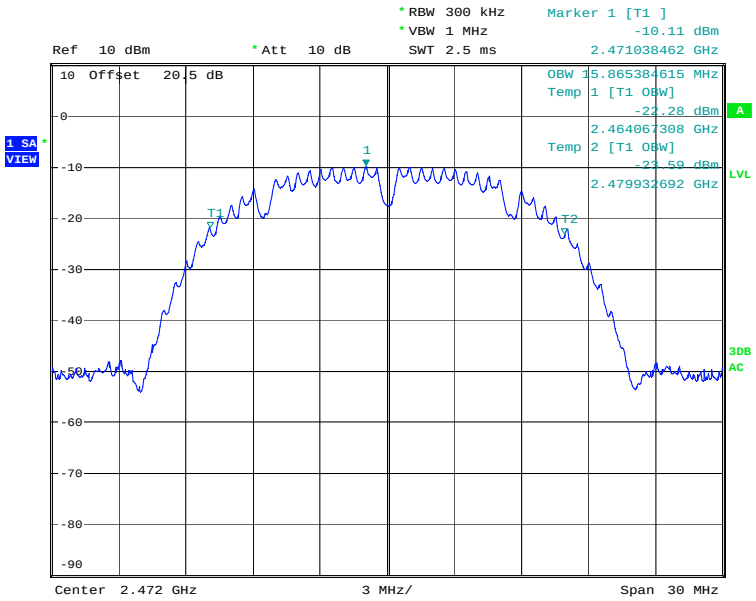
Mode b1
Date: 5.APR.2010 14:20:59

Figure 9: 99% Bandwidth, Mode b2 (2442MHz)



Mode b2
Date: 5.APR.2010 14:09:35

Figure 10: 99% Bandwidth, Mode b3 (2472MHz)

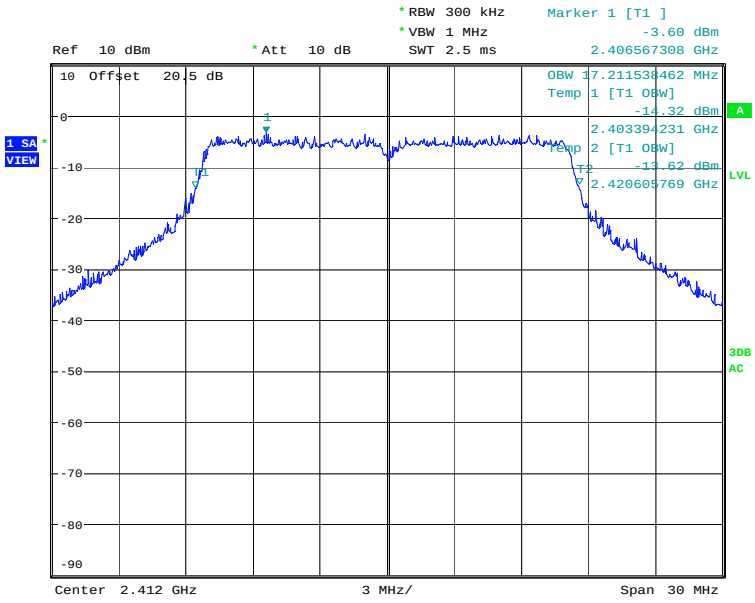


Mode b3
Date: 5.APR.2010 14:16:36

Table 14: 99% Bandwidth, 802.11.g

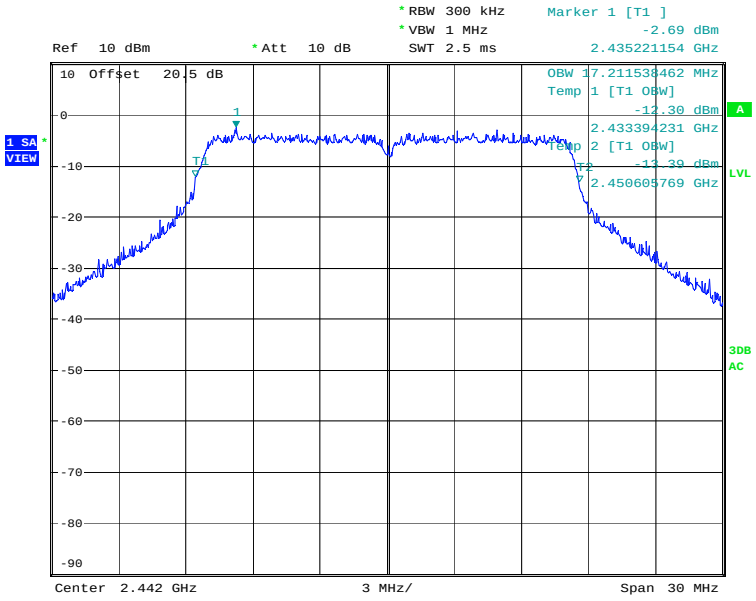
Operating Frequency [MHz]	99% Bandwidth [MHz]
2412	17.21
2442	17.21
2472	17.16

Figure 11: 99% Bandwidth, Mode g1 (2412MHz)



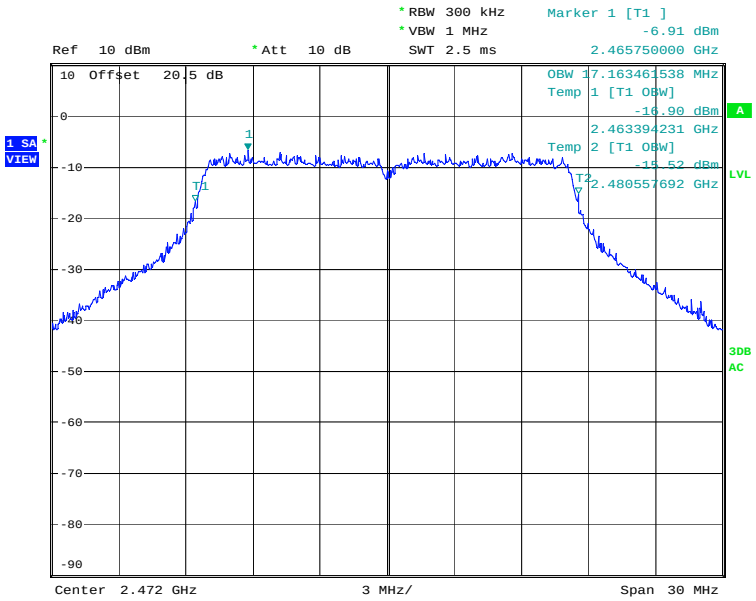
Mode g1
Date: 5.APR.2010 17:47:30

Figure 12: 99% Bandwidth, Mode g2 (2442MHz)



Mode g2
Date: 5.APR.2010 14:06:52

Figure 13: 99% Bandwidth, Mode g3 (2472MHz)



Mode g3
Date: 5.APR.2010 14:14:00

5.1.3 Conducted Spurious Emission, FCC 15.247(d) and RSS-210 A8.5

RESULT: **PASS**

Date of testing: 2010-04-05

Ambient temperature: 22°C
Relative humidity: 34%
Atmospheric pressure: 1012hPa

Requirements:
In any 100 kHz bandwidth outside the frequency band, the RF power shall be at least 20 dBc below that of the maximum in-band 100 kHz emission.

Test procedure:
KDB Publication No. 558074 and RSS-Gen 4.9

A spectrum analyzer was connected to the antenna port of the transmitter. Analyzer Resolution Bandwidth was set to 100 kHz. For each channel investigated, the in-band and out-of-band emission measurements were performed. The out-of-band emissions were measured from 30 MHz to 25 GHz (10^{th} harmonics).

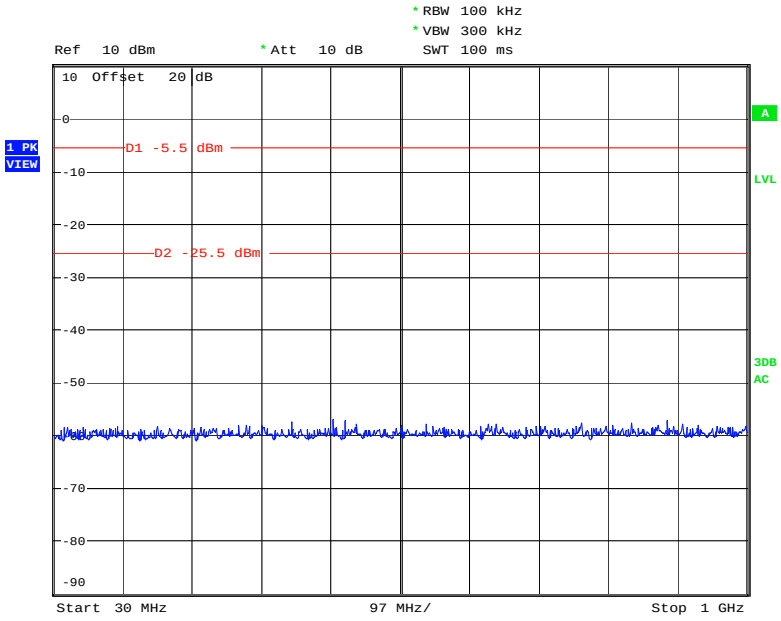
Offset was applied in the plot due to the attenuator and loss. The final measurement takes into account the loss generated by all the involved cables.

Table 15: Conducted Spurious Emission, Mode b1 (2412MHz), 802.11.b

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
Fundamental	-5.50	0.91	-4.59	N/A	N/A
3217.95	-52.26	1.06	-51.20	-24.59	26.60

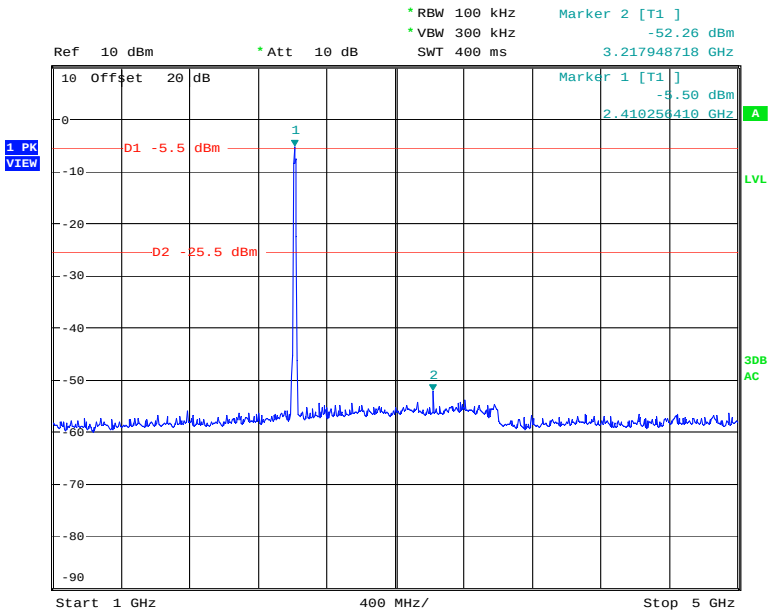
Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 14: Spurious Emission from 30MHz to 1GHz, Mode b1 (2412MHz)



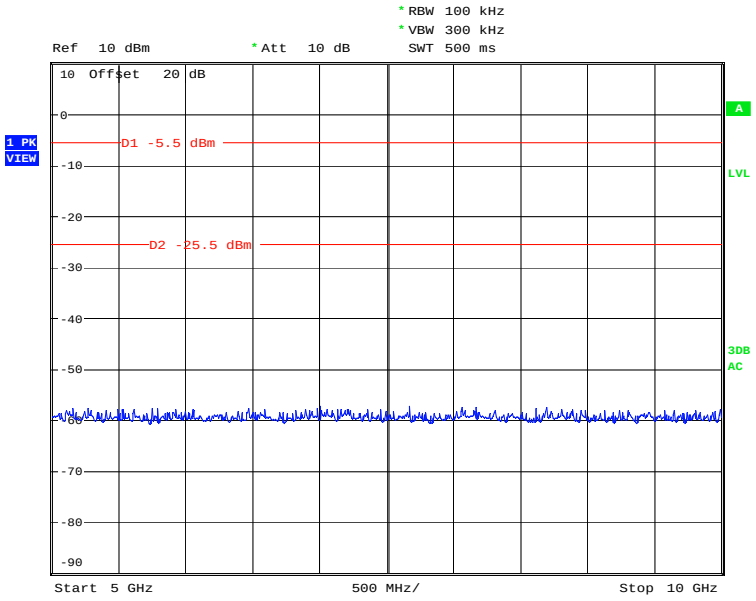
Mode b1, 30-1000MHz
Date: 5.APR.2010 15:05:19

Figure 15: Spurious Emission from 1 to 5GHz, Mode b1 (2412MHz)



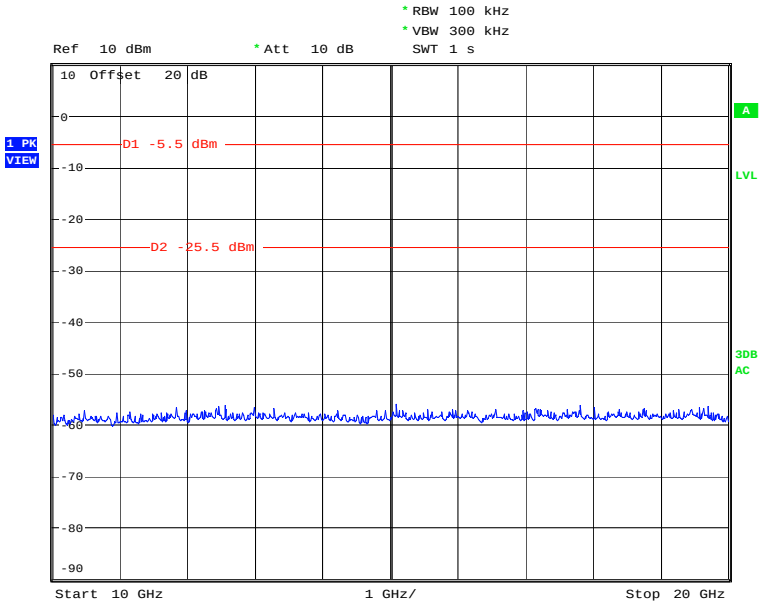
Mode b1, 1-5GHz
Date: 5.APR.2010 14:58:54

Figure 16: Spurious Emission from 5 to 10GHz, Mode b1 (2412MHz)



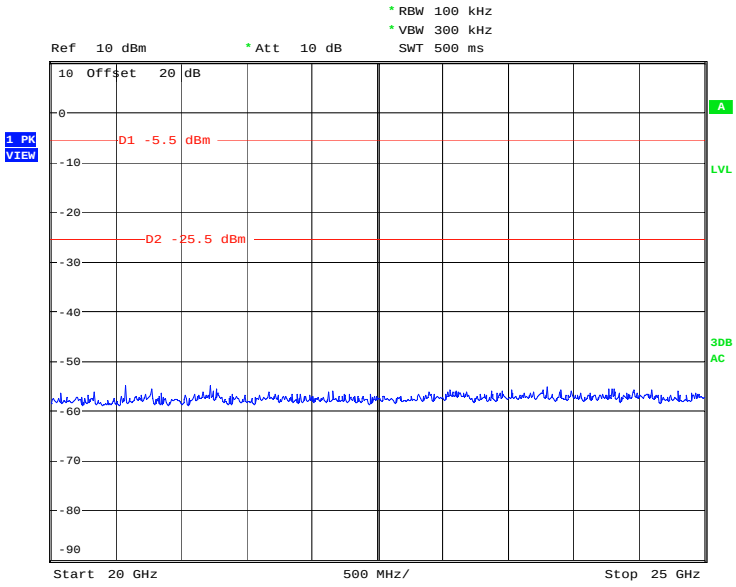
Mode b1, 5-10GHz
Date: 5.APR.2010 15:04:36

Figure 17: Spurious Emission from 10 to 20GHz, Mode b1 (2412MHz)



Mode b1, 10-20GHz
Date: 5.APR.2010 15:02:58

Figure 18: Spurious Emission from 20 to 25GHz, Mode b1 (2412MHz)



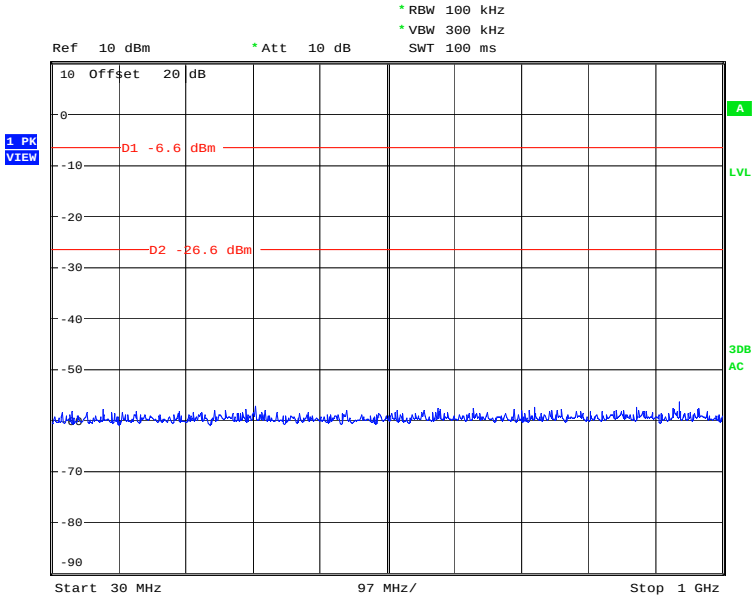
Mode b1, 20-25GHz
Date: 5.APR.2010 15:03:51

Table 16: Conducted Spurious Emissions, Mode b2 (2442MHz), 802.11.b

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
Fundamental	-6.60	0.88	-5.72	N/A	N/A
3256.41	-51.85	1.07	-50.78	-25.72	25.05

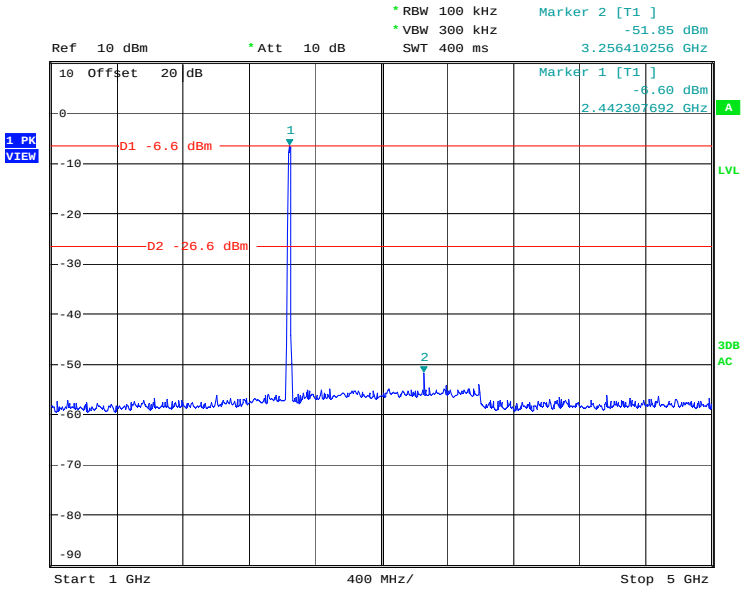
Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 19: Spurious Emission from 30MHz to 1GHz, Mode b2 (2442MHz)



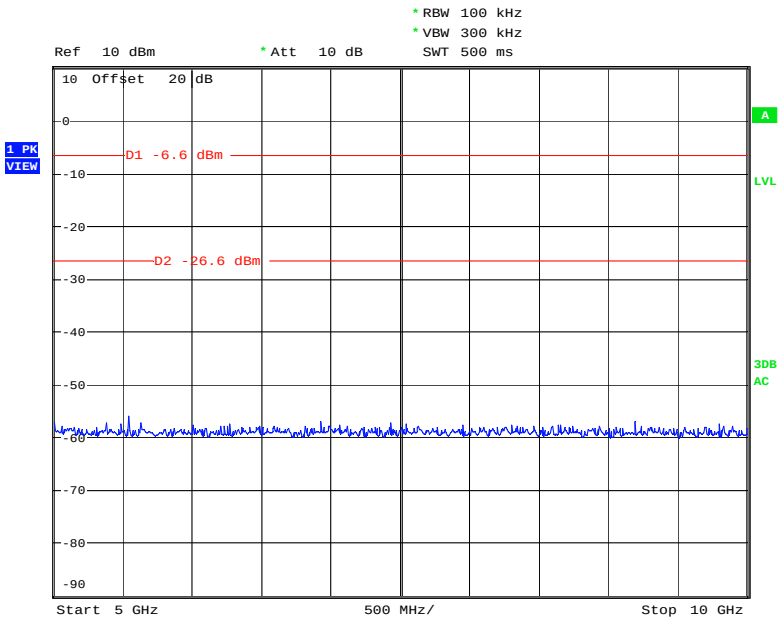
Mode b2, 30-1000MHz
Date: 5.APR.2010 15:12:49

Figure 20: Spurious Emission from 1 to 5GHz, Mode b2 (2442MHz)



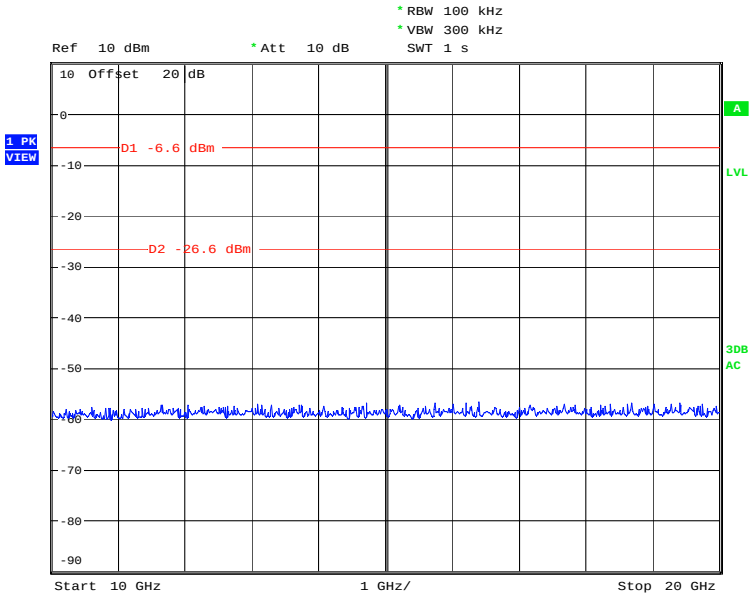
Mode b2, 1-5GHz
Date: 5.APR.2010 15:11:46

Figure 21: Spurious Emission from 5 to 10GHz, Mode b2 (2442MHz)



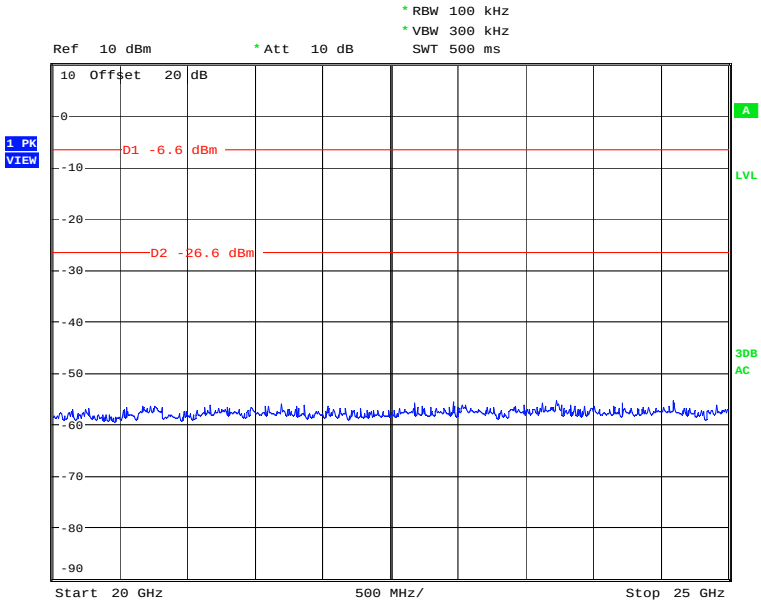
Mode b2, 5-10GHz
Date: 5.APR.2010 15:13:46

Figure 22: Spurious Emission from 10 to 20GHz, Mode b2 (2442MHz)



Mode b2, 10-20GHz
Date: 5.APR.2010 15:14:26

Figure 23: Spurious Emission from 20 to 25GHz, Mode b2 (2442MHz)



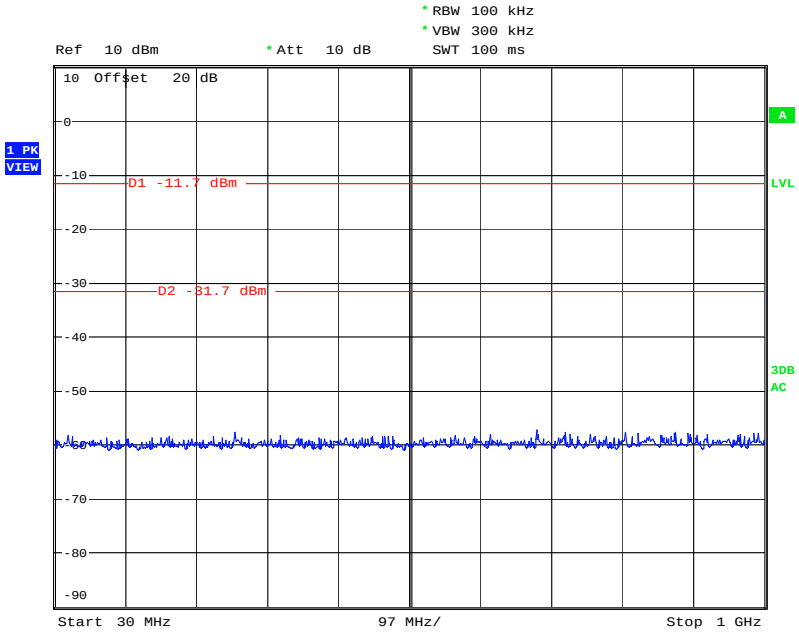
Mode b2, 20-25GHz
Date: 5.APR.2010 15:15:16

Table 17: Conducted Spurious Emissions, Mode b3 (2472MHz), 802.11.b

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
Fundamental	-11.70	0.88	-10.82	N/A	N/A
3294.87	-52.11	1.09	-51.02	-30.82	20.19

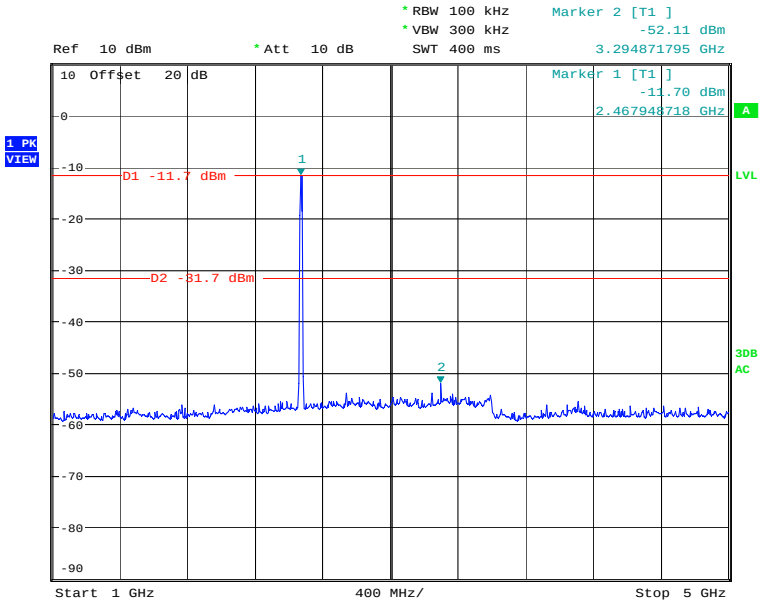
Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 24: Spurious Emission from 30MHz to 1GHz, Mode b3 (2472MHz)



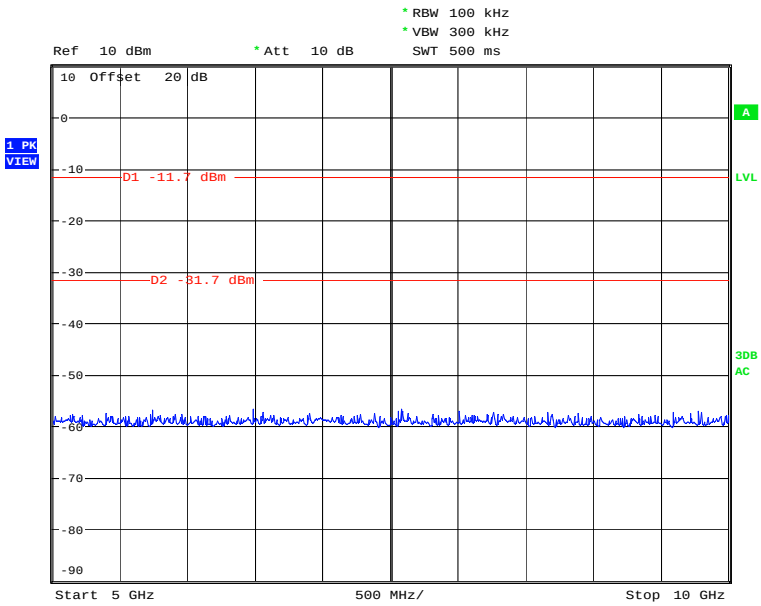
Mode b3, 30-1000MHz
Date: 5.APR.2010 15:43:02

Figure 25: Spurious Emission from 1 to 5GHz, Mode b3 (2472MHz)



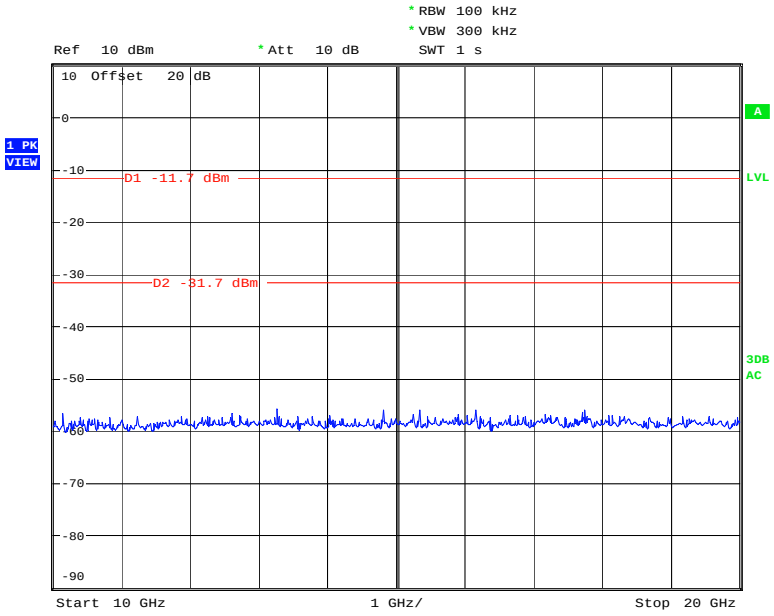
Mode b3, 1-5GHz
Date: 5.APR.2010 15:42:13

Figure 26: Spurious Emission from 5 to 10GHz, Mode b3 (2472MHz)



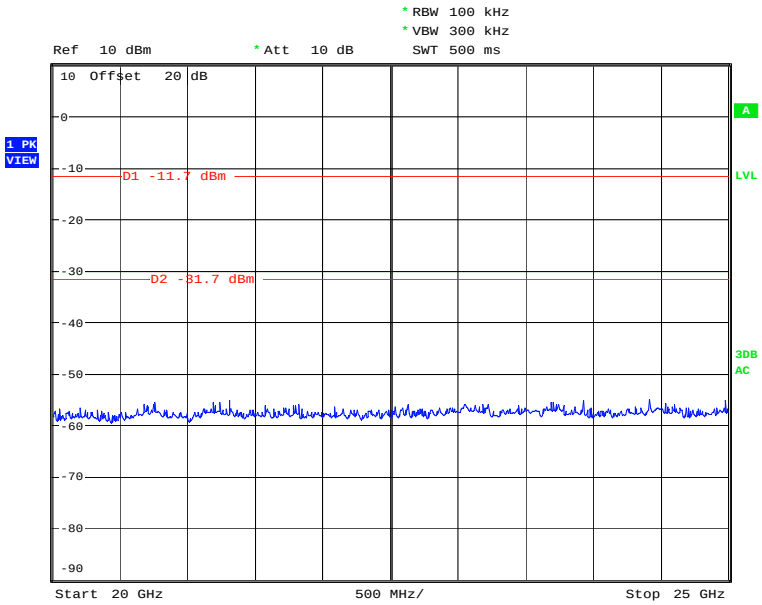
Mode b3, 5-10GHz
Date: 5.APR.2010 15:43:46

Figure 27: Spurious Emission from 10 to 20GHz, Mode b3 (2472MHz)



Mode b3, 10-20GHz
Date: 5.APR.2010 15:44:30

Figure 28: Spurious Emission from 20 to 25GHz, Mode b3 (2472MHz)



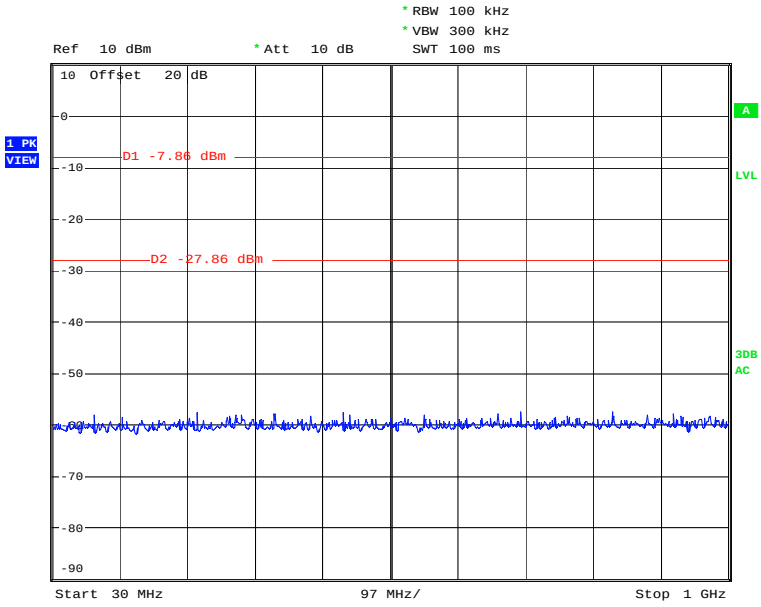
Mode b3, 20-25GHz
Date: 5.APR.2010 15:45:16

Table 18: Conducted Spurious Emissions, Mode g1 (2412MHz), 802.11.g

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
Fundamental	-7.86	0.91	-6.95	N/A	N/A
3217.95	-48.09	1.06	-47.03	-26.95	20.07

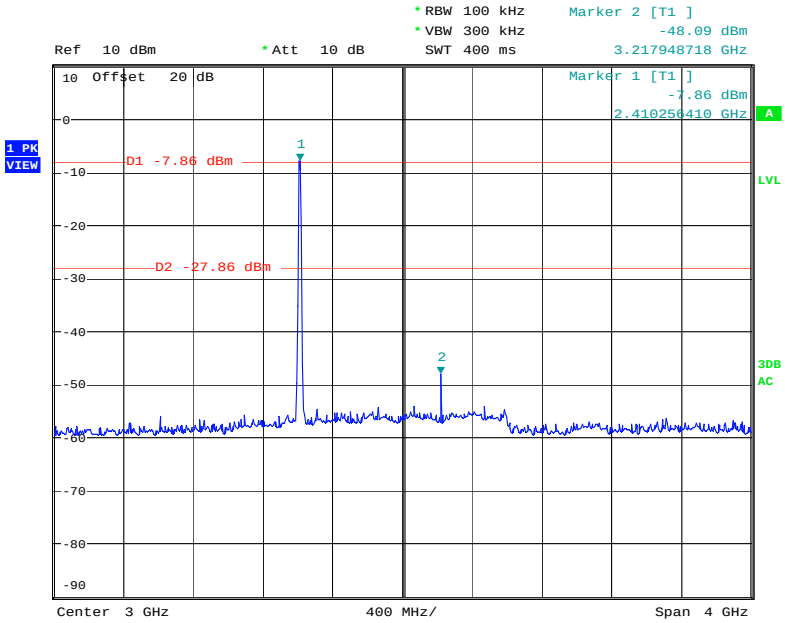
Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 29: Spurious Emission from 30MHz to 1GHz, Mode g1 (2412MHz)



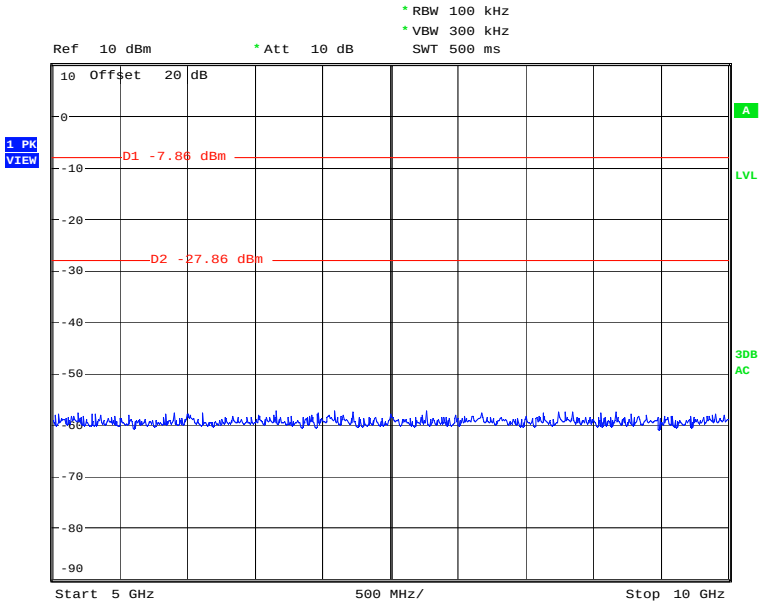
Mode g1, 30-1000MHz
Date: 5.APR.2010 14:50:45

Figure 30: Spurious Emission from 1 to 5GHz, Mode g1 (2412MHz)



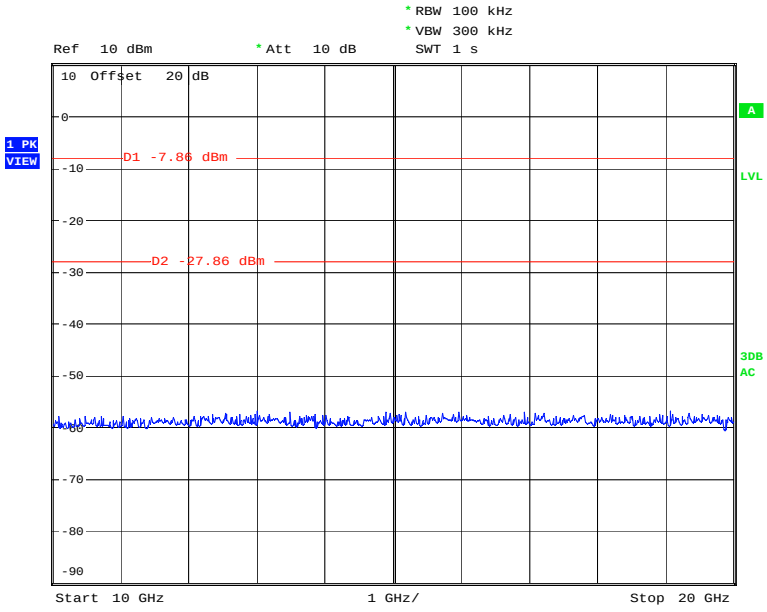
Mode g1, 1-5GHz
Date: 5.APR.2010 14:49:31

Figure 31: Spurious Emission from 5 to 10GHz, Mode g1 (2412MHz)



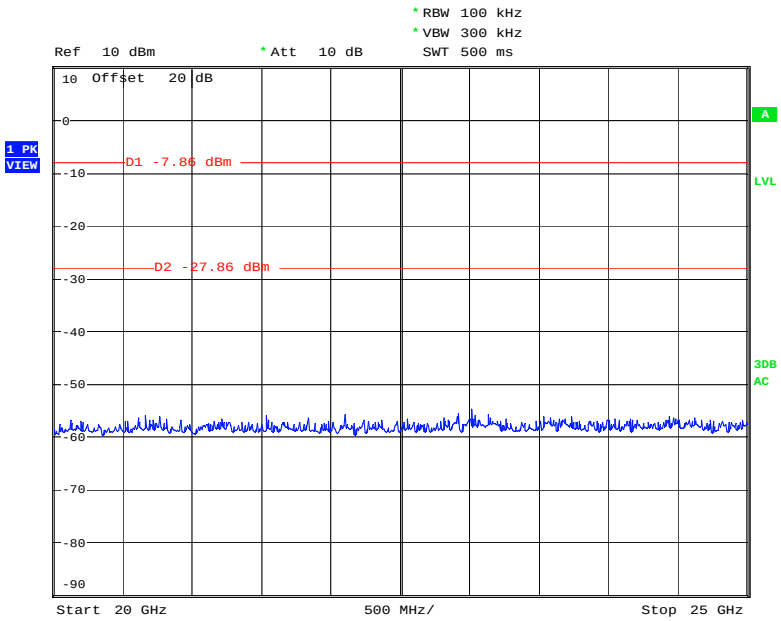
Mode g1, 5-10GHz
Date: 5.APR.2010 14:51:51

Figure 32: Spurious Emission from 10 to 20GHz, Mode g1 (2412MHz)



Mode g1, 10-20GHz
Date: 5.APR.2010 14:52:46

Figure 33: Spurious Emission from 20 to 25GHz, Mode g1 (2412MHz)



Mode g1, 20-25GHz
Date: 5.APR.2010 14:53:34

Table 19: Conducted Spurious Emissions, Mode g2 (2442MHz), 802.11.g

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
Fundamental	-7.18	0.88	-6.30	N/A	N/A
3256.41	-47.50	1.07	-46.43	-26.30	20.12

Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 34: Spurious Emission from 30MHz to 1GHz, Mode g2 (2442MHz)

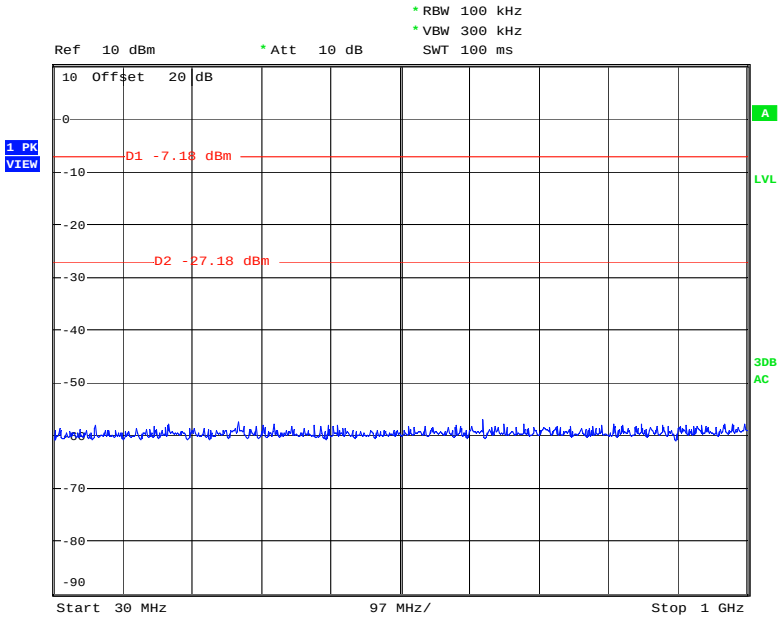
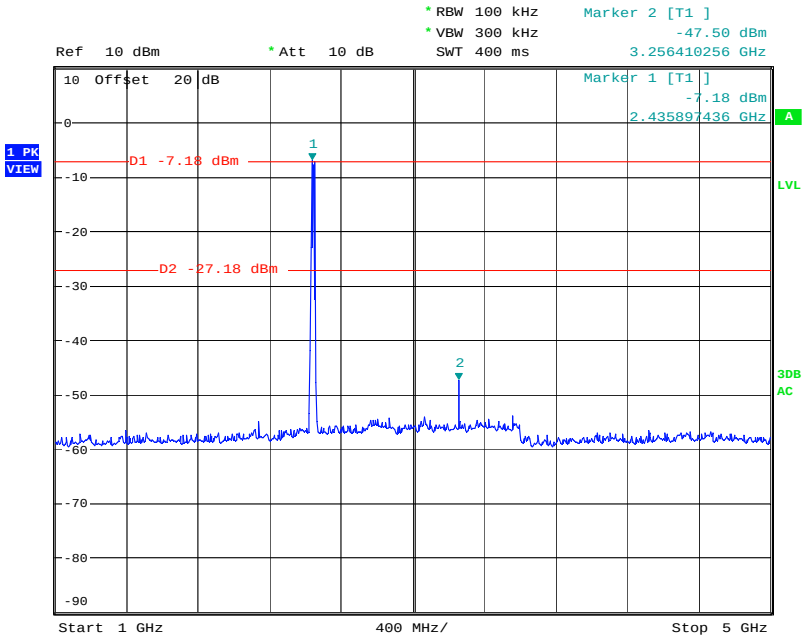
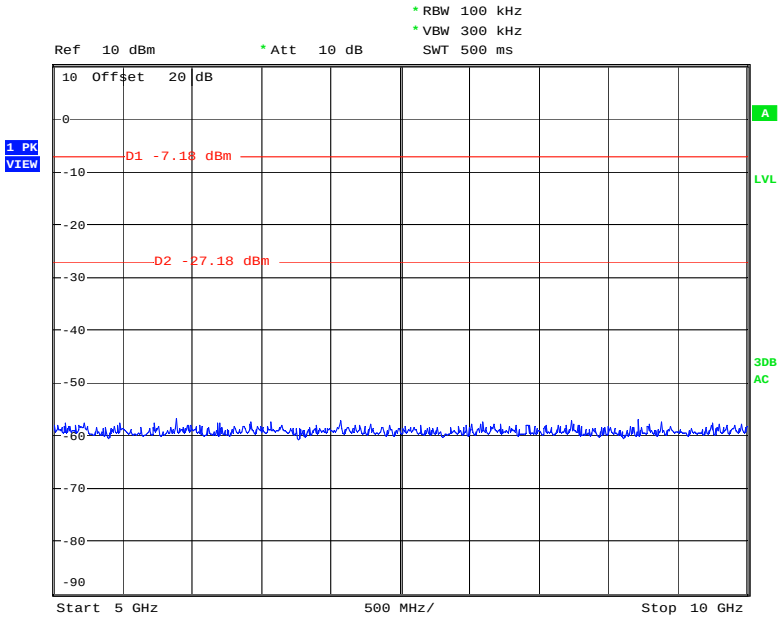


Figure 35: Spurious Emission from 1 to 5GHz, Mode g2 (2442MHz)



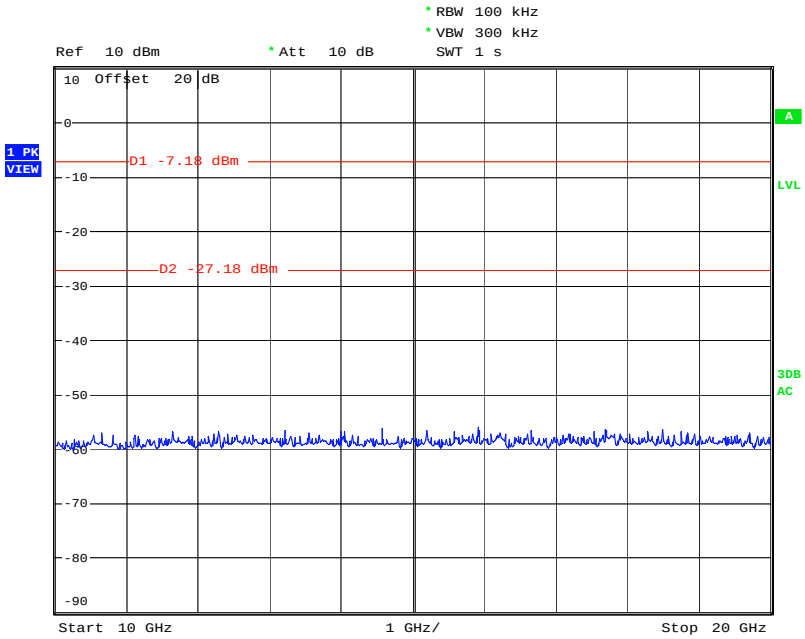
Mode g2, 1-5GHz
Date: 5.APR.2010 15:19:24

Figure 36: Spurious Emission from 5 to 10GHz, Mode g2 (2442MHz)



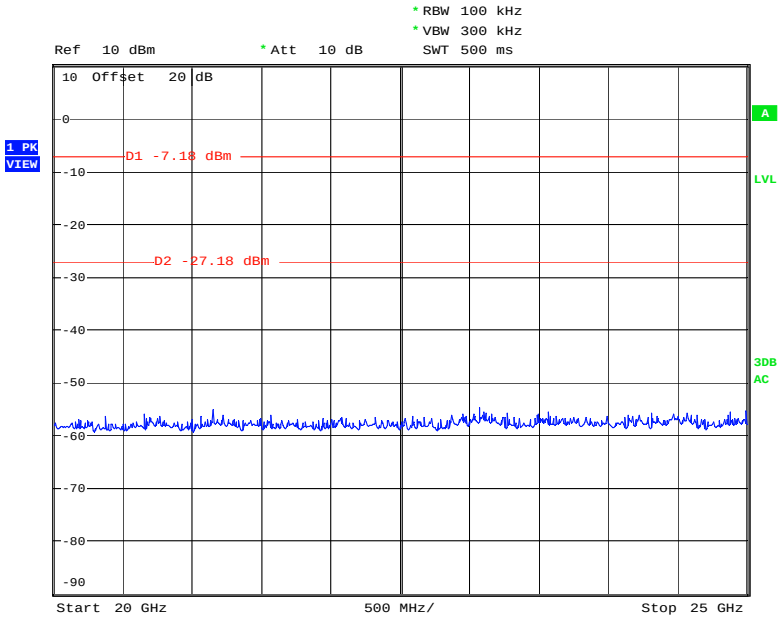
Mode g2, 5-10GHz
Date: 5.APR.2010 15:20:56

Figure 37: Spurious Emission from 10 to 20GHz, Mode g2 (2442MHz)



Mode g2, 10-20GHz
Date: 5.APR.2010 15:21:45

Figure 38: Spurious Emission from 20 to 25GHz, Mode g2 (2442MHz)



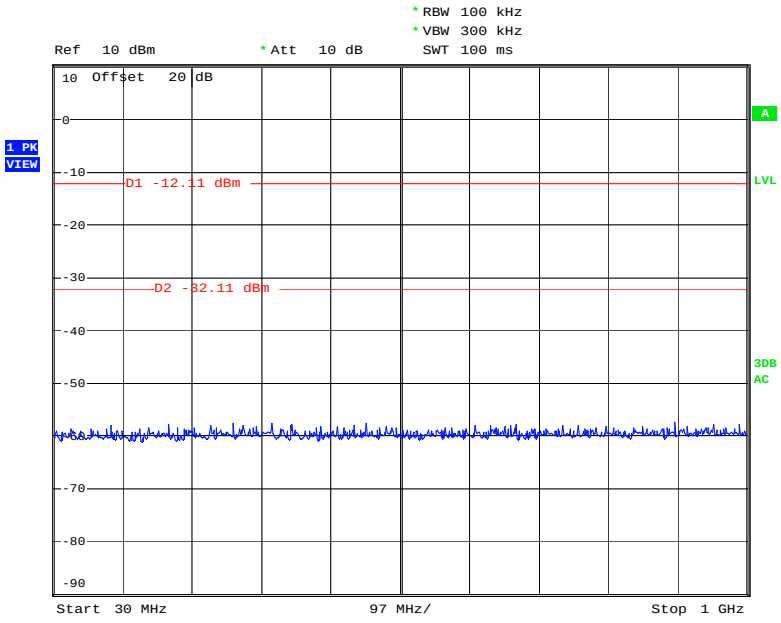
Mode g2, 20-25GHz
Date: 5.APR.2010 15:22:28

Table 20: Conducted Spurious Emissions, Mode g3 (2472MHz), 802.11.g

Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
Fundamental	-12.11	0.88	-11.23	N/A	N/A
3294.87	-48.55	1.09	-47.46	-31.23	16.22

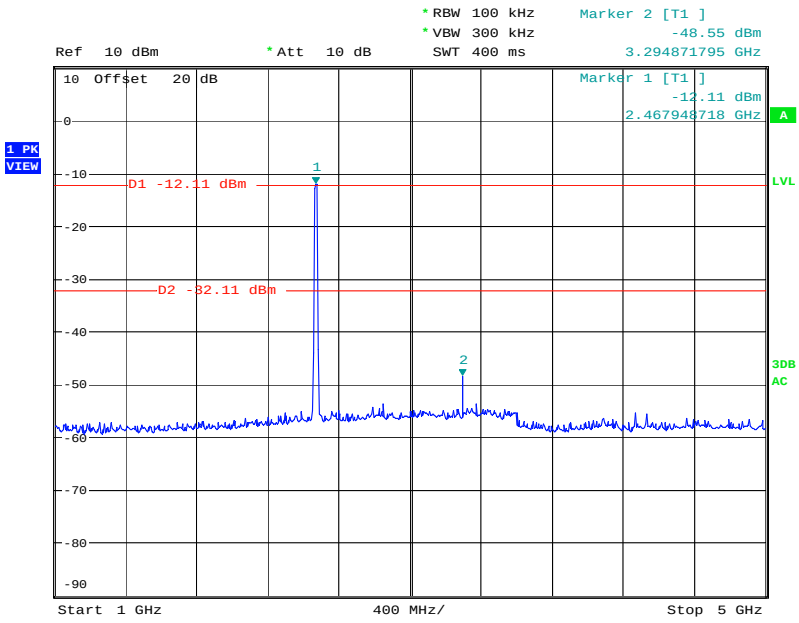
Notes: Limit = Reading of fundamental + Correction factor – 20dB
Emission level = Reading + Correction factor
Correction factor = Total cable loss

Figure 39: Spurious Emission from 30MHz to 1GHz, Mode g3 (2472MHz)



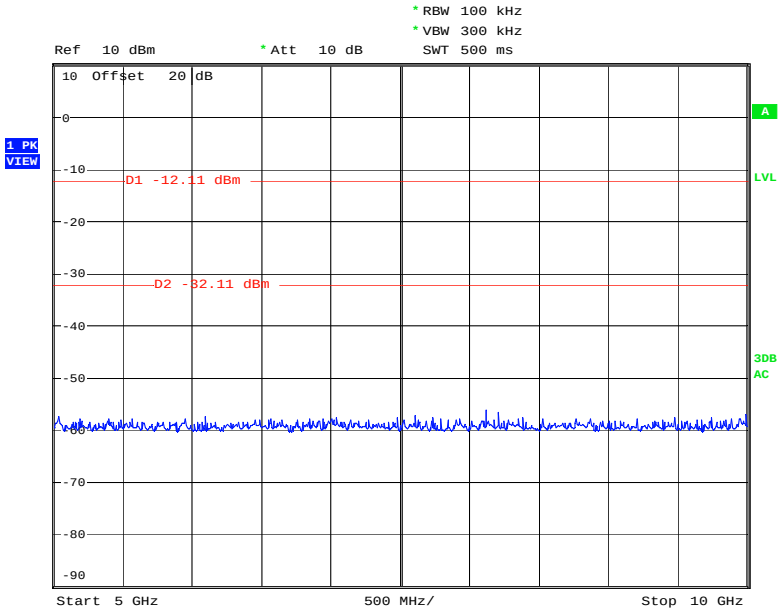
Mode g3, 30-1000MHz
Date: 5.APR.2010 15:33:08

Figure 40: Spurious Emission from 1 to 5GHz, Mode g3 (2472MHz)



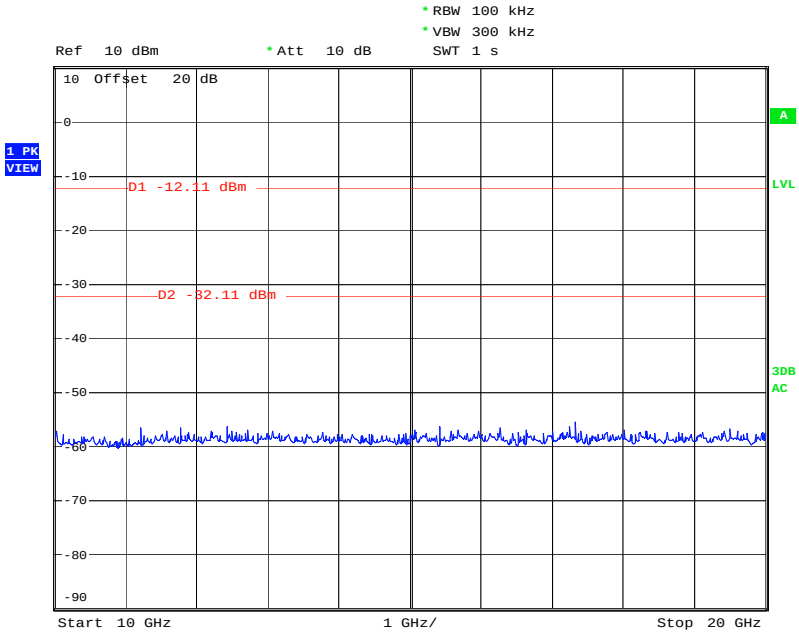
Mode g3, 1-5GHz
Date: 5.APR.2010 15:31:48

Figure 41: Spurious Emission from 5 to 10GHz, Mode g3 (2472MHz)



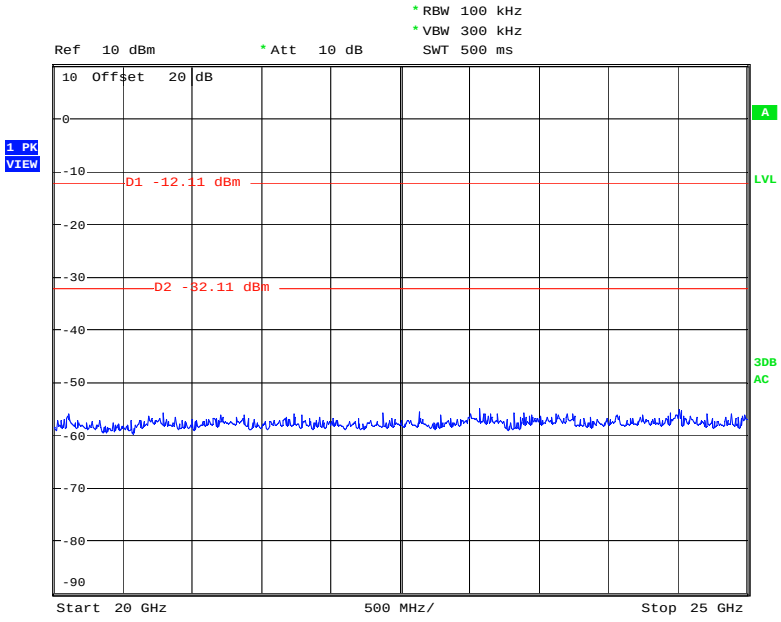
Mode g3, 5-10GHz
Date: 5.APR.2010 15:33:51

Figure 42: Spurious Emission from 10 to 20GHz, Mode g3 (2472MHz)



Mode g3, 10-20GHz
Date: 5.APR.2010 15:34:33

Figure 43: Spurious Emission from 20 to 25GHz, Mode g3 (2472MHz)



Mode g3, 20-25GHz
Date: 5.APR.2010 15:35:18

5.1.4 Peak Power Spectral Density, FCC 15.247(e) and RSS-210 A8.2(b)

RESULT: **PASS**

Date of testing: 2010-04-05

Ambient temperature: 22°C
Relative humidity: 34%
Atmospheric pressure: 1012hPa

Requirements:
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

Test procedure:
KDB Publication No. 558074 and RSS-210 A8.2

A spectrum analyzer was connected to the antenna port of the transmitter. Analyzer Resolution Bandwidth was set to 3kHz. The Video Bandwidth was set to 10kHz, and the sweep time was set to 500sec.

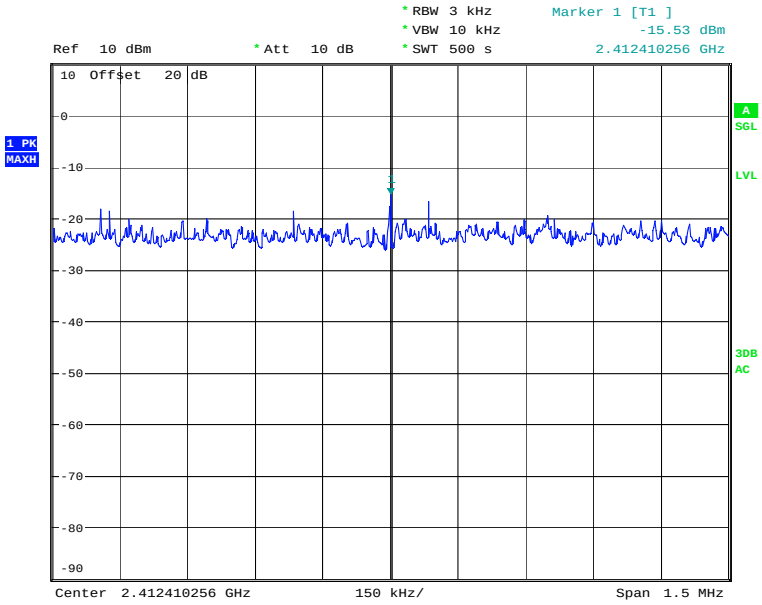
Offset was applied in the plot due to the attenuator and loss. The final measurement takes into account the loss generated by all the involved cables.

Table 21: Peak Power Spectral Density, 802.11.b

Operating Frequency [MHz]	Max PSD Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Max PSD [dBm]	Limit [dBm]	Margin [dB]
2412	2412.41	-15.53	0.91	-14.62	8.00	22.62
2442	2443.31	-18.47	0.88	-17.59	8.00	25.59
2472	2473.50	-24.28	0.88	-23.40	8.00	31.40

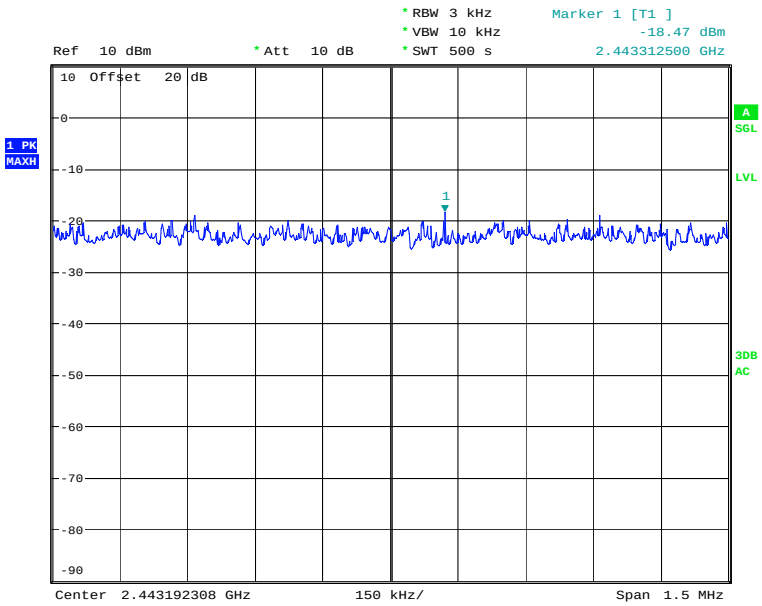
Notes: Power density = Reading + Correction factor
Correction factor = Total cable loss

Figure 44: Power Spectral Density, Mode b1 (2412MHz)



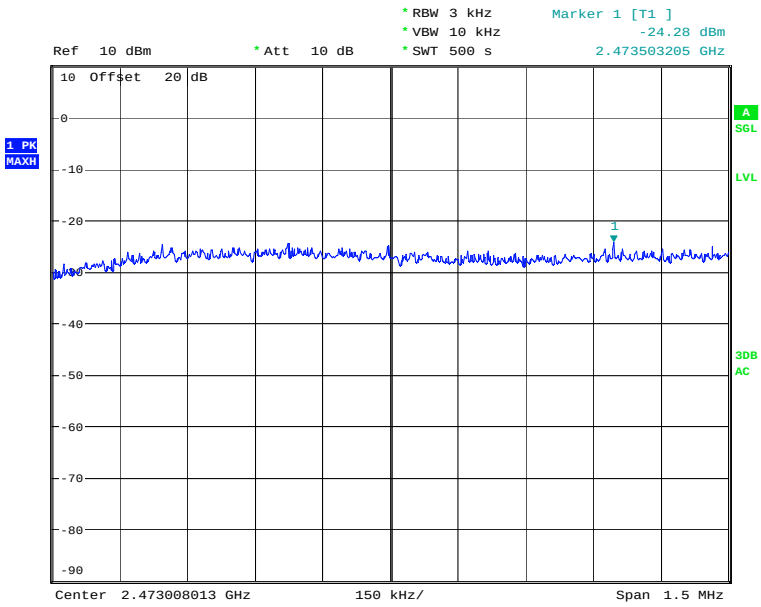
Mode b1
Date: 5.APR.2010 17:44:28

Figure 45: Power Spectral Density, Mode b2 (2442MHz)



Mode b2
Date: 5.APR.2010 17:19:33

Figure 46: Power Spectral Density, Mode b3 (2472MHz)

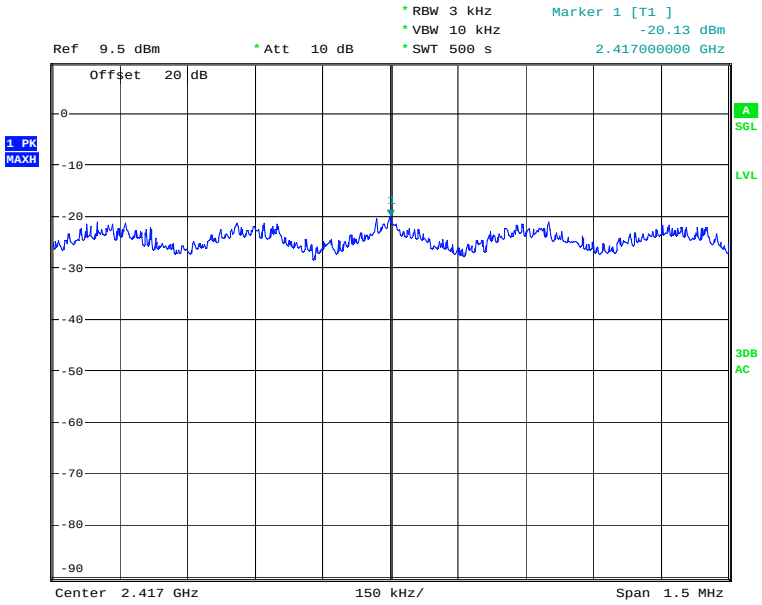


Mode b3
Date: 5.APR.2010 17:07:44

Table 22: Peak Power Spectral Density, 802.11.g

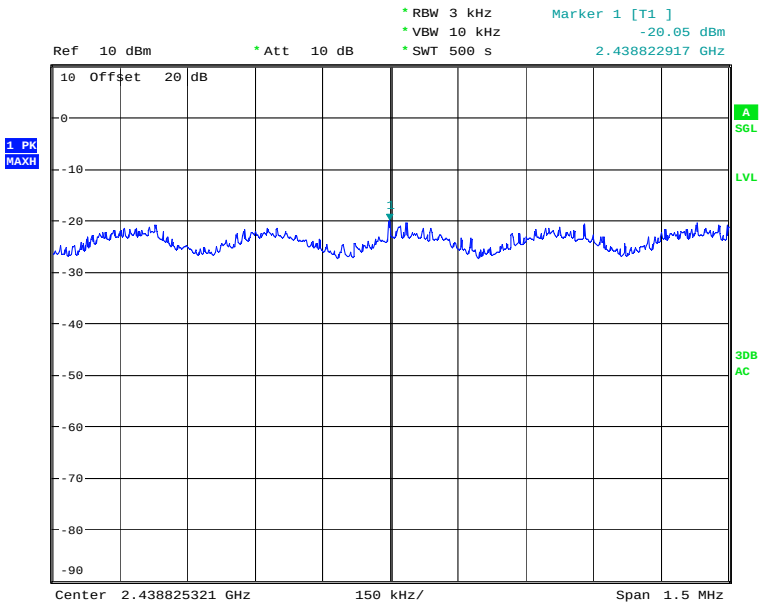
Operating Frequency [MHz]	Max PSD Frequency [MHz]	Reading [dBm]	Correction Factor [dB]	Max PSD [dBm]	Limit [dBm]	Margin [dB]
2412	2417.00	-20.13	0.86	-19.27	8.00	27.27
2442	2438.82	-20.05	0.88	-19.17	8.00	27.17
2472	2468.87	-25.58	0.89	-24.69	8.00	32.69

Figure 47: Power Spectral Density, Mode g1 (2412MHz)



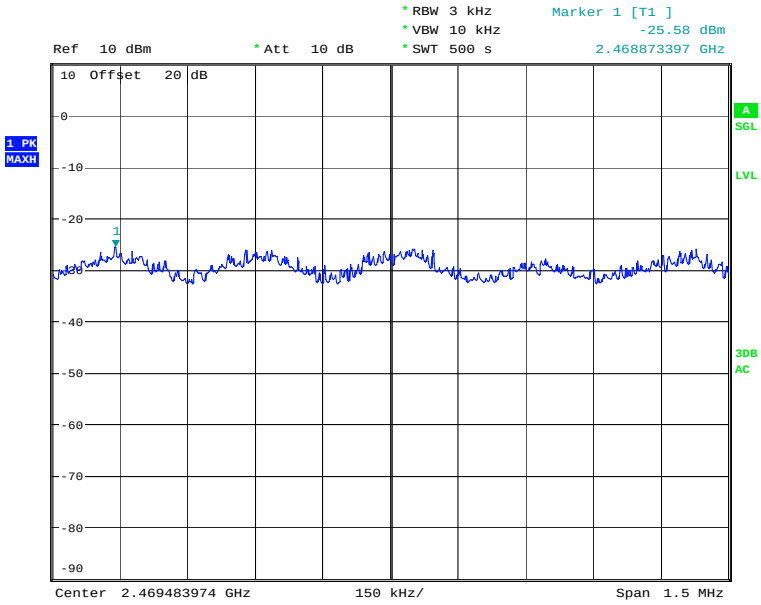
Mode g1
Date: 5.APR.2010 17:59:36

Figure 48: Power Spectral Density, Mode g2 (2442MHz)



Mode g2
Date: 5.APR.2010 17:32:02

Figure 49: Power Spectral Density, Mode g3 (2472MHz)



Mode g3
Date: 5.APR.2010 16:55:06

6. Test Results AC Mains Conducted Emission

6.1 AC Mains Conducted Emission of Transmitter

6.1.1 Mains Terminal Continuous Disturbance Voltage of Transmitter, FCC 15.207 and RSS-Gen 7.2.2

RESULT: **PASS**

Date of testing:	2010-04-06
Ambient temperature:	20°C
Relative humidity:	40%
Atmospheric pressure:	1009hPa
Frequency range:	0.15 – 30MHz
Kind of test site:	Shielded Room

Requirements:
The AC power line on any frequency within the band 150 kHz to 30MHz shall not exceed the limits specified in FCC 15.207 and RSS-Gen 7.2.2.

Test procedure:
ANSI C63.4-2003

The EUT was placed on a wooden table raised 80cm above the reference ground plane. A vertical conducting plane of the screened room was located 40cm to the rear of the EUT. The AC adapter of the laptop computer was connected to a Line Impedance Stabilization Network (LISN) / Artificial Mains Network (AMN).

The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude and frequency in order to ensure that maximum emission amplitudes were attained.

The measurements were performed with the spectrum analyzer operating in the CISPR quasi-peak and average detection modes. The analyzer’s 6 dB bandwidth was set to 9kHz. No video filter less than 10 times the resolution bandwidth was used.

Disturbances other than those mentioned are small or not detectable.

Table 23: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode b1, 802.11.b

Freq. [MHz]	Phase	Reading QP [dB(µV)]	Reading AV [dB(µV)]	Factor [dB]	Level QP [dB(µV)]	Level AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
0.181	N	41.6	34.9	9.7	51.3	44.6	64.5	54.5	13.2	9.9
0.241	N	34.3	31.8	9.7	44.0	41.5	62.0	52.0	18.0	10.5
0.302	L1	35.4	34.0	9.7	45.1	43.7	60.2	50.2	15.1	6.5
0.361	L1	29.4	26.5	9.7	39.1	36.2	58.7	48.7	19.6	12.5
2.412	L1	25.5	25.0	9.8	35.3	34.8	56.0	46.0	20.7	11.2
3.315	N	24.5	22.6	9.8	34.3	32.4	56.0	46.0	21.7	13.6
3.676	N	24.9	22.5	9.8	34.7	32.3	56.0	46.0	21.3	13.7
4.159	N	26.9	26.3	9.8	36.7	36.1	56.0	46.0	19.3	9.9
4.701	L1	25.7	25.3	9.9	35.6	35.2	56.0	46.0	20.4	10.8
12.295	N	32.7	32.0	10.1	42.8	42.1	60.0	50.0	17.2	7.9

Notes: Level QP = Reading QP + Factor
Level AV = Reading AV + Factor

Table 24: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode b3, 802.11.b

Freq. [MHz]	Phase	Reading QP [dB(µV)]	Reading AV [dB(µV)]	Factor [dB]	Level QP [dB(µV)]	Level AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
0.183	N	40.1	33.4	9.7	49.8	43.1	64.3	54.3	14.5	11.2
0.242	L1	34.4	31.8	9.7	44.1	41.5	62.0	52.0	17.9	10.5
0.302	N	35.9	34.4	9.7	45.6	44.1	60.2	50.2	14.6	6.1
0.361	L1	29.4	27.1	9.7	39.1	36.8	58.7	48.7	19.6	11.9
2.409	N	25.5	25.0	9.8	35.3	34.8	56.0	46.0	20.7	11.2
3.673	N	24.5	21.1	9.8	34.3	30.9	56.0	46.0	21.7	15.1
4.155	N	25.9	25.0	9.8	35.7	34.8	56.0	46.0	20.3	11.2
11.982	N	33.1	31.6	10.1	43.2	41.7	60.0	50.0	16.8	8.3

Notes: Level QP = Reading QP + Factor
Level AV = Reading AV + Factor

Table 25: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode g1, 802.11.g

Freq. [MHz]	Phase	Reading QP [dB(µV)]	Reading AV [dB(µV)]	Factor [dB]	Level QP [dB(µV)]	Level AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
0.179	L1	40.0	34.1	9.7	49.7	43.8	64.5	54.5	14.8	10.7
0.243	L1	33.8	31.1	9.7	43.5	40.8	62.0	52.0	18.5	11.2
0.302	N	35.8	34.2	9.7	45.5	43.9	60.2	50.2	14.7	6.3
0.362	L1	29.2	26.9	9.7	38.9	36.6	58.7	48.7	19.8	12.1
3.671	L1	23.2	19.4	9.8	33.0	29.2	56.0	46.0	23.0	16.8
4.156	N	26.2	25.4	9.8	36.0	35.2	56.0	46.0	20.0	10.8
4.940	L1	24.2	21.1	9.9	34.1	31.0	56.0	46.0	21.9	15.0
12.467	N	32.2	30.4	10.1	42.3	40.5	60.0	50.0	17.7	9.5

Notes: Level QP = Reading QP + Factor
Level AV = Reading AV + Factor

Table 26: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode g3, 802.11.g

Freq. [MHz]	Phase	Reading QP [dB(µV)]	Reading AV [dB(µV)]	Factor [dB]	Level QP [dB(µV)]	Level AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
0.181	L1	41.3	35.2	9.7	51.0	44.9	64.4	54.4	13.4	9.5
0.243	N	34.0	31.0	9.7	43.7	40.7	62.0	52.0	18.3	11.3
0.300	N	35.3	33.9	9.7	45.0	43.6	60.3	50.3	15.3	6.7
0.361	L1	29.7	27.4	9.7	39.4	37.1	58.7	48.7	19.3	11.6
3.673	N	25.2	21.9	9.8	35.0	31.7	56.0	46.0	21.0	14.3
4.156	N	26.2	25.4	9.8	36.0	35.2	56.0	46.0	20.0	10.8
4.999	L1	25.6	24.2	9.9	35.5	34.1	56.0	46.0	20.5	11.9
11.862	N	33.9	33.5	10.1	44.0	43.6	60.0	50.0	16.0	6.4

Notes: Level QP = Reading QP + Factor
Level AV = Reading AV + Factor

6.2 AC Mains Conducted Emission of Receiver

6.2.1 Mains Terminal Continuous Disturbance Voltage of Receiver, FCC 15.107 and RSS-Gen 7.2.2

RESULT: **PASS**

Date of testing:	2010-04-06
Ambient temperature:	20°C
Relative humidity:	40%
Atmospheric pressure:	1009hPa
Frequency range:	0.15 – 30MHz
Kind of test site:	Shielded Room

Requirements:
The AC power line on any frequency within the band 150 kHz to 30MHz shall not exceed the limits specified in FCC 15.107(a) and RSS-Gen 7.2.2.

Test procedure:
ANSI C63.4-2003

The EUT was placed on a wooden table raised 80cm above the reference ground plane. A vertical conducting plane of the screened room was located 40cm to the rear of the EUT. The AC adapter of the laptop computer was connected to a Line Impedance Stabilization Network (LISN) / Artificial Mains Network (AMN).

The physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude and frequency in order to ensure that maximum emission amplitudes were attained.

The measurements were performed with the spectrum analyzer operating in the CISPR quasi-peak and average detection modes. The analyzer's 6 dB bandwidth was set to 9kHz. No video filter less than 10 times the resolution bandwidth was used.

Disturbances other than those mentioned are small or not detectable.

Table 27: Conducted Emission, 150kHz – 30MHz, Quasi Peak and Average Data, Phase N (N) and L1 (L), Mode R, 802.11.b/g

Freq. [MHz]	Phase	Reading QP [dB(µV)]	Reading AV [dB(µV)]	Factor [dB]	Level QP [dB(µV)]	Level AV [dB(µV)]	Limit QP [dB(µV)]	Limit AV [dB(µV)]	Margin QP [dB]	Margin AV [dB]
0.182	N	41.3	34.9	9.7	51.0	44.6	64.4	54.4	13.4	9.8
0.240	L1	34.5	32.0	9.7	44.2	41.7	62.1	52.1	17.9	10.4
0.301	L1	36.1	34.7	9.7	45.8	44.4	60.2	50.2	14.4	5.8
0.363	L1	28.9	26.3	9.7	38.6	36.0	58.7	48.7	20.1	12.7
2.469	N	24.9	24.1	9.8	34.7	33.9	56.0	46.0	21.3	12.1
3.735	L1	24.5	22.5	9.8	34.3	32.3	56.0	46.0	21.7	13.7
4.095	L1	23.4	20.9	9.8	33.2	30.7	56.0	46.0	22.8	15.3
11.984	N	34.2	33.3	10.1	44.3	43.4	60.0	50.0	15.7	6.6

Notes: Level QP = Reading QP + Factor
Level AV = Reading AV + Factor

7. Test Results Radiated Emission

7.1 Radiated Emission of Transmitter

7.1.1 Band Edge Radiated Emission, FCC 15.247(d) and RSS- 210 2.2

RESULT: **PASS**

Date of testing:	2010-04-06
Ambient temperature:	20°C
Relative humidity:	40%
Atmospheric pressure:	1009hPa
Measurement distance:	3m
Kind of test site:	Semi Anechoic Chamber

Requirements:
Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) and RSS-210 2.7 (Table 1), must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-210 2.7 (Table 2 and 3).

Test procedure:
ANSI C63.4-2003, RSS-Gen 4.9, 4.10 and Measurement of Digital Transmission Systems Operating under Section 15.247

Measurements were made in a Semi Anechoic Chamber at a measurement distance of 3m. The EUT was placed on a nonconductive turntable 0.8m above the ground plane. The EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level.

Pre-check measurements were taken using both horizontal and vertical antenna polarizations for host orientations (X/Y and Z) in order to ensure that maximum emission amplitudes were attained.

Peak (1 MHz RBW/VBW) and average (1 MHz RBW/10 Hz VBW) radiated measurements were taken with a suitable span to encompass the peak of the fundamental.

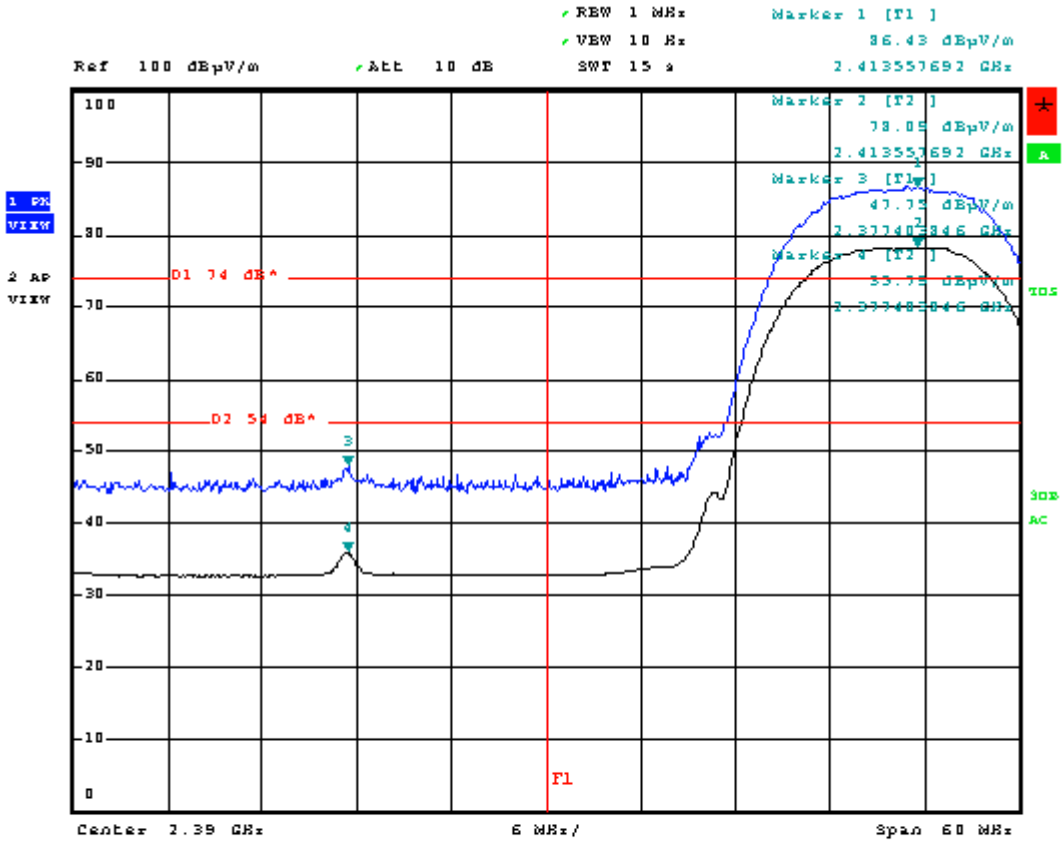
The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

Table 28: Band Edge Radiated Emission, 802.11.b

Operating Frequency [MHz]	EUT / Antenna Orient.	Peak Value [dBuV/m]	Average Value [dBuV/m]	Peak Limit [dBuV/m]	Average Limit [dBuV/m]	Peak Margin [dB]	Average Margin [dB]
2412	X/Y / V	47.75	35.79	74.0	54.0	26.25	18.21
2472	X/Y / H	49.67	38.57	74.0	54.0	24.33	15.43

Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.
Average limit in dBuV/m is calculated as follows: Average limit = 20 x log(500uV/m).
Peak limit in dBuV/m is calculated as follows: Peak limit = Average limit + 20dB.

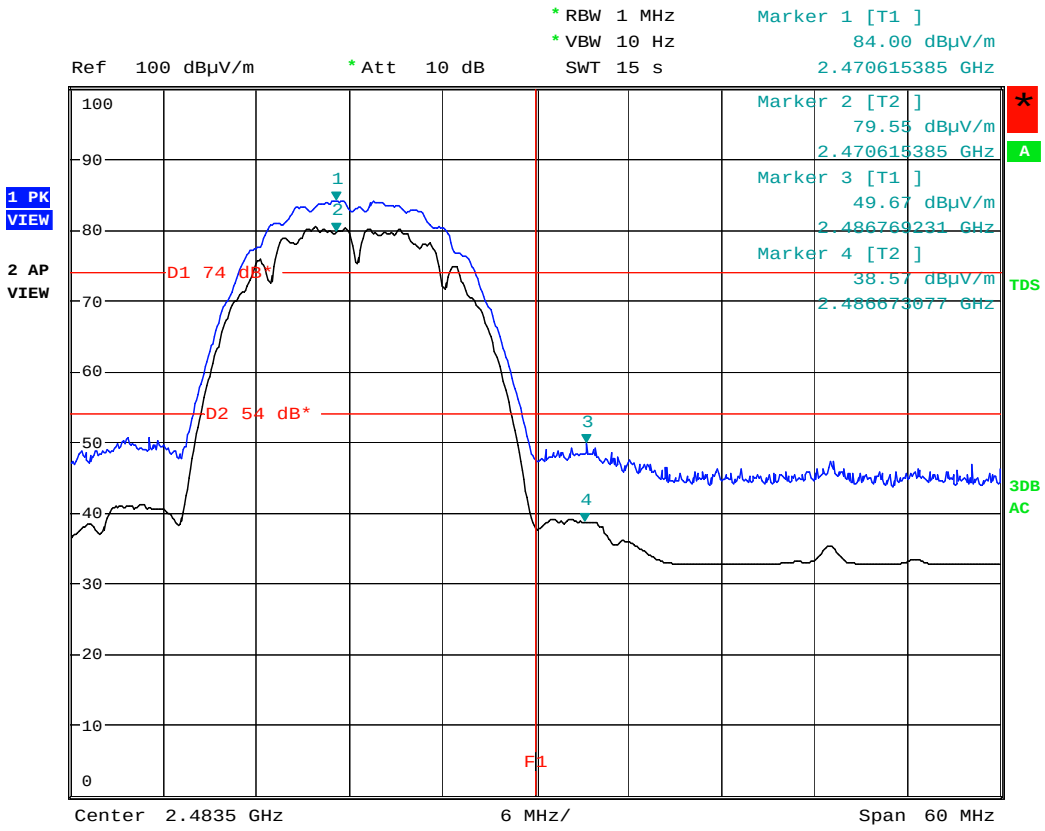
Figure 50: Band Edge Radiated Emission, Mode b1 (2412MHz), Peak and Average



Mode b1, V
Date: 6.APR.2010 17:16:01

Note: The upper trace shows the peak value and the lower trace shows the average value.

Figure 51: Band Edge Radiated Emission, Mode b3 (2472MHz), Peak and Average



Mode b3, H
Date: 6.APR.2010 16:34:24

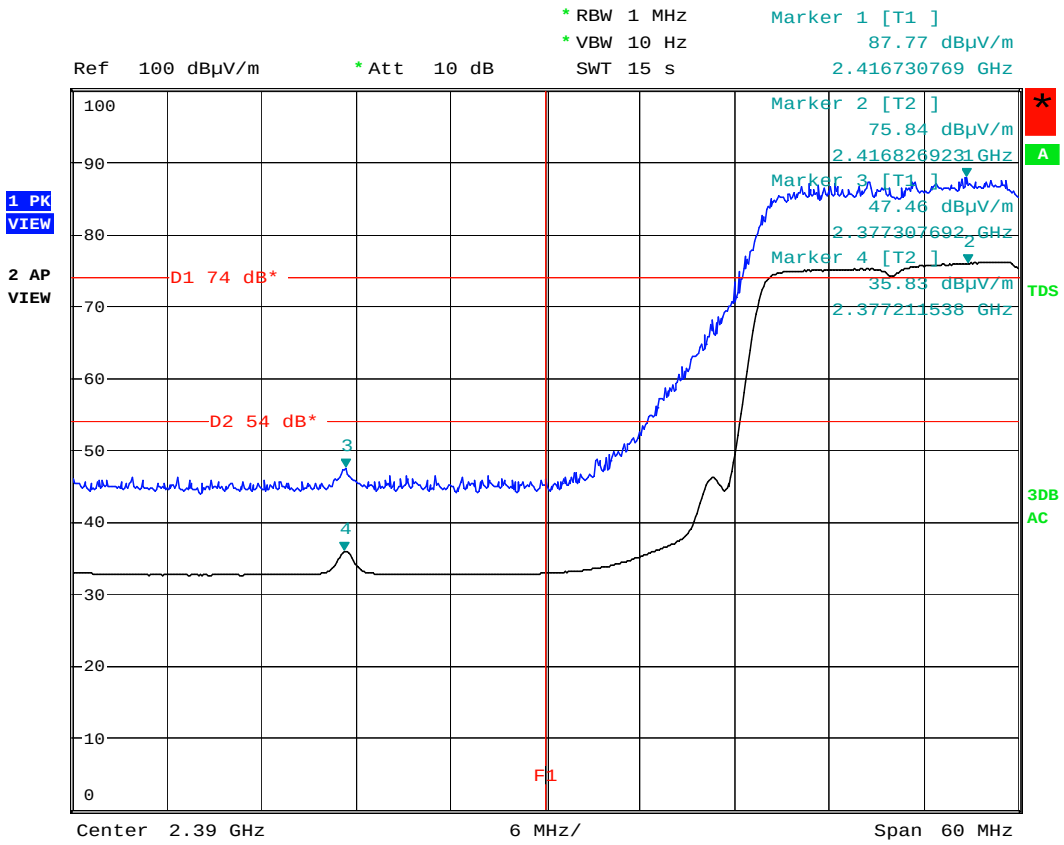
Note: The upper trace shows the peak value and the lower trace shows the average value.

Table 29: Band Edge Radiated Emission, 802.11.g

Operating Frequency [MHz]	EUT / Antenna Orient.	Peak Value [dBuV/m]	Average Value [dBuV/m]	Peak Limit [dBuV/m]	Average Limit [dBuV/m]	Peak Margin [dB]	Average Margin [dB]
2412	X/Y / V	47.46	35.83	74.0	54.0	26.54	18.17
2472	X/Y / V	67.62	41.15	74.0	54.0	6.38	12.85

Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.
Average limit in dBuV/m is calculated as follows: Average limit = 20 x log(500uV/m).
Peak limit in dBuV/m is calculated as follows: Peak limit = Average limit + 20dB.

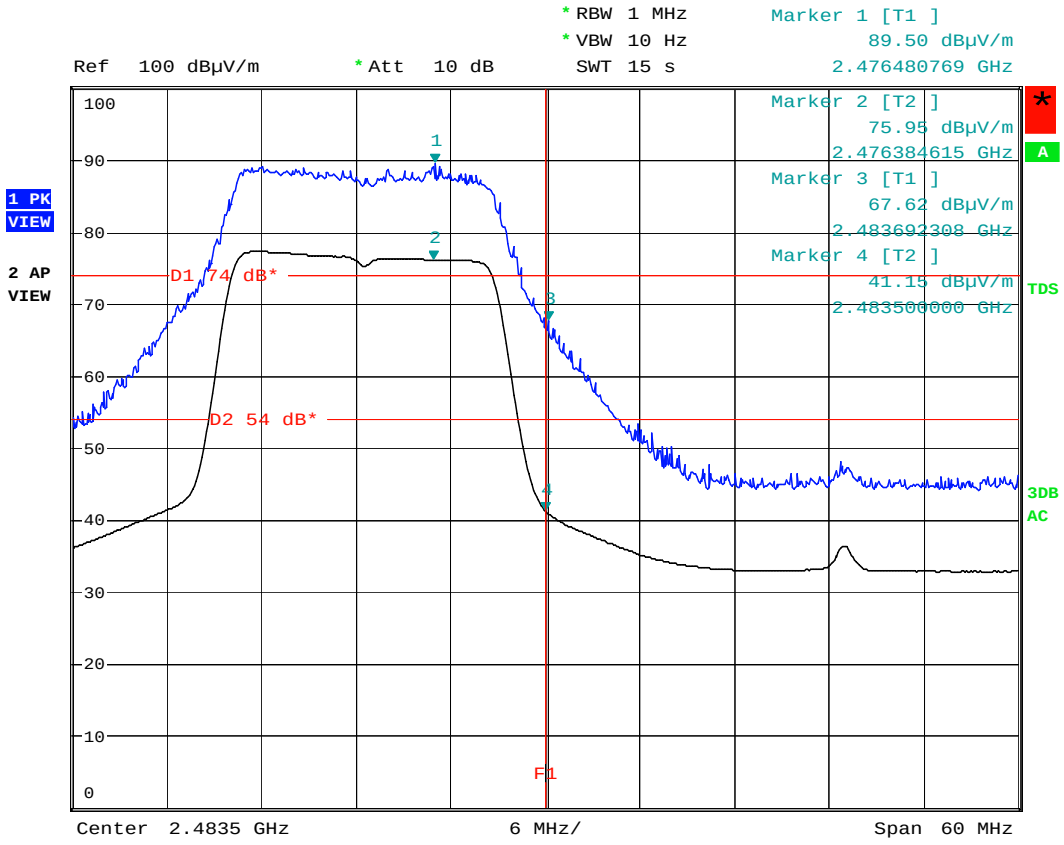
Figure 52: Band Edge Radiated Emission, Mode g1 (2412MHz), Peak and Average



Mode g1, V
Date: 6.APR.2010 16:56:22

Note: The upper trace shows the peak value and the lower trace shows the average value.

Figure 53: Band Edge Radiated Emission, Mode g3 (2472MHz), Peak and Average



Mode g3, V
Date: 6.APR.2010 16:15:46

Note: The upper trace shows the peak value and the lower trace shows the average value.

7.1.2 Radiated Emission, Out-of-Band and Spurious Emission, FCC 15.247(d), FCC 15.205, FCC 15.209, RSS-210 2.2, RSS-210 A8.5 and RSS-Gen 7.2.1

RESULT: **PASS**

Date of testing:	2010-04-06	2010-04-07	2010-04-08
Ambient temperature:	20°C	20°C	20°C
Relative humidity:	40%	45%	43%
Atmospheric pressure:	1009hPa	1006hPa	1019hPa

Frequency range:	9kHz – 25GHz
Measurement distance:	3m
Kind of test site:	Semi Anechoic Chamber

Requirements:
The emissions from the intentional radiator shall not exceed the field strength specified in FCC 15.209(a) and RSS-210 2.7.

Test procedure:
ANSI C63.4-2003, RSS-Gen 4.9, 4.10 and Measurement of Digital Transmission Systems Operating under Section 15.247

Before final measurements of radiated emissions were made in Semi Anechoic Chamber, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the host orientation (X/Y and Z) were varied in order to ensure that maximum emission amplitudes were attained. X/Y orientation was found to conduct the final measurement.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Final radiated emission measurements were made at 3m. The spectrum was examined from 30 MHz to the 10th harmonic of the highest fundamental transmitter frequency (25 GHz).

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

For frequencies between 30MHz and 1GHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1GHz, emissions were measured using following settings: Peak: RBW=1MHz, VBW=1MHz, Average: RBW=1MHz, VBW=10Hz.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Emissions other than those mentioned are small or not detectable.

Table 30: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode b1, 802.11.b

Freq. [MHz]	Antenna polarity	Reading QP [dB(µV)]	Factor [dB(1/m)]	Level QP [dB(µV/m)]	Limit [dB(µV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
71.338	V	54.7	-24.8	29.9	40.0	10.1	108	239
83.584	H	60.0	-27.3	32.7	40.0	7.3	364	35
171.853	H	54.6	-22.8	31.8	43.5	11.7	181	12
184.355	H	66.4	-24.3	42.1	43.5	1.4*	176	11
211.332	H	58.7	-25.2	33.5	43.5	10.0	157	193
471.877	V	53.4	-15.9	37.5	46.0	8.5	237	89

Note: Level QP = Reading QP + Factor

Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 31: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode b1, 802.11.b

Freq. [MHz]	Antenna polarity	Reading AV [dB(µV)]	Reading PK [dB(µV)]	Factor [dB(1/m)]	Level AV [dB(µV/m)]	Level PK [dB(µV/m)]	Limit AV / PK [dB(µV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1080.000	V	63.9	70.5	-16.8	47.1	53.7	54.0 / 74.0	6.9	20.3	183	311
1320.001	V	65.8	68.8	-15.1	50.7	53.7	54.0 / 74.0	3.3*	20.3	103	58
1440.019	H	62.2	68.9	-15.1	47.1	53.8	54.0 / 74.0	6.9	20.2	100	266
2001.949	V	59.7	62.1	-13.6	46.1	48.5	54.0 / 74.0	7.9	25.5	127	186
2127.079	V	58.2	61.1	-13.5	44.7	47.6	54.0 / 74.0	9.3	26.4	108	273
2252.193	V	56.7	59.9	-13.4	43.3	46.5	54.0 / 74.0	10.7	27.5	105	272

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 32: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode b2, 802.11.b

Freq. [MHz]	Antenna polarity	Reading QP [dB(µV)]	Factor [dB(1/m)]	Level QP [dB(µV/m)]	Limit [dB(µV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
50.262	V	53.9	-23.6	30.3	40.0	9.7	102	275
54.571	V	50.8	-23.7	27.1	40.0	12.9	118	349
62.619	H	41.6	-24.1	17.5	40.0	22.5	258	32
62.699	V	51.7	-24.2	27.5	40.0	12.5	103	245
138.374	H	56.4	-23.0	33.4	43.5	10.1	248	183
146.516	V	48.7	-22.9	25.8	43.5	17.7	109	306
205.359	V	53.7	-25.7	28.0	43.5	15.5	151	265
210.274	H	57.1	-25.2	31.9	43.5	11.6	145	203
333.330	H	55.2	-20.3	34.9	46.0	11.1	100	128
433.494	V	57.6	-16.9	40.7	46.0	5.3	242	66
495.006	H	57.2	-16.1	41.1	46.0	4.9	173	53

Note: Level QP = Reading QP + Factor

Table 33: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode b2, 802.11.b

Freq. [MHz]	Antenna polarity	Reading AV [dB(µV)]	Reading PK [dB(µV)]	Factor [dB(1/m)]	Level AV [dB(µV/m)]	Level PK [dB(µV/m)]	Limit AV / PK [dB(µV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1080.038	V	66.4	72.3	-16.8	49.6	55.5	54.0 / 74.0	4.4*	18.5	101	324
1320.007	V	66.7	69.2	-15.1	51.6	54.1	54.0 / 74.0	2.4*	19.9	101	56
1440.008	H	61.8	70.6	-15.1	46.7	55.5	54.0 / 74.0	7.3	18.5	103	324
1680.031	V	49.2	59.1	-14.0	35.2	45.1	54.0 / 74.0	18.8	28.9	196	218
2001.973	V	58.9	61.4	-13.6	45.3	47.8	54.0 / 74.0	8.7	26.2	100	188
3840.641	H	50.2	56.3	-10.5	39.7	45.8	54.0 / 74.0	14.3	28.2	103	169

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 34: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode b3, 802.11.b

Freq. [MHz]	Antenna polarity	Reading QP [dB(µV)]	Factor [dB(1/m)]	Level QP [dB(µV/m)]	Limit [dB(µV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
39.775	V	48.6	-24.1	24.5	40.0	15.5	101	133
50.321	V	49.5	-23.6	25.9	40.0	14.1	100	262
54.591	V	51.0	-23.7	27.3	40.0	12.7	108	352
79.446	V	59.2	-26.5	32.7	40.0	7.3	217	299
83.605	H	59.2	-27.3	31.9	40.0	8.1	364	35
129.744	H	54.0	-23.9	30.1	43.5	13.4	233	185
149.607	H	59.2	-22.5	36.7	43.5	6.8	220	354
205.308	H	59.1	-25.4	33.7	43.5	9.8	142	209
443.302	H	59.2	-17.3	41.9	46.0	4.1*	228	46

Note: Level QP = Reading QP + Factor

Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 35: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode b3, 802.11.b

Freq. [MHz]	Antenna polarity	Reading AV [dB(µV)]	Reading PK [dB(µV)]	Factor [dB(1/m)]	Level AV [dB(µV/m)]	Level PK [dB(µV/m)]	Limit AV / PK [dB(µV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1140.127	V	42.8	69.0	-16.4	26.4	52.6	54.0 / 74.0	27.6	21.4	111	181
1440.035	H	64.0	69.7	-15.1	48.9	54.6	54.0 / 74.0	5.1	19.4	102	267
2001.972	V	62.6	64.3	-13.6	49.0	50.7	54.0 / 74.0	5.0	23.3	110	270
2252.209	V	58.2	60.7	-13.4	44.8	47.3	54.0 / 74.0	9.2	26.7	100	272
3253.185	H	51.4	56.8	-11.4	40.0	45.4	54.0 / 74.0	14.0	28.6	122	190
4800.922	V	46.4	55.8	-9.7	36.7	46.1	54.0 / 74.0	17.3	27.9	104	259

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Table 36: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode g1, 802.11.g

Freq. [MHz]	Antenna polarity	Reading QP [dB(µV)]	Factor [dB(1/m)]	Level QP [dB(µV/m)]	Limit [dB(µV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
75.899	H	56.6	-26.4	30.2	40.0	9.8	306	38
83.780	V	59.5	-27.3	32.2	40.0	7.8	395	129
88.107	H	58.2	-27.4	30.8	43.5	12.7	395	224
138.335	H	54.5	-23.0	31.5	43.5	12.0	241	189
155.070	H	55.9	-22.3	33.6	43.5	9.9	205	350
184.263	H	62.3	-24.3	38.0	43.5	5.5	197	5
431.208	H	60.7	-17.8	42.9	46.0	3.1*	246	33

Note: Level QP = Reading QP + Factor

Table 37: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode g1, 802.11.g

Freq. [MHz]	Antenna polarity	Reading AV [dB(µV)]	Reading PK [dB(µV)]	Factor [dB(1/m)]	Level AV [dB(µV/m)]	Level PK [dB(µV/m)]	Limit AV / PK [dB(µV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1080.012	V	66.9	72.6	-16.8	50.1	55.8	54.0 / 74.0	3.9*	18.2	100	313
1320.014	V	65.3	68.1	-15.1	50.2	53.0	54.0 / 74.0	3.8*	21.0	100	59
1440.016	H	59.9	71.7	-15.1	44.8	56.6	54.0 / 74.0	9.2	17.4	114	48
1920.404	H	44.6	62.7	-13.9	30.7	48.8	54.0 / 74.0	23.3	25.2	197	84
2001.945	V	60.0	62.6	-13.6	46.4	49.0	54.0 / 74.0	7.6	25.0	103	95
2252.205	V	57.6	60.5	-13.4	44.2	47.1	54.0 / 74.0	9.8	26.9	100	273

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.
Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 38: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode g2, 802.11.g

Freq. [MHz]	Antenna polarity	Reading QP [dB(µV)]	Factor [dB(1/m)]	Level QP [dB(µV/m)]	Limit [dB(µV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
79.523	V	56.4	-26.6	29.8	40.0	10.2	204	316
79.410	H	59.1	-27.0	32.1	40.0	7.9	381	222
138.368	H	56.0	-23.0	33.0	43.5	10.5	212	190
150.850	H	62.9	-22.5	40.4	43.5	3.1*	193	13
196.773	H	63.8	-25.4	38.4	43.5	5.1	124	199
213.543	H	63.8	-25.1	38.7	43.5	4.8	167	206
320.046	V	58.2	-20.8	37.4	46.0	8.6	151	158
395.974	H	60.6	-18.5	42.1	46.0	3.9*	102	41
455.187	V	51.8	-16.3	35.5	46.0	10.5	230	84

Note: Level QP = Reading QP + Factor

Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 39: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode g2, 802.11.g

Freq. [MHz]	Antenna polarity	Reading AV [dB(µV)]	Reading PK [dB(µV)]	Factor [dB(1/m)]	Level AV [dB(µV/m)]	Level PK [dB(µV/m)]	Limit AV / PK [dB(µV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1126.092	V	53.9	65.0	-16.6	37.3	48.4	54.0 / 74.0	16.7	25.6	113	129
1440.034	H	64.9	72.5	-15.1	49.8	57.4	54.0 / 74.0	4.2*	16.6	100	269
1560.046	V	54.4	58.2	-14.7	39.7	43.5	54.0 / 74.0	14.3	30.5	100	81
2001.964	V	62.7	64.4	-13.6	49.1	50.8	54.0 / 74.0	4.9	23.2	111	270
2252.213	V	57.2	60.2	-13.4	43.8	46.8	54.0 / 74.0	10.2	27.2	102	270
3002.975	V	49.7	55.8	-12.2	37.5	43.6	54.0 / 74.0	16.5	30.4	103	269

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 40: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode g3, 802.11.g

Freq. [MHz]	Antenna polarity	Reading QP [dB(µV)]	Factor [dB(1/m)]	Level QP [dB(µV/m)]	Limit [dB(µV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
50.231	V	51.9	-23.6	28.3	40.0	11.7	100	265
138.388	H	55.1	-23.0	32.1	43.5	11.4	210	165
150.755	H	61.0	-22.5	38.5	43.5	5.0	213	5
184.369	H	63.7	-24.3	39.4	43.5	4.1*	195	351
205.009	H	63.2	-25.4	37.8	43.5	5.7	187	192
443.393	H	53.9	-17.3	36.6	46.0	9.4	219	43

Note: Level QP = Reading QP + Factor

Uncertainty
(*) The measured result is below the specification limit by a margin less than the measurement uncertainty; it is not therefore possible to determine compliance at a level of confidence of 95%. However, the measured result indicates a higher probability that the product tested complies with the specification limit.

Table 41: Radiated Emission 1GHz – 25GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode g3, 802.11.g

Freq. [MHz]	Antenna polarity	Reading AV [dB(µV)]	Reading PK [dB(µV)]	Factor [dB(1/m)]	Level AV [dB(µV/m)]	Level PK [dB(µV/m)]	Limit AV / PK [dB(µV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1080.025	V	66.0	72.4	-16.8	49.2	55.6	54.0 / 74.0	4.8	18.4	101	312
1440.264	H	54.3	69.7	-15.1	39.2	54.6	54.0 / 74.0	14.8	19.4	103	71
2001.973	V	62.2	64.5	-13.6	48.6	50.9	54.0 / 74.0	5.4	23.1	103	94
2252.237	V	58.7	61.4	-13.4	45.3	48.0	54.0 / 74.0	8.7	26.0	100	275
3296.024	H	51.0	56.6	-11.4	39.6	45.2	54.0 / 74.0	14.4	28.8	107	359
4800.883	V	46.3	56.2	-9.7	36.6	46.5	54.0 / 74.0	17.4	27.5	100	256

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

7.2 Radiated Emission of Receiver

7.2.1 Radiated Emission of Receiver, FCC 15.109, RSS-210 2.2, RSS-210 2.6, RSS-210 A8.5, RSS-Gen 7.2.3.2

RESULT: **PASS**

Date of testing:	2010-04-06	2010-04-07
Ambient temperature:	20°C	20°C
Relative humidity:	40%	45%
Atmospheric pressure:	1009hPa	1006hPa
Frequency range:	30MHz – 12.5GHz	
Equipment classification:	Class B	
Measurement distance:	3m	
Kind of test site:	Semi Anechoic Chamber	

Requirements:
The emissions from the unintentional radiator shall not exceed the field strength specified in 15.109(a) and RSS-210 Table 2 (and RSS-Gen Table 1).

Test procedure:
ANSI C63.4-2003, RSS-Gen 4.9, 4.10

Before final measurements of radiated emissions were made in Semi Anechoic Chamber, the EUT was scanned to determine its emission spectrum profile. The physical arrangement of the test system, the associated cabling and the antenna orientation (X/Y & Z) of the EUT were varied in order to ensure that maximum emission amplitudes were attained. X/Y orientation was found to conduct the final measurement.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Final radiated emission measurements were made at 3m. The spectrum was examined from 30 MHz to the 5th harmonic of the highest fundamental transmitter frequency (12.5 GHz).

At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

For frequencies between 30MHz and 1GHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1GHz, emissions were measured using following settings: Peak: RBW=1MHz, VBW=1MHz, Average: RBW=1MHz, VBW=10Hz.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Emissions other than those mentioned are small or not detectable.

Table 42: Radiated Emission 30MHz – 1GHz, Horizontal & Vertical Antenna Orientations, Quasi Peak Data, Mode R, 802.11.b/g

Freq. [MHz]	Antenna polarity	Reading QP [dB(µV)]	Factor [dB(1/m)]	Level QP [dB(µV/m)]	Limit [dB(µV/m)]	Margin QP [dB]	Height [cm]	Angle [°]
43.835	V	49.2	-23.6	25.6	40.0	14.4	100	153
62.735	V	51.3	-24.2	27.1	40.0	12.9	100	258
75.008	V	51.3	-25.5	25.8	40.0	14.2	101	275
212.222	H	53.3	-25.2	28.1	43.5	15.4	166	47
259.531	H	50.5	-22.9	27.6	46.0	18.4	132	148
319.030	H	55.8	-20.7	35.1	46.0	10.9	101	123
446.285	H	53.6	-17.3	36.3	46.0	9.7	101	71

Note: Level QP = Reading QP + Factor

Table 43: Radiated Emission 1GHz – 12.5GHz, Horizontal & Vertical Antenna Orientations, Peak and Average Data, Mode R, 802.11.b/g

Freq. [MHz]	Antenna polarity	Reading AV [dB(µV)]	Reading PK [dB(µV)]	Factor [dB(1/m)]	Level AV [dB(µV/m)]	Level PK [dB(µV/m)]	Limit AV / PK [dB(µV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [°]
1121.988	V	53.5	67.8	-16.6	36.9	51.2	54.0 / 74.0	17.1	22.8	115	184
1440.030	H	63.2	67.6	-15.1	48.1	52.5	54.0 / 74.0	5.9	21.5	106	213
2001.991	V	62.1	64.0	-13.6	48.5	50.4	54.0 / 74.0	5.5	23.6	100	273
2127.099	V	58.8	61.8	-13.5	45.3	48.3	54.0 / 74.0	8.7	25.7	103	278
3253.232	H	49.9	56.0	-11.4	38.5	44.6	54.0 / 74.0	15.5	29.4	100	197
4800.900	H	44.1	54.6	-9.7	34.4	44.9	54.0 / 74.0	19.6	29.1	100	193

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

9. List of Tables

10. List of Figures

11. List of Photographs