Test Report No. S08EEC01217/03
dated 19 Jun 2008

PSB Singapore

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FORMAL REPORT ON TESTING IN ACCORDANCE WITH
FCC Parts 15B & C : 2007
OF A
DIGITAL VIDEO PLAYER
[Model : DVP-FL0006]
[FCC ID : IBADVPFL0006]

TEST FACILITY	TÜV SÜD PSB Pte Ltd, Electrical & Electronics Centre (EEC), Product Services, 1 Science Park Drive, Singapore 118221
FCC REG. NO.	90937 (3m & 10m OATS) 99142 (10m Anechoic Chamber) 871638 (3m Anechoic Chamber) 325572 (10m Anechoic Chamber) C-2305 (C.E @ Lab 6), C-2306 (C.E @ Lab 3) T-212 (Telecom Ports @ Lab 6), T-213 (Telecom Ports @ Lab 3)
IND. CANADA REG. NO.	IC 4257 (3m and 10m Anechoic Chambers)
PREPARED FOR	Ms Lee Kim Kooi Creative Technology Ltd 31 International Business Park Creative Resource Singapore 609921 Tel : +65 6895 4252 Fax : +65 6895 4050
QUOTATION NUMBER	Q08EEC01396
JOB NUMBER	S08EEC01217
TEST PERIOD	16 May 2008

PREPARED BY

Quek Keng Huat
Associate Engineer

APPROVED BY

Lim Cher Hwee
Assistance Vice President

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LA-2007-0380-A
LA-2007-0380-A-1
LA-2007-0381-F
LA-2007-0382-B
LA-2007-0383-G
LA-2007-0384-G
LA-2007-0385-E
LA-2007-0386-C

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests/Calibrations marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.

Laboratory:
TÜV SÜD PSB Pte. Ltd.
Testing Services
No.1 Science Park Drive
Singapore 118221

Phone : +65-6885 1333
Fax : +65-6776 8670
E-mail: testing@tuv-sud-psb.sg
www.tuv-sud-psb.sg
Co. Reg : 199002667R

Regional Head Office:
TÜV SÜD Asia Pacific Pte. Ltd.
3 Science Park Drive, #04-01/05
The Franklin, Singapore 118223

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TEST SUMMARY

The product was tested in accordance with the customer's specifications.

Test Results Summary

Test Standard	Description	Pass / Fail
FCC Part 15: 2007		
15.107(a), 15.207	Conducted Emissions	Pass
15.109(a), 15.205, 15.209	Radiated Emissions (Spurious Emissions inclusive Restricted Bands Requirement)	Pass
15.247(a)(2)	Spectrum Bandwidth (6dB Bandwidth Measurement)	Pass
15.247(b)(3)	Maximum Peak Power	Pass
15.247(d)	RF Conducted Spurious Emissions	Pass
15.247(d)	Band Edge Compliance (Conducted)	Pass
15.247(d)	Band Edge Compliance (Radiated)	Pass
15.247(e)	Peak Power Spectral Density	Pass
15.35(c)	Duty Cycle Factor Computation	See Note 5

TEST SUMMARY

Notes

1. The channels as listed below, which respectively represent the lower, middle and upper channels of the Equipment Under Test (EUT) when operating in WLAN 802.11b and WLAN 802.11g modes. For each channel, the EUT was configured to operate in the test mode.

WLAN 802.11b

Transmit Channel	Frequency (GHz)	Modulation	Data Rate
Channel 1	2.412	DBPSK	1Mbps
Channel 6	2.437	DBPSK	1Mbps
Channel 11	2.462	DBPSK	1Mbps
Channel 1	2.412	DQPSK	2Mbps
Channel 6	2.437	DQPSK	2Mbps
Channel 11	2.462	DQPSK	2Mbps
Channel 1	2.412	CCK	11Mbps
Channel 6	2.437	CCK	11Mbps
Channel 11	2.462	CCK	11Mbps

WLAN 802.11g

Transmit Channel	Frequency (GHz)	Modulation	Data Rate
Channel 1	2.412	BPSK	9Mbps
Channel 6	2.437	BPSK	9Mbps
Channel 11	2.462	BPSK	9Mbps
Channel 1	2.412	QPSK	18Mbps
Channel 6	2.437	QPSK	18Mbps
Channel 11	2.462	QPSK	18Mbps
Channel 1	2.412	16QAM	36Mbps
Channel 6	2.437	16QAM	36Mbps
Channel 11	2.462	16QAM	36Mbps
Channel 1	2.412	64QAM	54Mbps
Channel 6	2.437	64QAM	54Mbps
Channel 11	2.462	64QAM	54Mbps

2. The EUT is a Class B device when in non-transmitting state and meets the FCC Part15B Class B requirements.

3. All test measurement procedures are according to ANSI C63.4: 2003.

4. All the measurements in section 15.247 were done based on conducted measurements except band edge compliance (radiated) test.

5. The EUT was exercised in a continuous transmit mode (100% duty cycle) during the test, ie, duty cycle factor is 0dB.

Modifications

No modifications were made.

PRODUCT DESCRIPTION

Description	:	The Equipment Under Test (EUT) is a **DIGITAL VIDEO PLAYER.** Its support a. MP3 & MP4 Playback. b. MIC Recording. c. FM Radio. d. WLAN Connection. e. Speaker Mode.
Manufacturer	:	Creative Technology Ltd.
Model Number	:	DVP-FL0006
FCC ID	:	IBADVPFL0006
Serial Number	:	Nil
Microprocessor	:	STMP3760
Operating / Transmitting Frequency	:	2.412GHz (lower channel) to 2.462GHz (upper channel) 3 channels in total.
Clock / Oscillator Frequency	:	24MHz
Modulation	:	DBPSK, DQPSK, CCK, BPSK, QPSK, 16QAM & 64QAM
Antenna Gain	:	-3.5 dBi
Port / Connectors	:	Refer to manufacturer's user manual / operating manual.
Rated Input Power	:	5Vdc via connected host
Accessories	:	Refer to manufacturer's user manual / operating manual.

SUPPORTING EQUIPMENT DESCRIPTION

Equipment Description (Including Brand Name)	**Model, Serial & FCC ID Number**	**Cable Description** (List Length, Type & Purpose)
HP Pavilion PC	M/N: W5000 S/N: CDZ52000WW FCC ID: DoC	2.00m unshielded power cable 1.50m standard RJ45 cable
Yion LCD Monitor	M/N: CL-170EA S/N: Z8AF0751511000005X FCC ID: DoC	2.00m unshielded power cable 1.50m standard VGA cable
Power Adapter (LCD Monitor)	M/N: STD-1204 S/N: Nil FCC ID: DoC	2.00m unshielded power cable
Linksys Wireless Broadband Router	M/N: WRT54G S/N: CDF50D4H7060 FCC ID: DoC	2.00m unshielded power cable 1.50m standard RJ45 cable
NetgearPower Adapter (Linksys Wireless Broadband Router)	M/N: DSA-0151F-12K S/N: 2406HB FCC ID: Verification	2.00m unshielded power cable 1.50m standard RJ45 cable
Dell Keyboard	M/N: SK-840 S/N: CN-07N242-716-518-01HM FCC ID: DoC	1.80m standard keyboard cable
Dell Mouse	M/N: M-860 S/N: LZA32056538 FCC ID: JNZ211448	1.80m standard mouse cable

EUT OPERATING CONDITIONS

FCC Part 15
1. Conducted Emissions **2. Radiated Emissions (Spurious Emissions inclusive Restricted Bands Requirement)**
The EUT was exercised in following modes during the tests: a. maximum continuous transmission in test mode, i.e transmitting at lower, middle and upper channels respectively at one time. b. The EUT was exercised in file transfer mode. c. The EUT was exercised in video playback mode.
FCC Part 15
1. Spectrum Bandwidth (6dB Bandwidth Measurement) **2. Maximum Peak Power** **3. RF Conducted Spurious Emissions** **4. Band Edge Compliance (Conducted)** **5. Band Edge Compliance (Radiated)** **6. Peak Power Spectral Density**
The EUT was exercised in following modes during the tests: a. maximum continuous transmission in test mode, i.e transmitting at lower, middle and upper channels respectively at one time.

CONDUCTED EMISSION TEST

FCC Parts 15.107(a) and 15.207 Conducted Emission Limits

Frequency Range (MHz)	Limit Values (dBµV)	
	Quasi-peak (QP)	Average (AV)
0.15 - 0.5	66 – 56 *	56 – 46 *
0.5 - 5.0	56	46
5.0 - 30.0	60	50
* Decreasing linearly with the logarithm of the frequency		

FCC Parts 15.107(a) and 15.207 Conducted Emission Test Instrumentation

Instrument	Model	S/No	Cal Due Date
R&S Test Receiver – ESI1	ESI40	100010	06 Aug 2008
Schaffner LISN – LISN7 (for EUT)	NNB42	00008	15 Aug 2008
R&S Pulse Limiter – PL1	ESH3-Z2	357.8810.52	16 Apr 2009
EMCO LISN – LISN3 (supporting)	3850/2	9903-1075	03 Jul 2008

CONDUCTED EMISSION TEST

FCC Parts 15.107(a) and 15.207 Conducted Emission Test Setup

1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table.
2. The power supply for the EUT was fed through a 50Ω/50μH EUT LISN, connected to filtered mains.
3. The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable.
4. All other supporting equipment were powered separately from another LISN.

FCC Parts 15.107(a) and 15.207 Conducted Emission Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. A scan was made on the NEUTRAL line over the required frequency range using an EMI test receiver.
3. High peaks, relative to the limit line, were then selected.
4. The EMI test receiver was then tuned to the selected frequencies and the necessary measurements made with a receiver bandwidth setting of 10kHz. Both Quasi-peak and Average measurements were made.
5. Steps 2 to 4 were then repeated for the LIVE line.

Sample Calculation Example

At 20 MHz Q-P limit (Class B) = 1000 μV = 60.0 dBμV

Transducer factor of LISN, pulse limiter & cable loss at 20 MHz = 11.2 dB

Q-P reading obtained directly from EMI Receiver = 40.0 dBμV
(Calibrated for system losses)

Therefore, Q-P margin = 40.0 - 60.0 = -20.0 i.e. **20.0 dB below Q-P limit**

CONDUCTED EMISSION TEST

FCC Parts 15.107(a) and 15.207 Conducted Emission Results

Operating Mode	Continuous Transmit	Temperature	23°C
Test Input Power	110V 60Hz	Relative Humidity	60%
Line Under Test	AC Mains	Atmospheric Pressure	1030mbar
Class	B	Tested By	Vijoy Simon

Frequency (MHz)	Q-P Value (dBµV)	Q-P Margin (dB)	AV Value (dBµV)	AV Margin (dB)	Line
0.5957	42.5	-13.5	27.5	-18.5	Neutral
0.8014	44.3	-11.7	30.1	-15.9	Neutral
1.0019	44.7	-11.3	29.2	-16.8	Neutral
1.1945	42.1	-13.9	26.7	-19.3	Neutral
1.3339	44.4	-11.6	28.0	-18.0	Live
1.3755	43.8	-12.2	29.2	-16.8	Neutral

Operating Mode	Video Playback (non-RF worst mode)	Temperature	23oC
Test Input Power	110V 60Hz	Relative Humidity	60%
Line Under Test	AC Mains	Atmospheric Pressure	1030mbar
Class	B	Tested By	Vijoy Simon

Frequency (MHz)	Q-P Value (dBµV)	Q-P Margin (dB)	AV Value (dBµV)	AV Margin (dB)	Line
0.5828	40.3	-15.7	22.9	-23.1	Neutral
0.7653	42.8	-13.2	28.2	-17.8	Neutral
1.0336	40.8	-15.2	23.8	-22.2	Live
1.1493	40.3	-15.7	22.8	-23.2	Neutral
1.2283	40.1	-15.9	23.9	-22.1	Live
1.3613	42.4	-13.6	29.8	-16.2	Neutral

Notes

1. All possible modes of operation were investigated from 150kHz to 30MHz. Only the worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. EMI receiver Resolution Bandwidth (RBW) and Video Bandwidth (VBW) settings:
   9kHz - 30MHz
   RBW: 10kHz VBW: 30kHz
4. Conducted Emissions Measurement Uncertainty
   All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95%, with a coverage factor of 2, in the range 9kHz – 30MHz is ±3.0dB.

RADIATED EMISSION TEST

FCC Part 15.205 Restricted Bands

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	Above 38.6
13.36 - 13.41			

FCC Parts 15.109(a) and 15.209 Radiated Emission Limits

Frequency Range (MHz)	Quasi-Peak Limit Values (dBµV/m) @ 3m
30 - 88	40.0
88 - 216	43.5
216 - 960	46.0
Above 960	54.0*
* Above 1GHz, average detector was used. A peak limit of 20dB above the average limit does apply.	

FCC Parts 15.109(a) and 15.209 Radiated Emission Test Instrumentation

Instrument	Model	S/No	Cal Due Date
R&S Test Receiver (20Hz-26.5GHz) – ESMI3	ESMI	829214/005 829550/004	21 Nov 2008
Schaffner Preamplifier (9kHz-2GHz) – PA19	CPA9231A	18763	11 Jan 2009
MITEQ Preamplifier (0.1-26.5GHz) – PA4	NSP2650-N	604879	26 Jan 2009
Schaffner Bilog Antenna – BL3 (Ref)	CBL6112B	2549	16 Nov 2008
EMCO Horn Antenna – H14	3115	0003-6087	18 May 2008
Mirco-Tronics 2.4GHz Bandstop Filter	BRM50701	042	13 Aug 2008

RADIATED EMISSION TEST

FCC Parts 15.109(a) and 15.209 Radiated Emission Test Setup

1. The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m X 1.0m X 0.8m high, non-metallic table.
2. The filtered power supply for the EUT and supporting equipment were tapped from the appropriate power sockets located on the turntable.
3. The relevant broadband antenna was set at the required test distance away from the EUT and supporting equipment boundary.

FCC Parts 15.109(a) and 15.209 Radiated Emission Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. A prescan was carried out to pick the worst emission frequencies from the EUT. For EUT which is a portable device, the prescan was carried out by rotating the EUT through three orthogonal axes to determine which altitude and equipment arrangement produces such emissions.
3. The test was carried out at the selected frequency points obtained from the prescan in step 2. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
   a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
   b. The EUT was then rotated to the direction that gave the maximum emission.
   c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
4. A Quasi-peak measurement was made for that frequency point if it was less than or equal to 1GHz. For frequency point that above 1GHz, both Peak and Average measurements were carried out.
5. Steps 3 and 4 were repeated for the next frequency point, until all selected frequency points were measured.
6. The frequency range covered was from 30MHz to 10th harmonics of the EUT fundamental frequency, using the Bi-log antenna for frequencies from 30MHz up to 1GHz, and the Horn antenna above 1GHz.

Sample Calculation Example

At 300 MHz Q-P limit (Class B) = 200 μV/m = 46.0 dBμV/m

Log-periodic antenna factor & cable loss at 300 MHz = 18.5 dB

Q-P reading obtained directly from EMI Receiver = 40.0 dBμV/m
(Calibrated level including antenna factors & cable losses)

Therefore, Q-P margin = 40.0 - 46.0 = -6.0 i.e. **6 dB below Q-P limit**

RADIATED EMISSION TEST

FCC Parts 15.109(a), 15.205 and 15.209 Radiated Emission Results

Operating Mode	Continuous Transmit	Temperature	22°C
Test Input Power	110V 60Hz	Relative Humidity	60%
Test Distance	3m	Atmospheric Pressure	1040mbar
Class	B	Tested By	Anthony Toh

Emissions ranging from 30MHz – 1GHz

Frequency (MHz)	Q-P Value (dBµV/m)	Q-P Margin (dB)	Azimuth (Degrees)	Height (cm)	Polarisation (H/V)	Channel
38.9500	39.0	-1.0	104	331	V	1
75.9370	34.7	-5.3	100	355	V	1
94.2250	34.6	-8.9	100	318	V	1
366.3640	35.4	-10.6	100	323	H	1
422.5160	38.0	-8.0	191	241	H	1
745.1810	36.7	-9.3	100	157	H	1

Emissions above 1GHz

Frequency (GHz)	Peak Value (dBµV/m)	Average Value (dBµV/m) *See Note 3	Average Margin (dB) *See Note 4	Azimuth (Degrees)	Height (cm)	Pol (H/V)	Channel
4.8060	39.3	--	-14.7	100	112	H	1
7.2030	31.5	--	-22.5	100	359	H	1
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

FCC Parts 15.109(a), 15.205 and 15.209 Radiated Emission Results (continued)

Operating Mode	File Transfer (non-RF worst mode)	Temperature	22°C
Test Input Power	110V 60Hz	Relative Humidity	60%
Test Distance	3m	Atmospheric Pressure	1040mbar
Class	B	Tested By	Anthony Toh

Emissions ranging from 30MHz – 1GHz

Frequency (MHz)	Q-P Value (dBµV/m)	Q-P Margin (dB)	Azimuth (Degrees)	Height (cm)	Polarisation (H/V)
41.5400	35.0	-5.0	100	227	V
47.5770	34.1	-5.9	100	194	V
84.4980	35.2	-4.8	100	139	V
114.6730	41.1	-2.4	100	144	V
189.8300	35.4	-8.1	100	124	V
239.9740	39.1	-6.9	132	103	V

Emissions above 1GHz

Frequency (GHz)	Peak Value (dBµV/m)	Average Value (dBµV/m)	Average Margin (dB)	Azimuth (Degrees)	Height (cm)	Pol (H/V)
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--

Notes

1. All possible modes of operation were investigated. Only the worst case emissions measured, using the correct CISPR detectors, are reported. All other emissions were relatively insignificant.
2. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
3. As the measured peak shows compliance to the average limit, as such no average measurement was required.
4. The average margin indicates the margin of the measured peak value below the average limit.
5. "--" indicates no emissions were found and shows compliance to the limits.
6. Quasi-peak measurement was used for frequency measurement up to 1GHz. Average and peak measurements were used for emissions above 1GHz. The average measurement was done by averaging over a complete cycle of the pulse train, including the blanking interval as the pulse train duration does not exceed 0.1 second.

7. A "-ve" margin indicates a PASS as it refers to the margin present below the limit line at the particular frequency.
8. EMI receiver Resolution Bandwidth (RBW) and Video Bandwidth (VBW) settings:
   30MHz - 1GHz
   RBW: 120kHz VBW: 1MHz
   >1GHz
   RBW: 1MHz VBW: 1MHz
9. The upper frequency of radiated emission investigations was according to requirements stated in Section 15.33(a) for intentional radiators & Section 15.33(b) for unintentional radiators.
10. The channel in the table refers to the transmit channel of the EUT.
11. Radiated Emissions Measurement Uncertainty
    All test measurements carried out are traceable to national standards. The uncertainty of the measurement at a confidence level of approximately 95%, with a coverage factor of 2, in the range 30MHz – 25GHz is ±4.6dB.

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

FCC Part 15.247(a)(2) Spectrum Bandwidth (6dB Bandwidth Measurement) Limits

The EUT shows compliance to the requirements of this section, which states that the minimum bandwidth of the EUT employing digital modulation techniques shall be at least 500kHz.

FCC Part 15.247(a)(2) Spectrum Bandwidth (6dB Bandwidth Measurement) Test Instrumentation

Instrument	Model	S/No	Cal Due Date
Bird 10dB Attenuator	10-18A-MFN-XX	10dB 1/5	17 Jan 2009
HP Spectrum Analyzer	8563E	3846A09953	14 Sep 2008

FCC Part 15.247(a)(2) Spectrum Bandwidth (6dB Bandwidth Measurement) Test Setup

1. The EUT and supporting equipment were set up as shown in the setup photo.
2. The power supply for the EUT was connected to a filtered mains.
3. The RF antenna connector was connected to the spectrum analyser via a low-loss coaxial cable.
4. The resolution bandwidth (RBW) and the video bandwidth (VBW) of the spectrum analyser were respectively set to 100kHz and 300kHz.
5. All other supporting equipment were powered separately from another filtered mains.

FCC Part 15.247(a)(2) Spectrum Bandwidth (6dB Bandwidth Measurement) Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition. The EUT was then configured to operate in the test mode at Channel 1 (2.412GHz).
2. The center frequency of the spectrum analyser was set to the transmitting frequency with the frequency span wide enough to capture the 6dB bandwidth of the transmitting frequency.
3. The spectrum analyser was set to max hold to capture the transmitting frequency. The signal capturing was continuous until no further changes were observed.
4. The peak of the transmitting frequency was detected with the marker peak function of the spectrum analyser. The frequencies below the 6dB peak frequency at lower (f_L) and upper (f_H) sides of the transmitting frequency were marked and measured by using the marker-delta function of the spectrum analyser.
5. The 6dB bandwidth of the transmitting frequency is the frequency difference between the marked lower and upper frequencies, $| f_H - f_L |$.
6. The steps 2 to 5 were repeated with the transmitting frequency was set to Channel 6 (2.437GHz) and Channel 11 (2.462GHz) respectively.

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

FCC Part 15.247(a)(2) Spectrum Bandwidth (6dB Bandwidth Measurement) Results

Test Input Power	110V 60Hz	Temperature	23°C
Attached Plots	1 - 21	Relative Humidity	58%
		Atmospheric Pressure	1030mbar
		Tested By	Song Zhi Qun

802.11b @ 1Mbps

Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)
1	2.412	8.200
6	2.437	8.270
11	2.264	8.270

802.11b @ 2Mbps

Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)
1	2.412	8.300
6	2.437	8.370
11	2.264	8.430

802.11b @ 11Mbps

Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)
1	2.412	8.470
6	2.437	8.100
11	2.264	8.400

802.11g @ 9Mbps

Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)
1	2.412	16.580
6	2.437	16.750
11	2.264	16.750

802.11g @ 18Mbps

Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)
1	2.412	16.750
6	2.437	16.670
11	2.264	16.750

802.11g @ 36Mbps

Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)
1	2.412	16.580
6	2.437	16.420
11	2.264	16.750

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

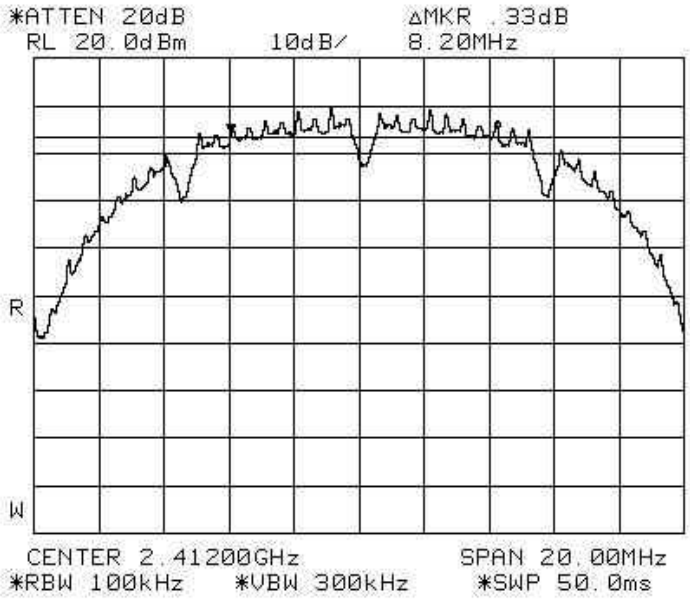
FCC Part 15.247(a)(2) Spectrum Bandwidth (6dB Bandwidth Measurement) Results (continued)

802.11g @ 54Mbps

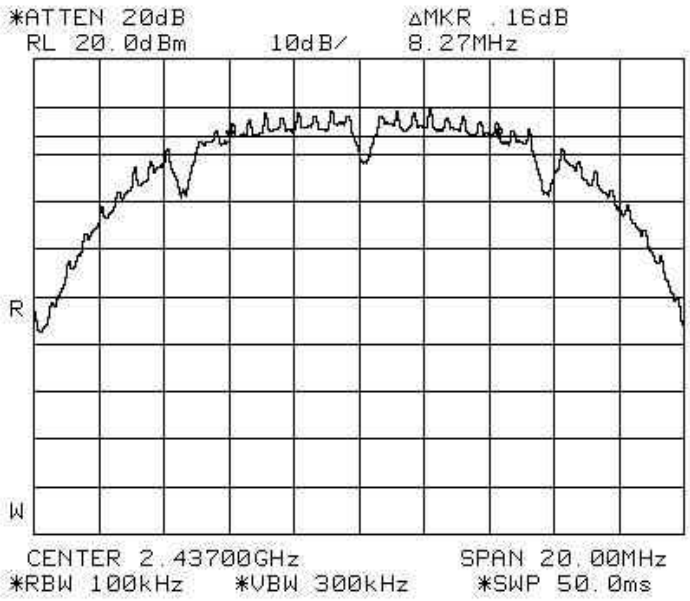
Channel	Channel Frequency (GHz)	6dB Bandwidth (MHz)
1	2.412	16.580
6	2.437	16.670
11	2.264	16.500

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11b @ 1Mbps



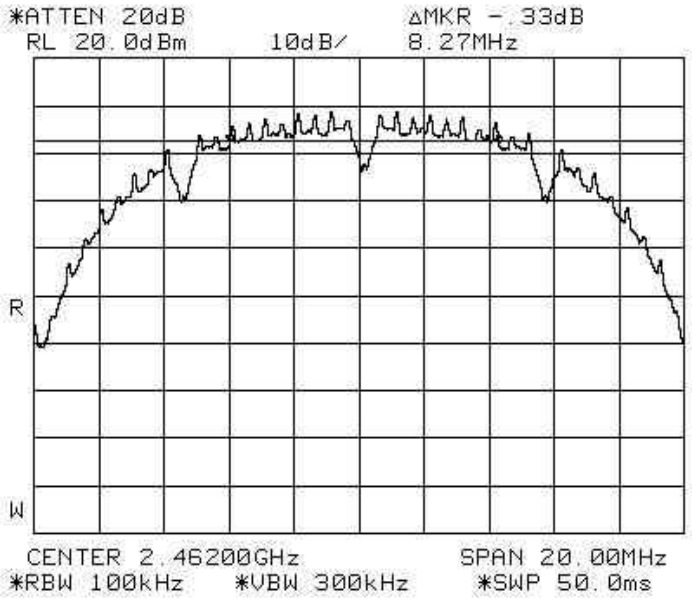
Plot 1 - Channel 1



Plot 2 - Channel 6

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

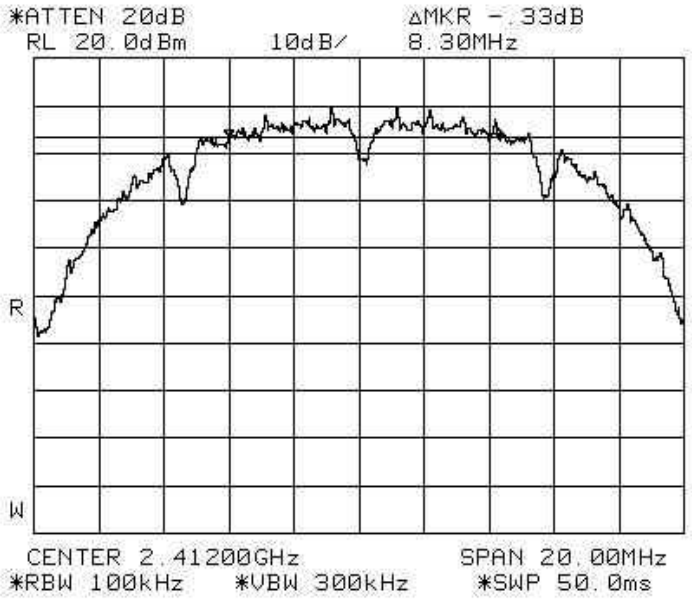
Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11b @ 1Mbps



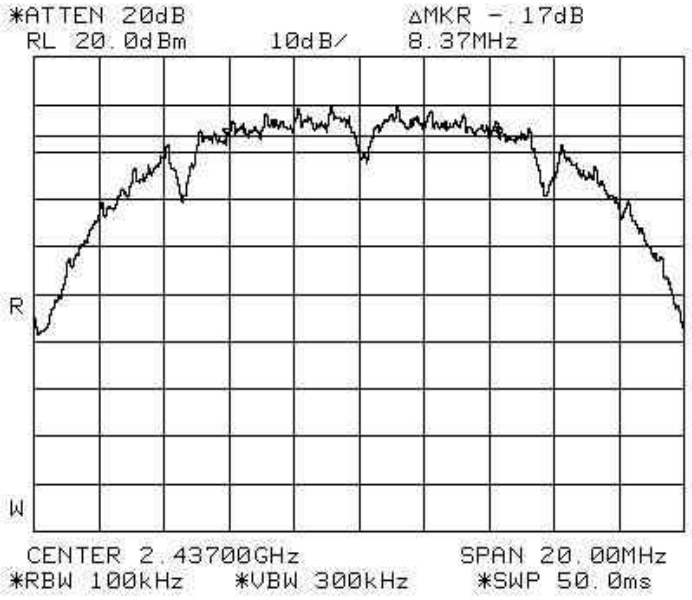
Plot 3 - Channel 11

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11b @ 2Mbps



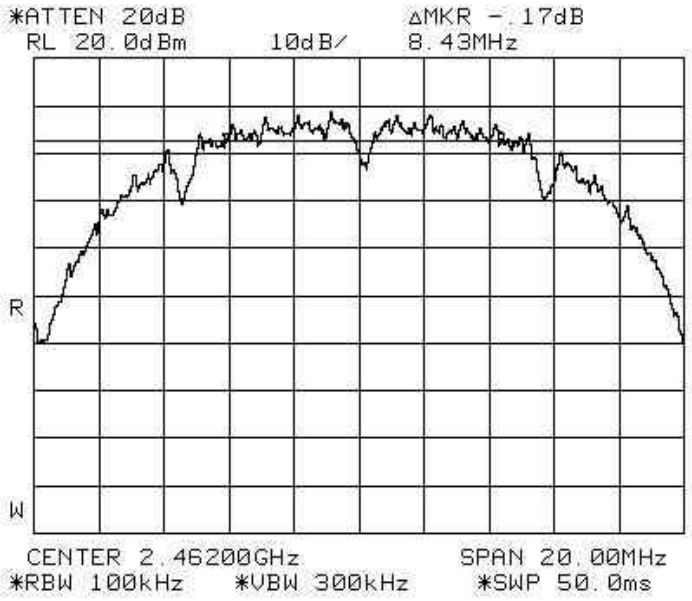
Plot 4 - Channel 1



Plot 5 - Channel 6

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

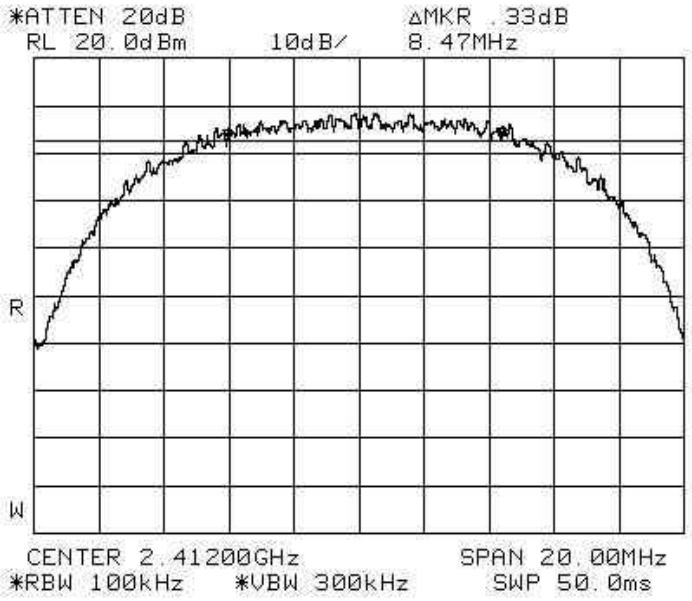
Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11b @ 2Mbps



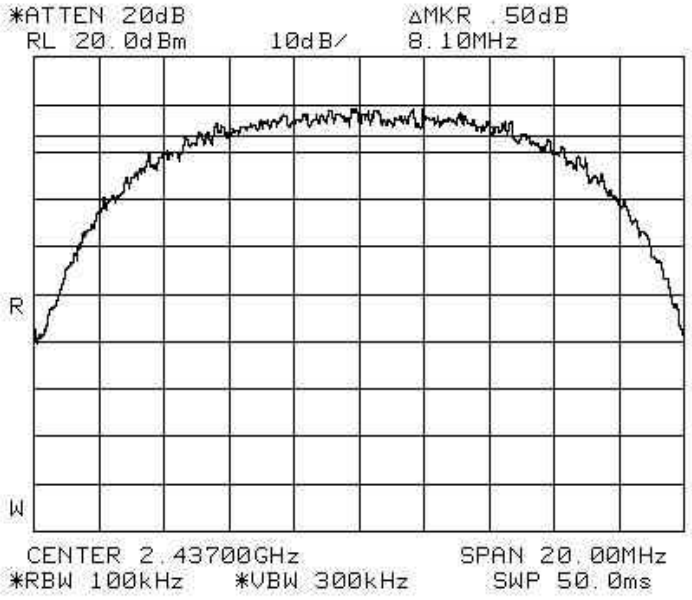
Plot 6 - Channel 11

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11b @ 11Mbps



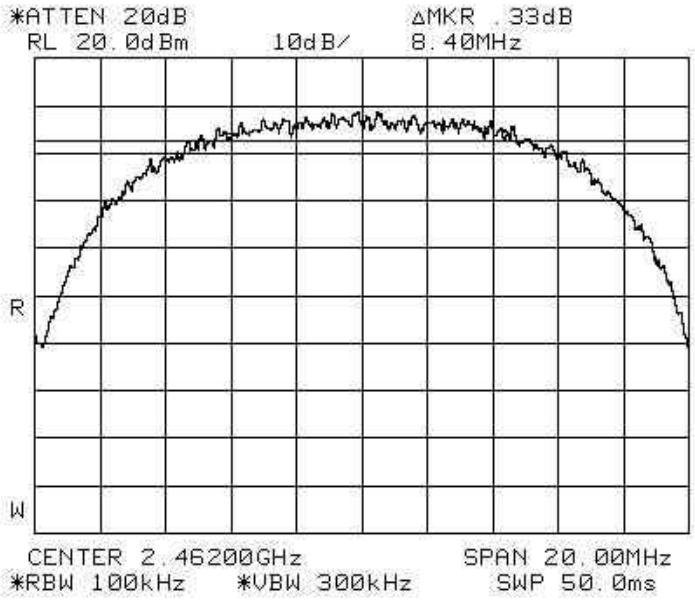
Plot 7 - Channel 1



Plot 8 - Channel 6

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

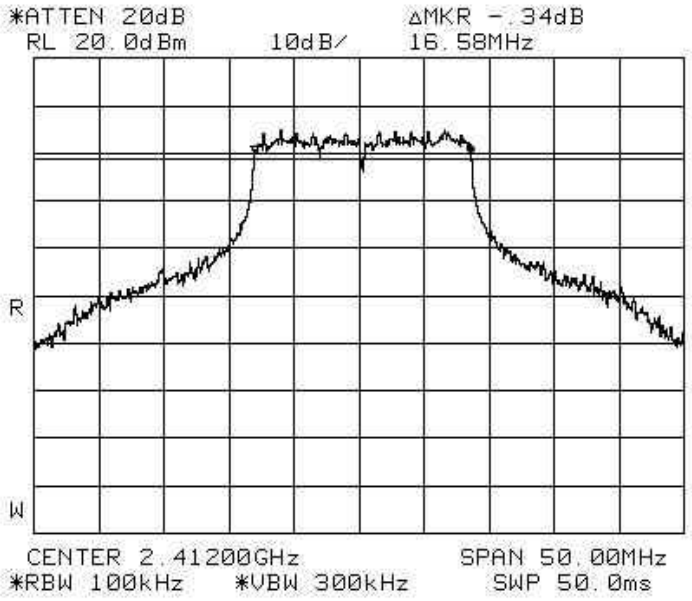
Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11b @ 11Mbps



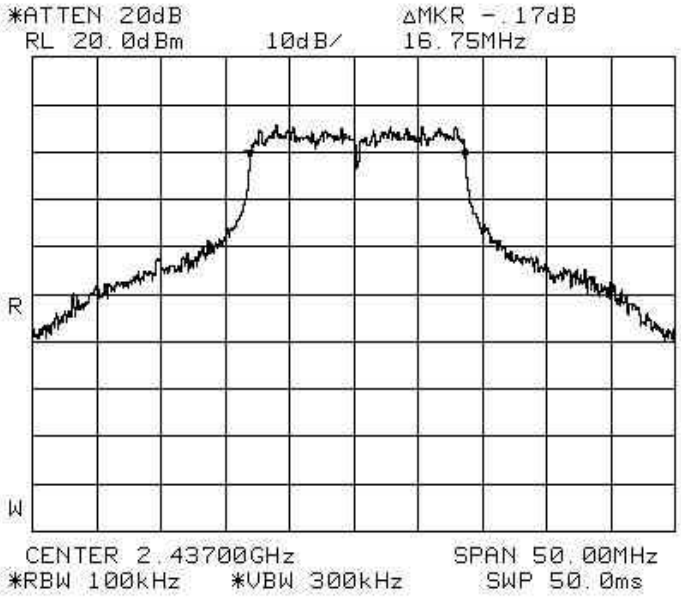
Plot 9 - Channel 11

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 9Mbps



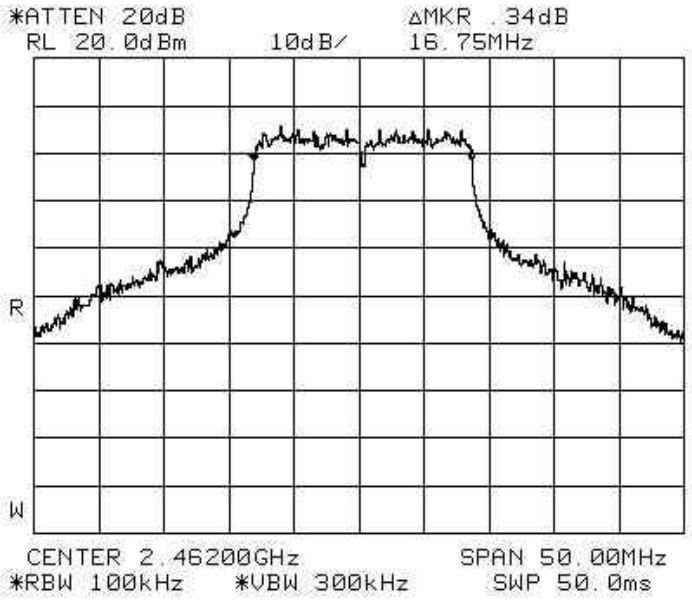
Plot 10 - Channel 1



Plot 11 - Channel 6

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

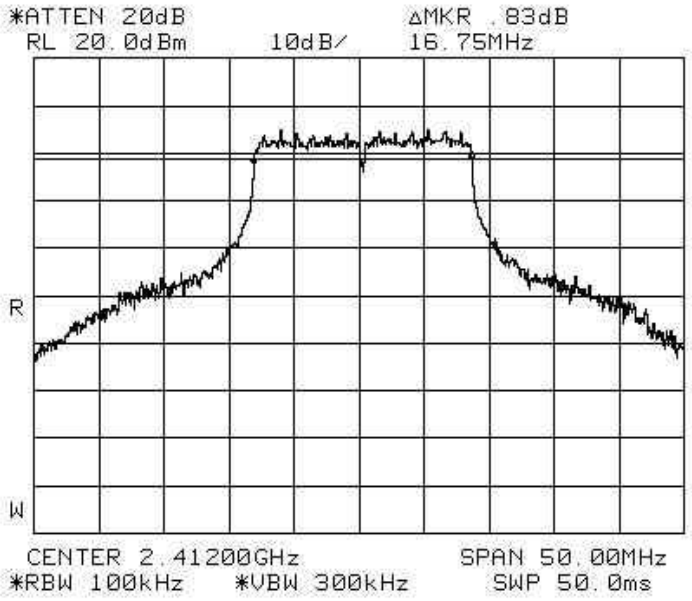
Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 9Mbps



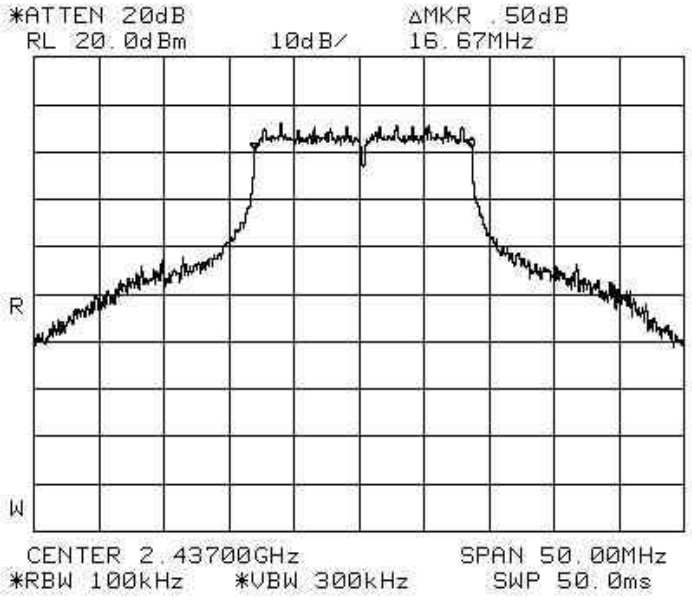
Plot 12 - Channel 11

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 18Mbps



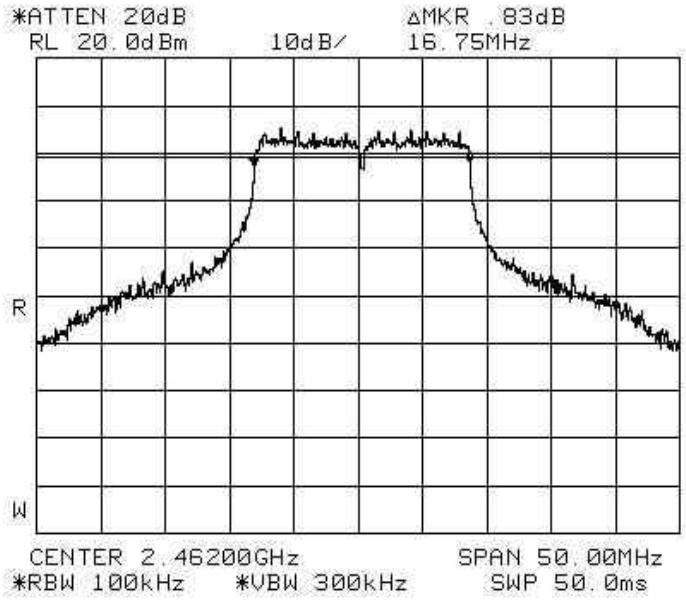
Plot 13 - Channel 1



Plot 14 - Channel 6

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

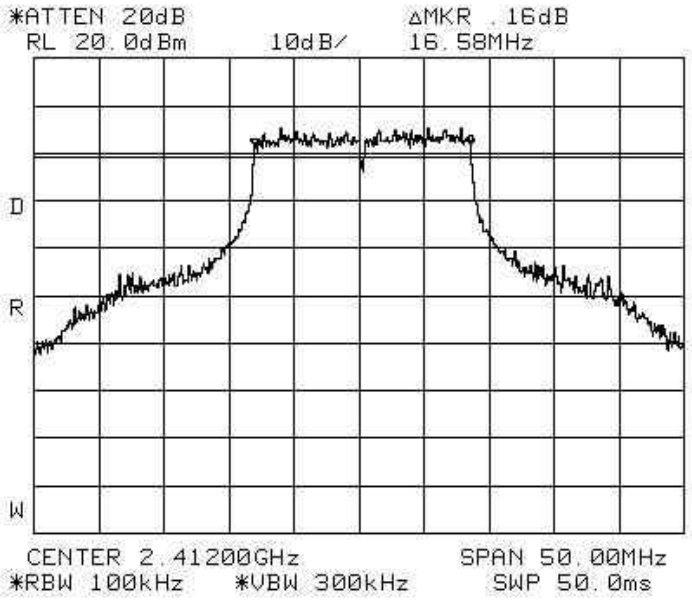
Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 18Mbps



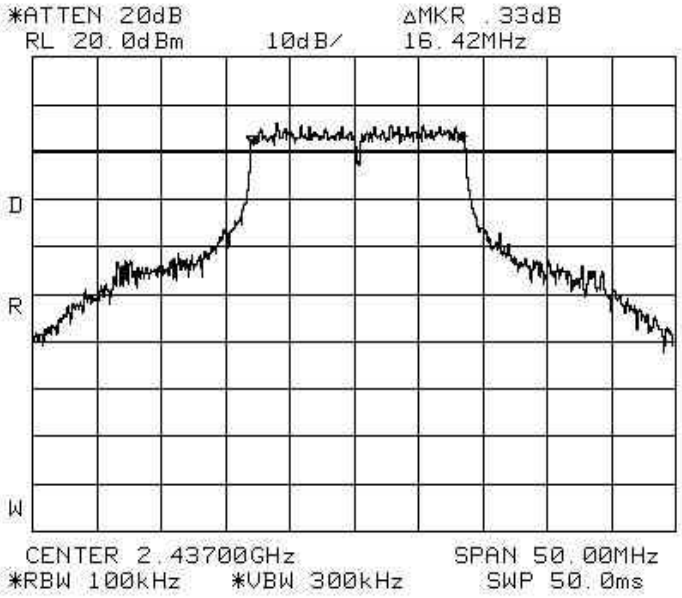
Plot 15 - Channel 11

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 36Mbps



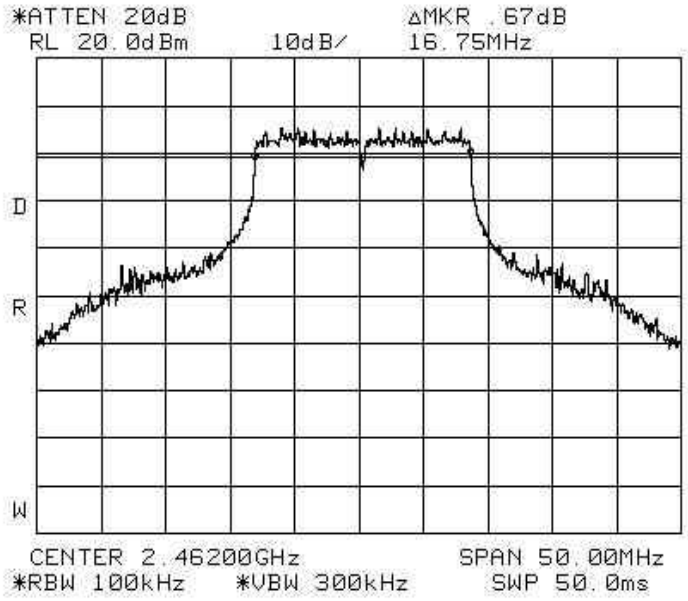
Plot 16 - Channel 1



Plot 17 - Channel 6

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

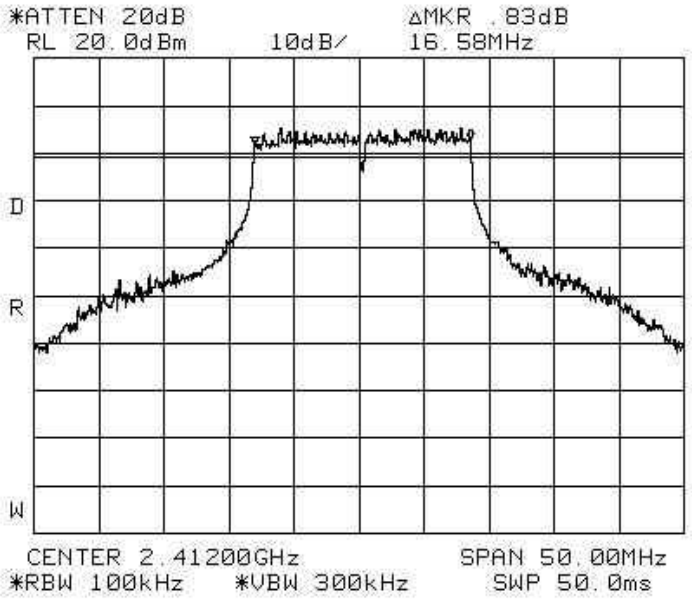
Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 36Mbps



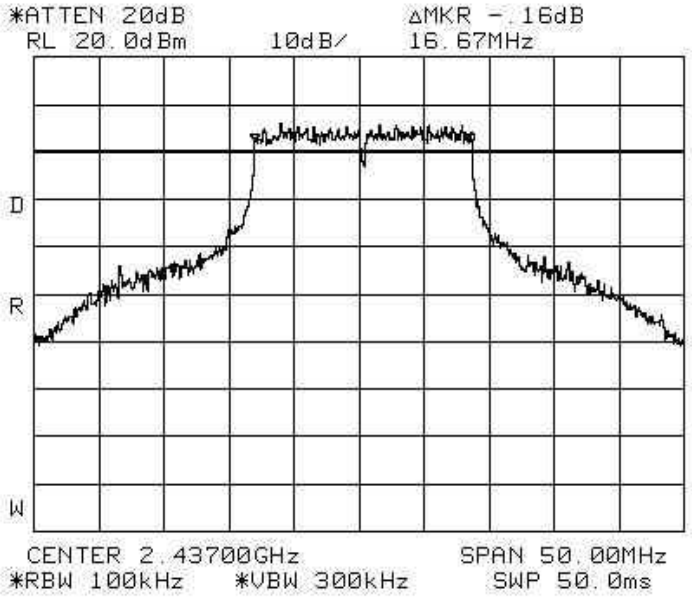
Plot 18 - Channel 11

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 54Mbps



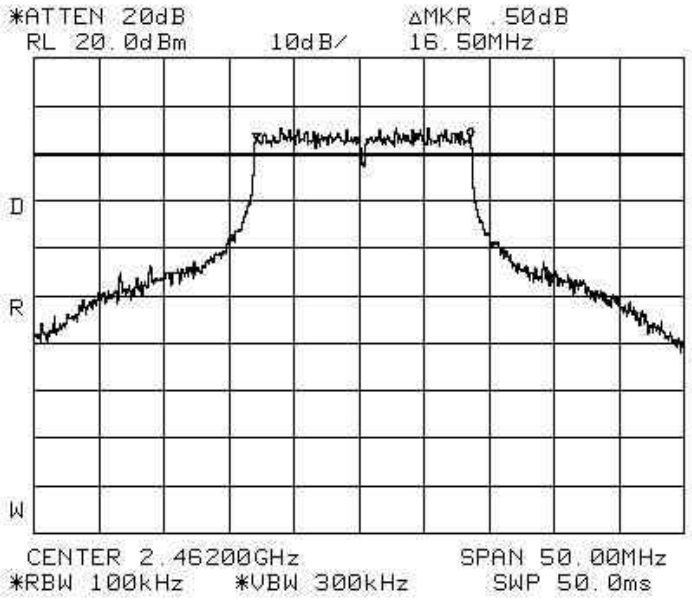
Plot 19 - Channel 1



Plot 20 - Channel 6

SPECTRUM BANDWIDTH (6dB BANDWIDTH MEASUREMENT) TEST

Spectrum Bandwidth (6dB Bandwidth Measurement) Plots - 802.11g @ 54Mbps



Plot 21 - Channel 11

MAXIMUM PEAK POWER TEST

FCC Part 15.247(b)(3) Maximum Peak Power Limits

The EUT shows compliance to the requirements of this section, which states the maximum peak power of the EUT employing digital modulation shall not exceed 1W (30dBm).

FCC Part 15.247(b)(3) Maximum Peak Power Test Instrumentation

Instrument	Model	S/No	Cal Due Date
R&S Universal Radio Communication Tester	CMU 200	837587/068	17 Jan 2009

FCC Part 15.247(b)(3) Maximum Peak Power Test Setup

1. The EUT and supporting equipment were set up as shown in the setup photo.
2. The power supply for the EUT was connected to a filtered mains.
3. The RF antenna connector was connected to the Universal Radio Communication Tester, which set into power analyser mode via a low-loss coaxial cable.
4. All other supporting equipment were powered separately from another filtered mains.

FCC Part 15.247(b)(3) Maximum Peak Power Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition. The EUT was then configured to operate in the test mode at Channel 1 (2.412GHz).
2. The maximum peak power of the transmitting frequency was detected and recorded.
3. The Equivalent Isotropic Radiated Power (EIRP) of the EUT was computed by adding its antenna gain to the measured maximum peak power.
4. The steps 2 to 3 were repeated with the transmitting frequency was set to Channel 6 (2.437GHz) and Channel 11 (2.462GHz) respectively.

MAXIMUM PEAK POWER TEST

FCC Part 15.247(b)(3) Maximum Peak Power Results

Test Input Power	110V 60Hz	Temperature	23°C
Antenna Gain	-3.5 dBi	Relative Humidity	58%
		Atmospheric Pressure	1030mbar
		Tested By	Song Zhi Qun

802.11b @ 1Mbps

Channel	Channel Frequency (GHz)	Maximum Peak Power (W)	Maximum EIRP (W)	Limit (W)
1	2.412	0.010	0.003	1.0
6	2.437	0.011	0.005	1.0
11	2.462	0.010	0.003	1.0

802.11b @ 2Mbps

Channel	Channel Frequency (GHz)	Maximum Peak Power (W)	Maximum EIRP (W)	Limit (W)
1	2.412	0.010	0.003	1.0
6	2.437	0.010	0.003	1.0
11	2.462	0.010	0.003	1.0

802.11b @ 11Mbps

Channel	Channel Frequency (GHz)	Maximum Peak Power (W)	Maximum EIRP (W)	Limit (W)
1	2.412	0.017	0.008	1.0
6	2.437	0.019	0.009	1.0
11	2.462	0.018	0.008	1.0

802.11g @ 9Mbps

Channel	Channel Frequency (GHz)	Maximum Peak Power (W)	Maximum EIRP (W)	Limit (W)
1	2.412	0.010	0.004	1.0
6	2.437	0.012	0.005	1.0
11	2.462	0.011	0.005	1.0

802.11g @ 18Mbps

Channel	Channel Frequency (GHz)	Maximum Peak Power (W)	Maximum EIRP (W)	Limit (W)
1	2.412	0.010	0.005	1.0
6	2.437	0.008	0.004	1.0
11	2.462	0.012	0.006	1.0

FCC Part 15.247(b)(3) Maximum Peak Power Results (continued)

802.11g @ 36Mbps

Channel	Channel Frequency (GHz)	Maximum Peak Power (W)	Maximum EIRP (W)	Limit (W)
1	2.412	0.012	0.006	1.0
6	2.437	0.014	0.007	1.0
11	2.462	0.009	0.005	1.0

802.11g @ 54Mbps

Channel	Channel Frequency (GHz)	Maximum Peak Power (W)	Maximum EIRP (W)	Limit (W)
1	2.412	0.011	0.005	1.0
6	2.437	0.012	0.006	1.0
11	2.462	0.011	0.005	1.0

Notes

1. Power analyser of Universal Radio Communication Tester was used for power measurement with peak detection as mode of measurement. The power analyser mode supports a wideband power measurement ranging from 100kHz to 2700MHz.

RF CONDUCTED SPURIOUS EMISSIONS TEST

FCC Part 15.247(d) RF Conducted Spurious Emissions Limits

The EUT shows compliance to the requirements of this section, which states in any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator (EUT) is operating, the radio frequency power that is produced by the EUT shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of desired power.

FCC Part 15.247(d) RF Conducted Spurious Test Instrumentation

Instrument	Model	S/No	Cal Due Date
HP Spectrum Analyzer	8563E	3846A09953	14 Sep 2008
Bird 10dB Attenuator	10-18A-MFN-XX	10dB 1/5	17 Jan 2009

FCC Part 15.247(d) RF Conducted Spurious Emissions Test Setup

1. The EUT and supporting equipment were set up as shown in the setup photo.
2. The power supply for the EUT was connected to a filtered mains.
3. The RF antenna connector was connected to the spectrum analyser via a low-loss coaxial cable.
4. The resolution bandwidth (RBW) and the video bandwidth (VBW) of the spectrum analyser were respectively set to 100kHz and 300kHz.
5. All other supporting equipment were powered separately from another filtered mains.

FCC Part 15.247(d) RF Conducted Spurious Emissions Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition. The EUT was then configured to operate in the test mode, non-hopping with transmitting frequency at Channel 1 (2.412GHz).
2. The start and stop frequencies of the spectrum analyser were set to 30MHz and 10GHz.
3. The spectrum analyser was set to max hold to capture any spurious emissions within the span. The signal capturing was continuous until no further spurious emissions were detected.
4. The steps 2 to 3 were repeated with frequency span was set from 10GHz to 25GHz.
5. The steps 2 to 4 were repeated with the transmitting frequency was set to Channel 6 (2.437GHz) and Channel 11 (2.462GHz) respectively.

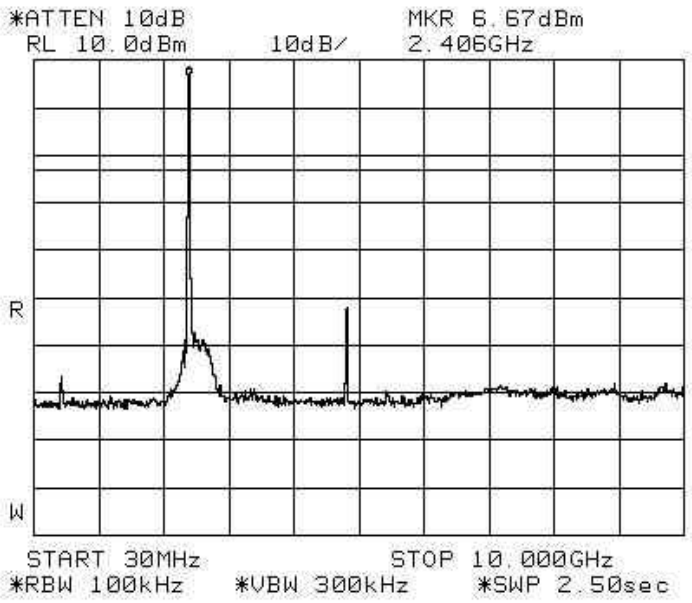
RF CONDUCTED SPURIOUS EMISSIONS TEST

FCC Part 15.247(d) RF Conducted Spurious Emissions Results

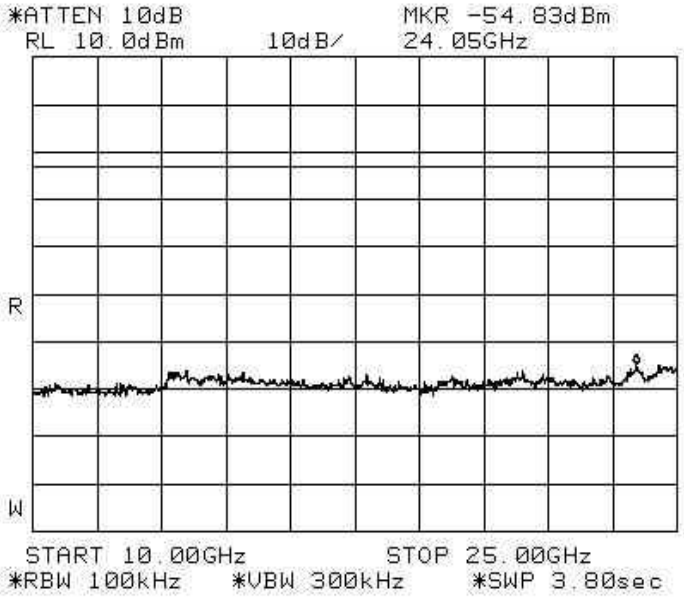
Test Input Power	110V 60Hz	Temperature	23°C
Attached Plots	22 - 63	Relative Humidity	58%
		Atmospheric Pressure	1030mbar
		Tested By	Song Zhi Qun

All spurious signals found were below the specified limit. Please refer to the attached plots.

RF Conducted Spurious Emissions Plots - 802.11b @ 1Mbps

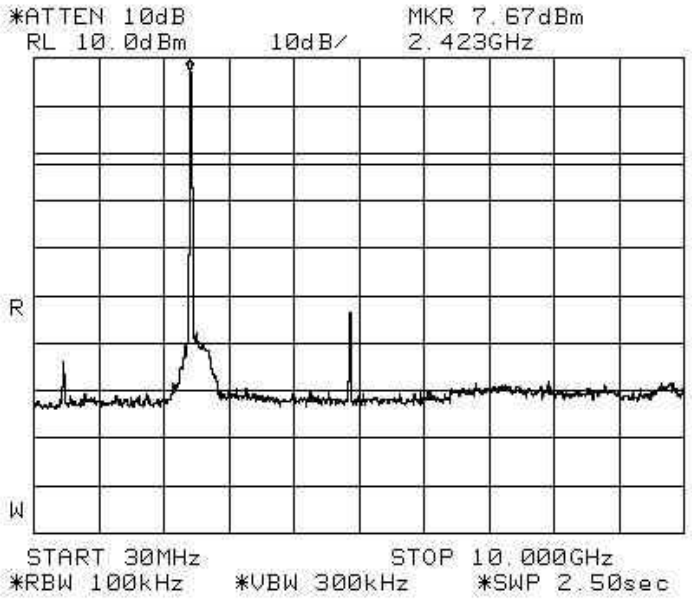


Plot 22 – Channel 1

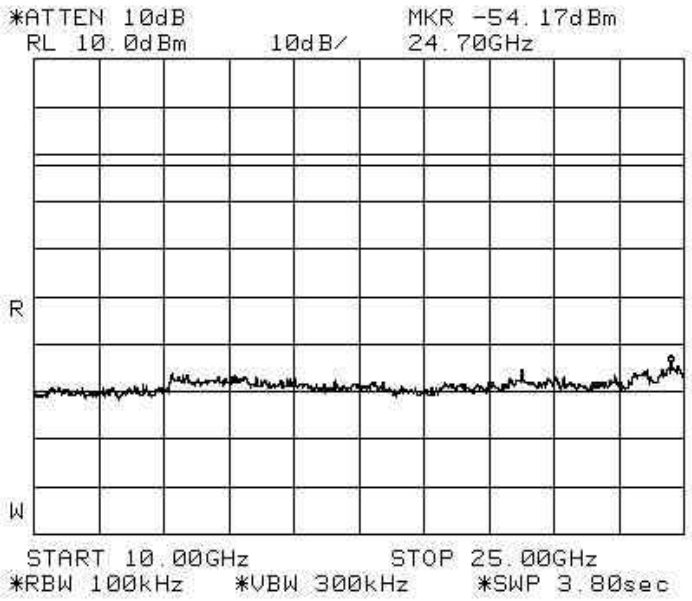


Plot 23 – Channel 1

RF Conducted Spurious Emissions Plots - 802.11b @ 1Mbps

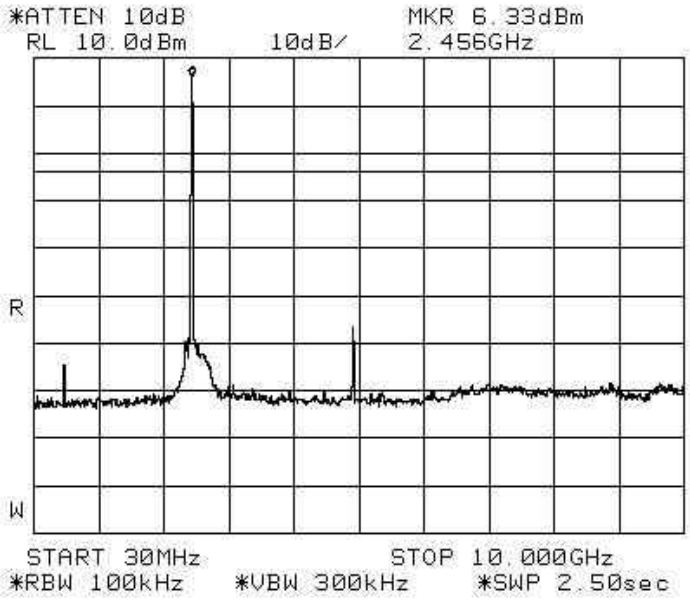


Plot 24 – Channel 6

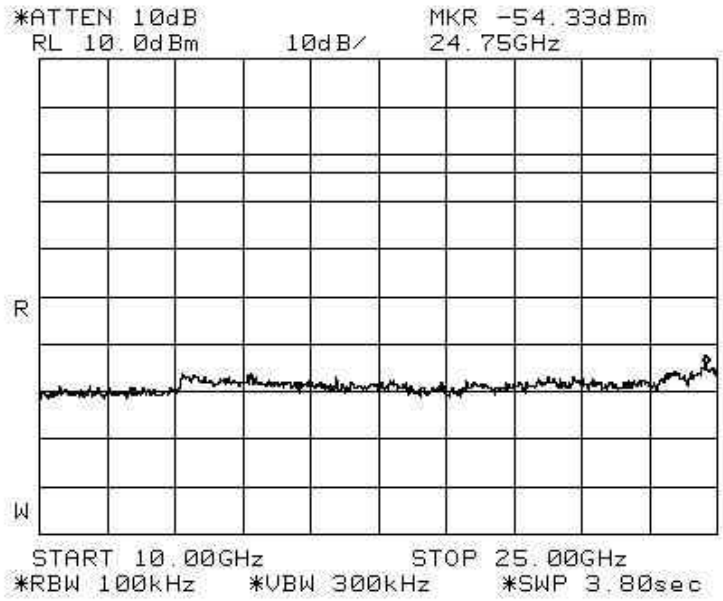


Plot 25 – Channel 6

RF Conducted Spurious Emissions Plots - 802.11b @ 1Mbps

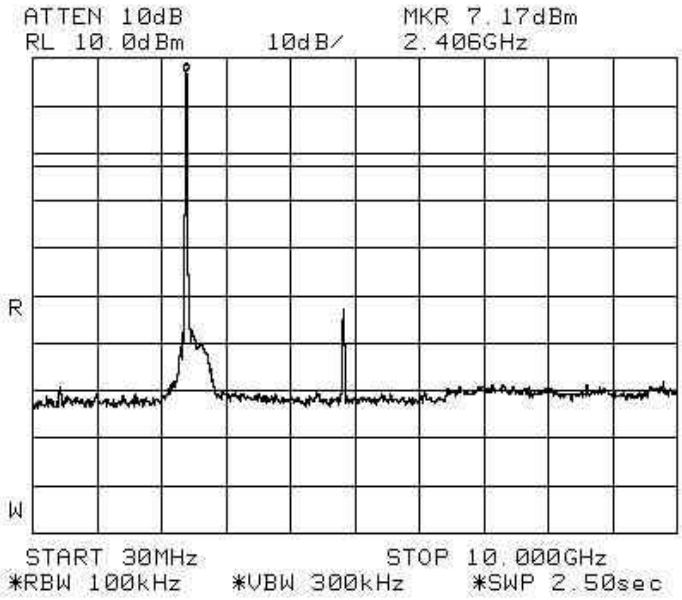


Plot 26 – Channel 11

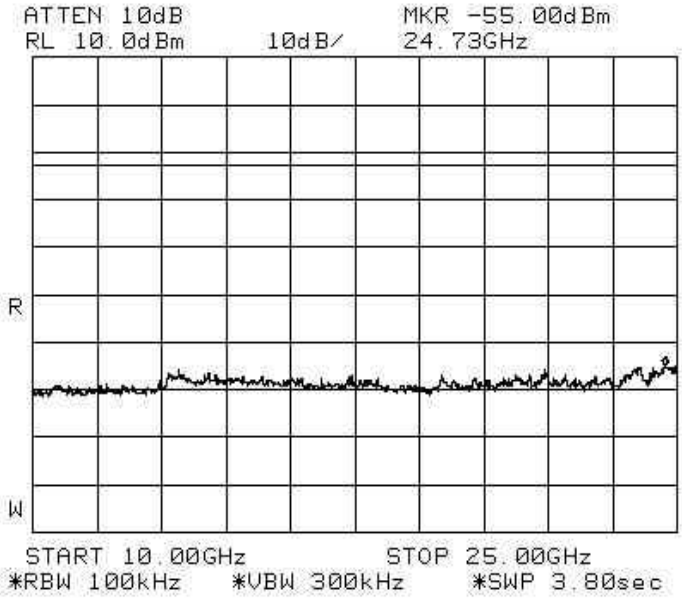


Plot 27 – Channel 11

RF Conducted Spurious Emissions Plots - 802.11b @ 2Mbps

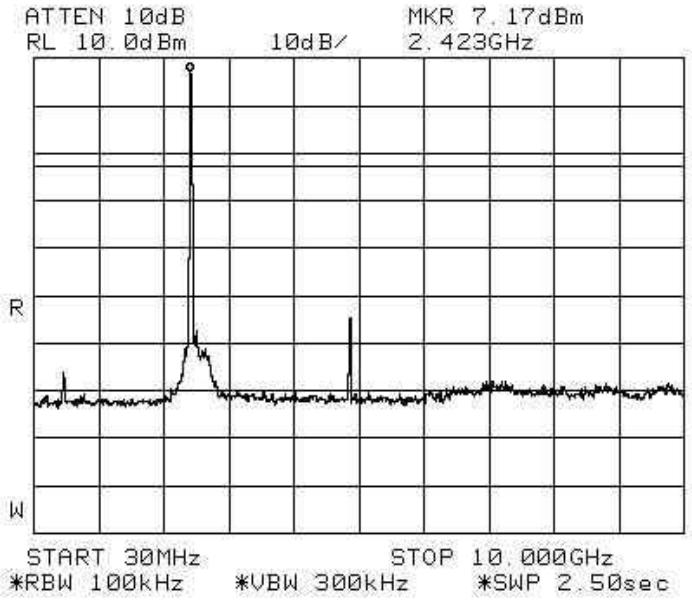


Plot 28 – Channel 1

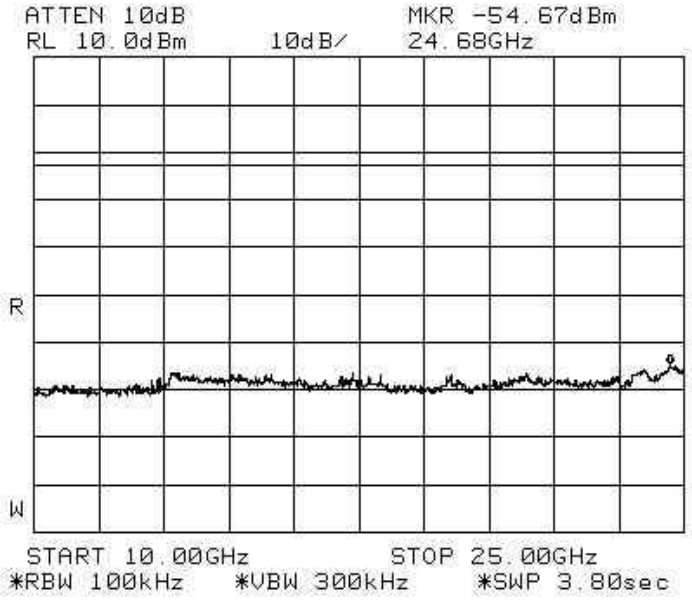


Plot 29 – Channel 1

RF Conducted Spurious Emissions Plots - 802.11b @ 2Mbps

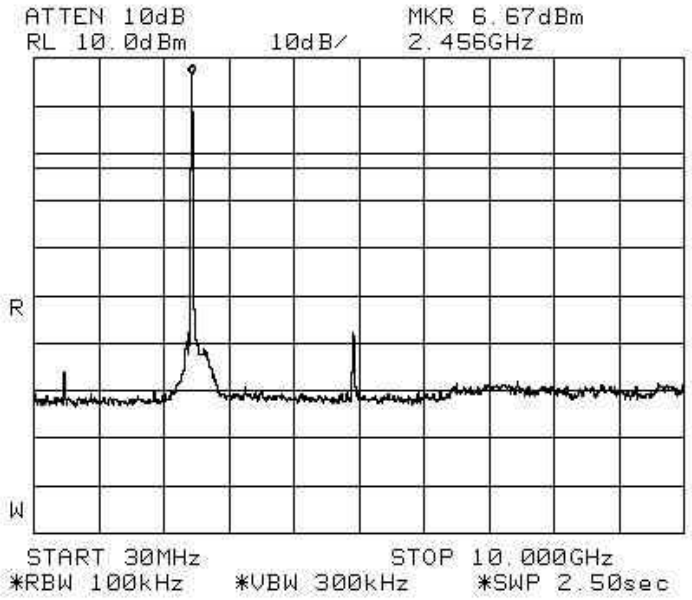


Plot 30 – Channel 6

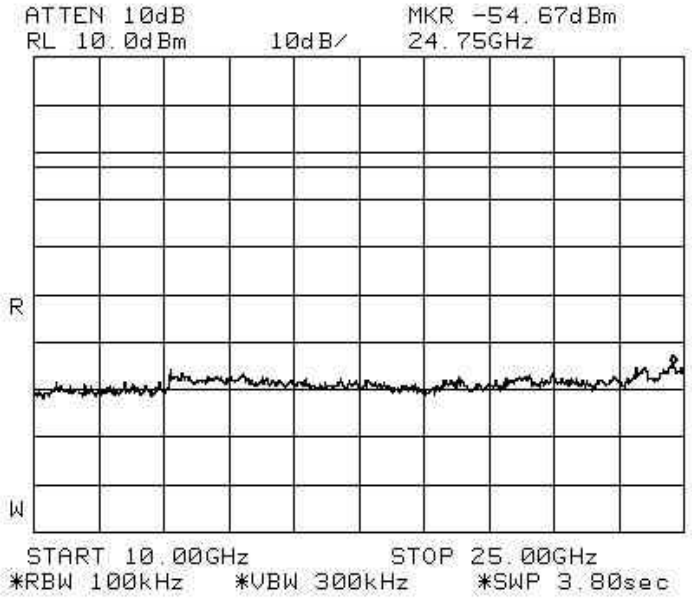


Plot 31 – Channel 6

RF Conducted Spurious Emissions Plots - 802.11b @ 2Mbps

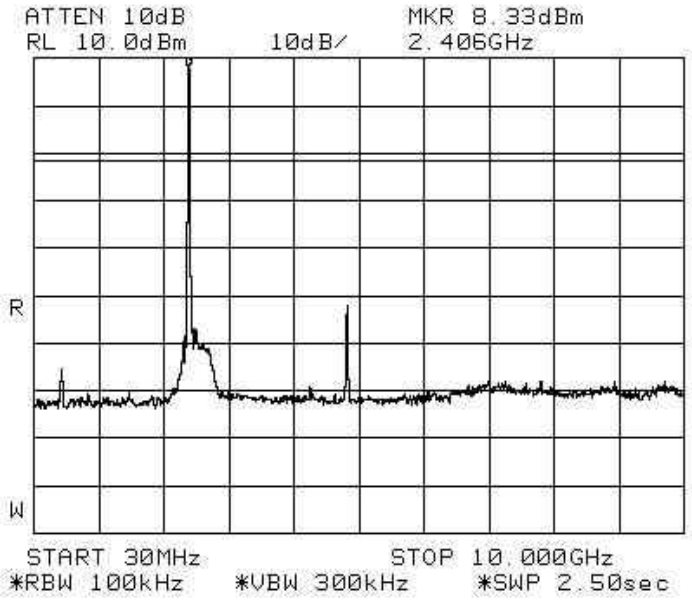


Plot 32 – Channel 11

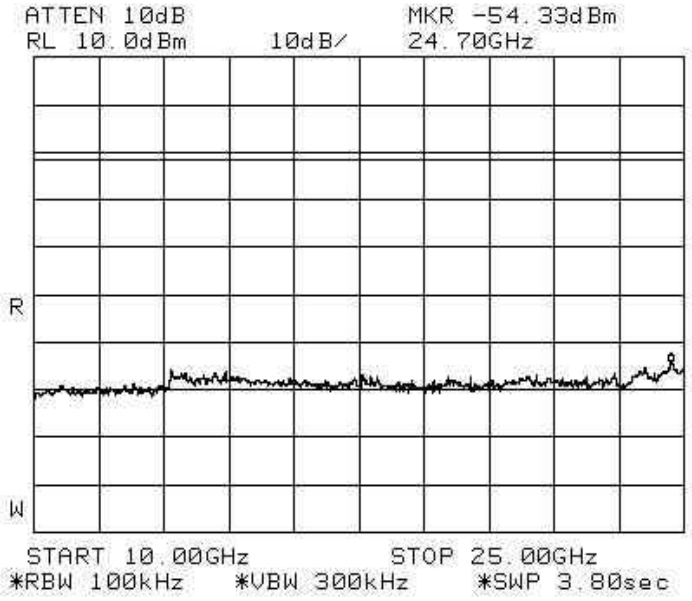


Plot 33 – Channel 11

RF Conducted Spurious Emissions Plots - 802.11b @ 11Mbps

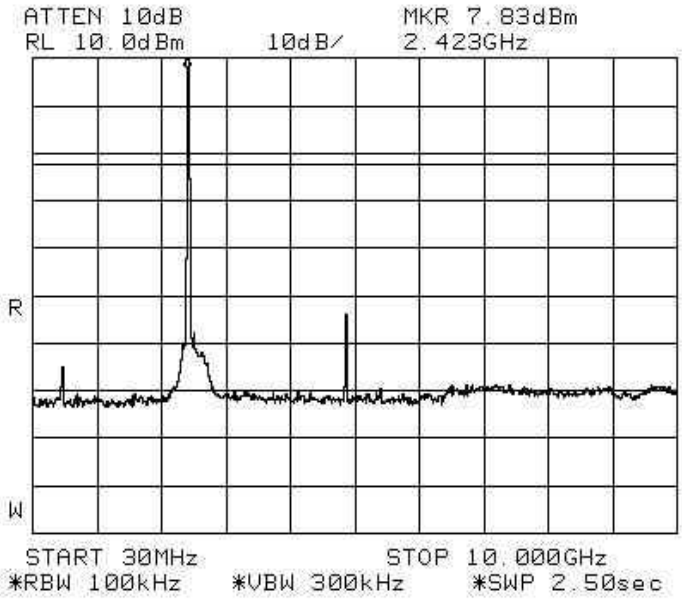


Plot 34 – Channel 1

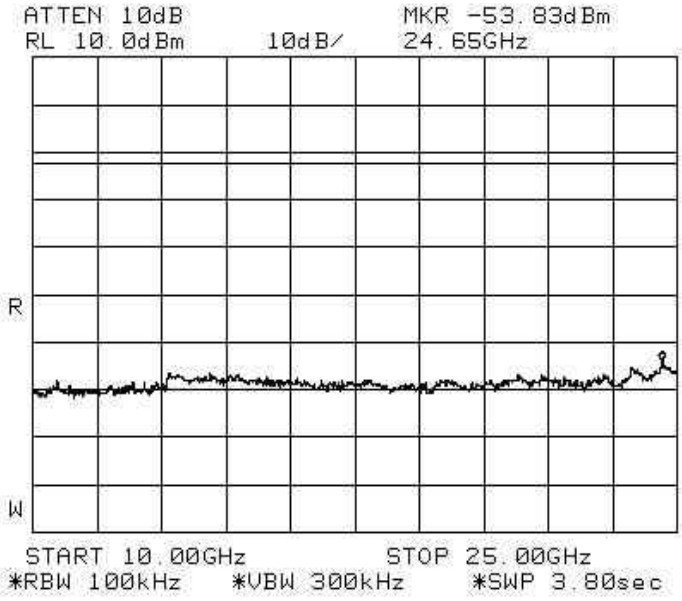


Plot 35 – Channel 1

RF Conducted Spurious Emissions Plots - 802.11b @ 11Mbps

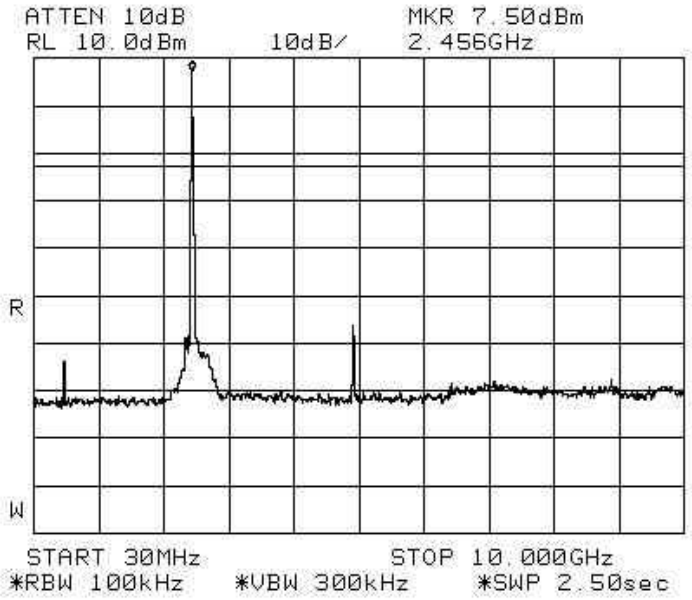


Plot 36 – Channel 6

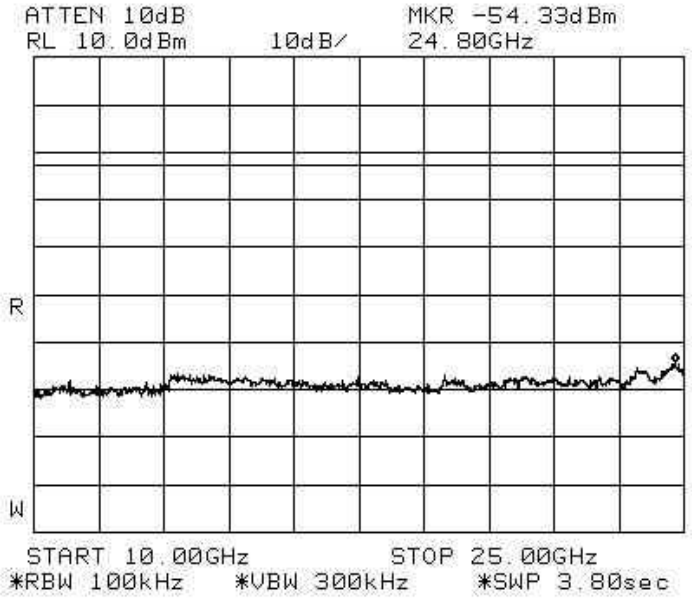


Plot 37 – Channel 6

RF Conducted Spurious Emissions Plots - 802.11b @ 11Mbps

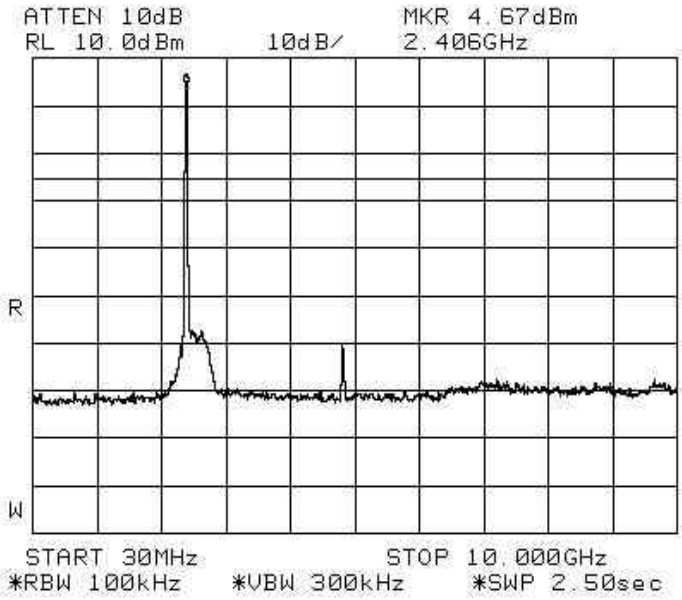


Plot 38 – Channel 11

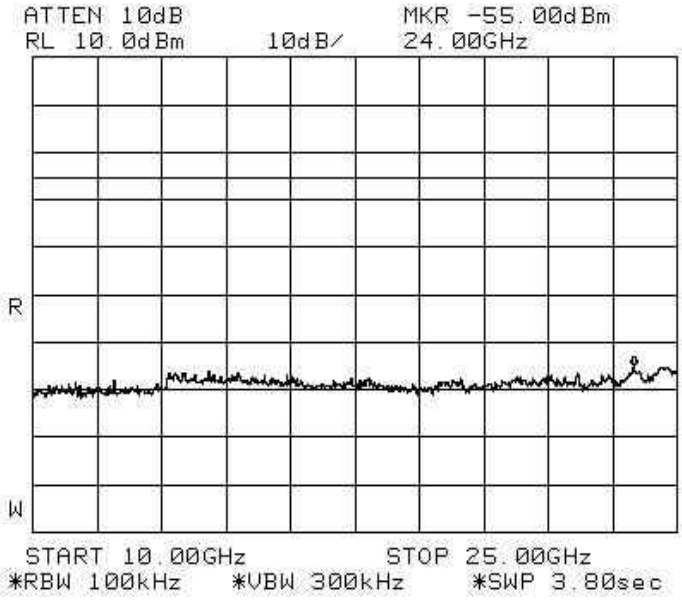


Plot 39 – Channel 11

RF Conducted Spurious Emissions Plots - 802.11g @ 9Mbps

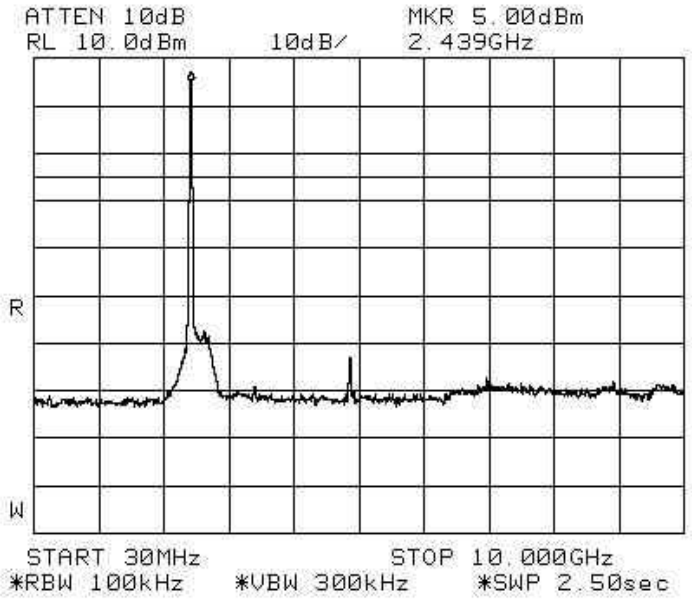


Plot 40 – Channel 1

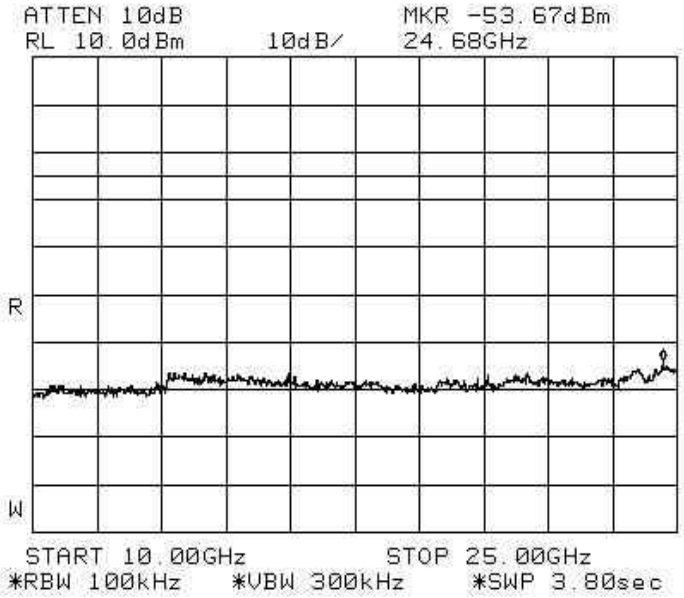


Plot 41 – Channel 1

RF Conducted Spurious Emissions Plots - 802.11g @ 9Mbps

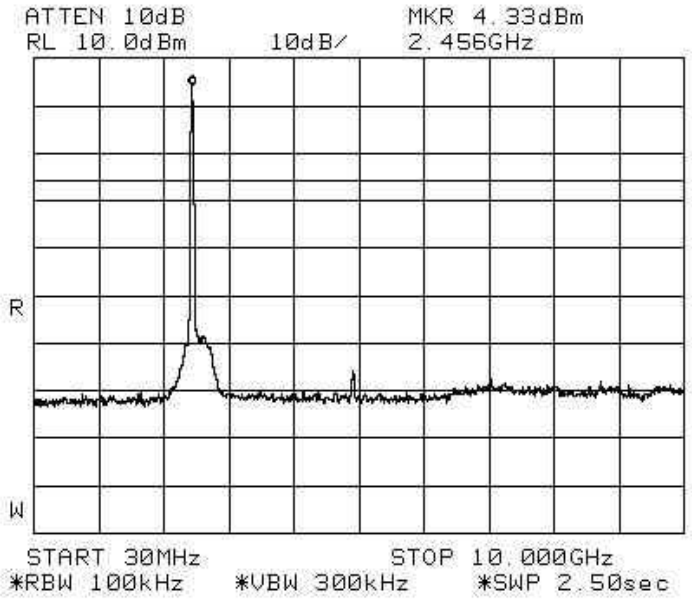


Plot 42 – Channel 6

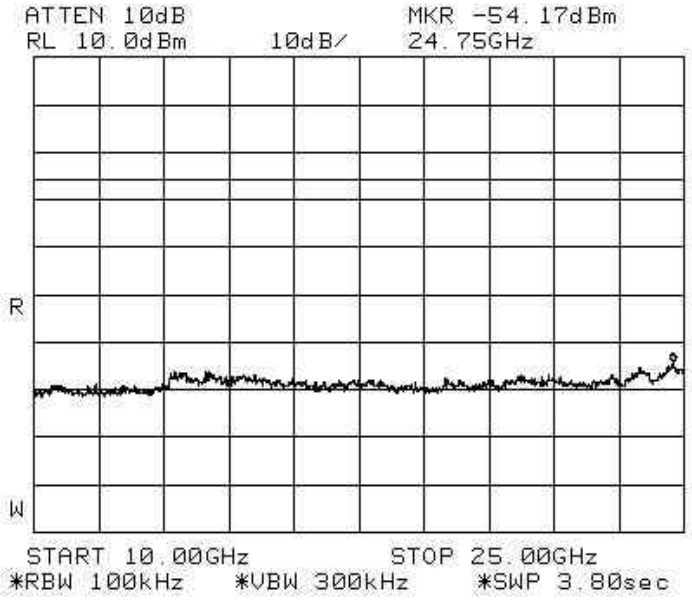


Plot 43 – Channel 6

RF Conducted Spurious Emissions Plots - 802.11g @ 9Mbps

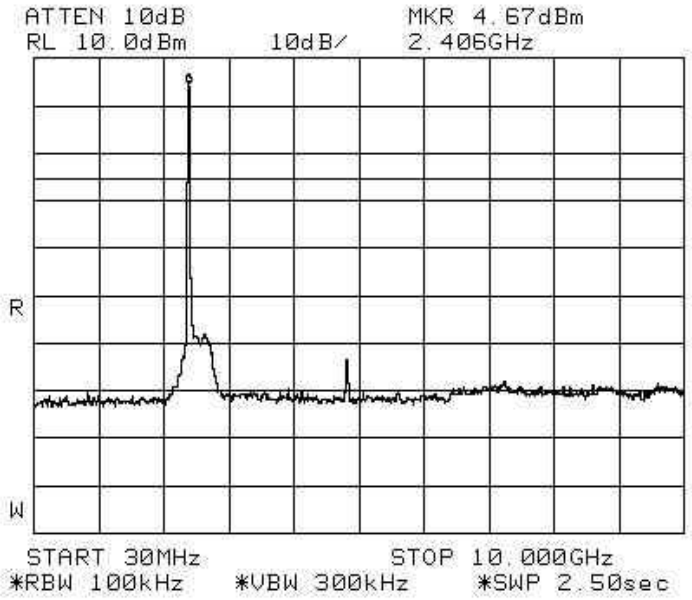


Plot 44 – Channel 11

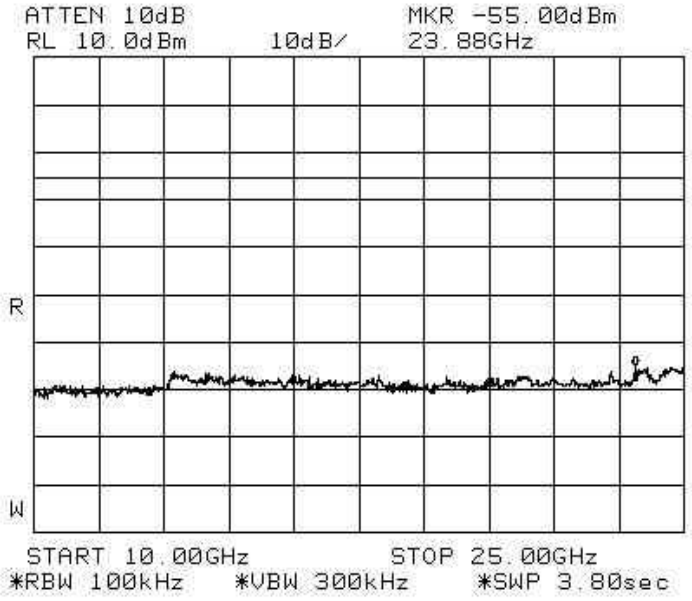


Plot 45 – Channel 11

RF Conducted Spurious Emissions Plots - 802.11g @ 18Mbps

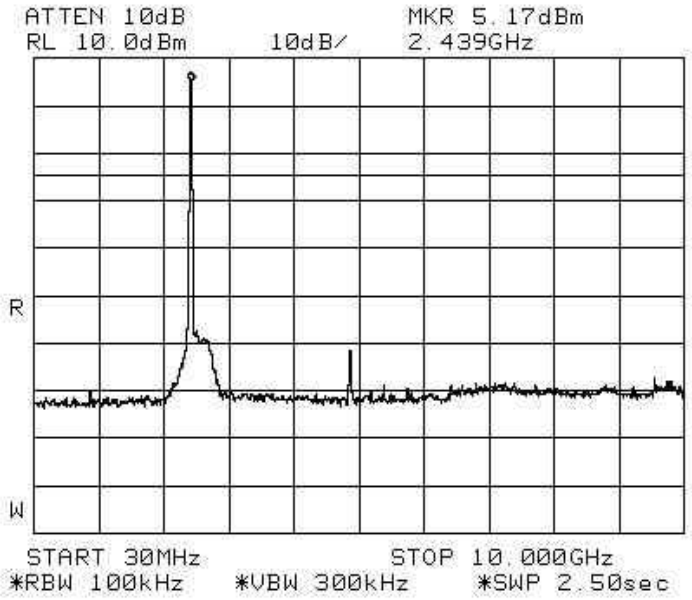


Plot 46 – Channel 1

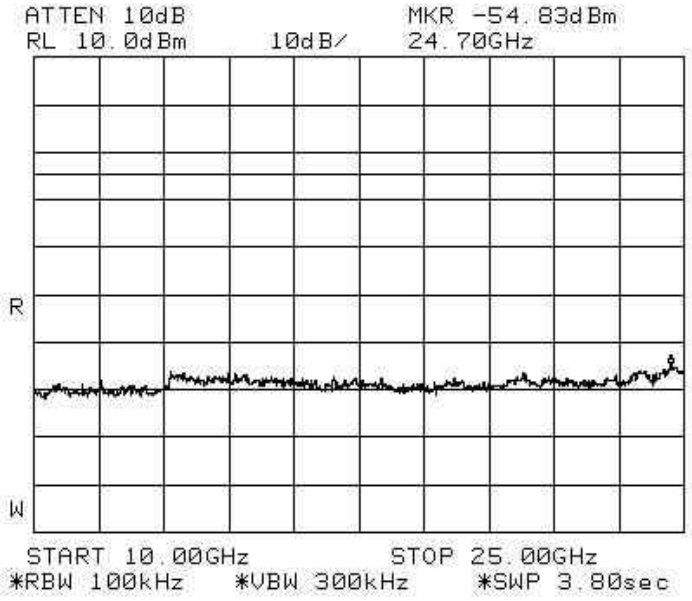


Plot 47 – Channel 1

RF Conducted Spurious Emissions Plots - 802.11g @ 18Mbps

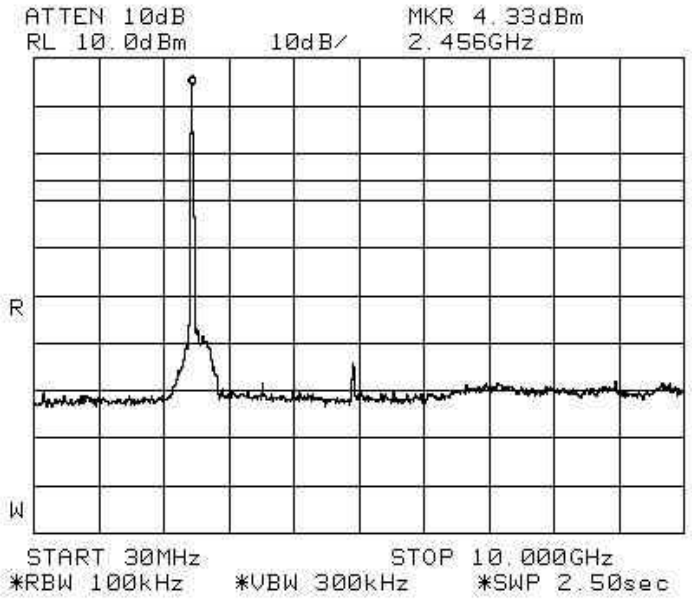


Plot 48 – Channel 6

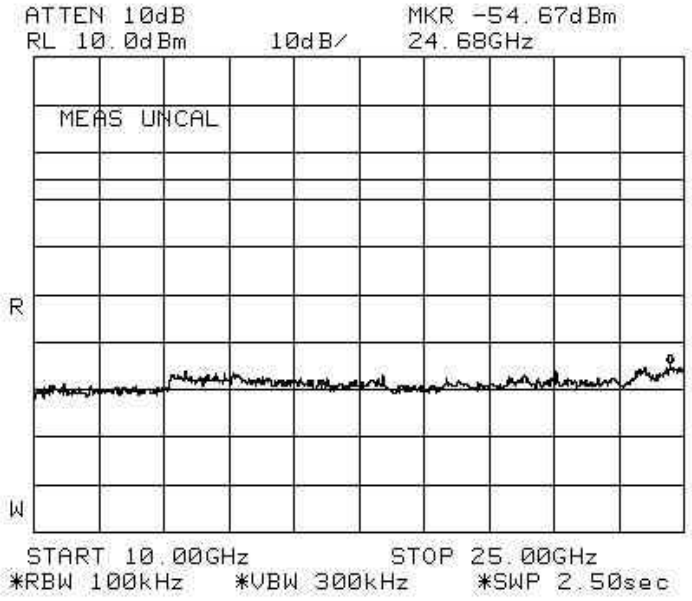


Plot 49 – Channel 6

RF Conducted Spurious Emissions Plots - 802.11g @ 18Mbps

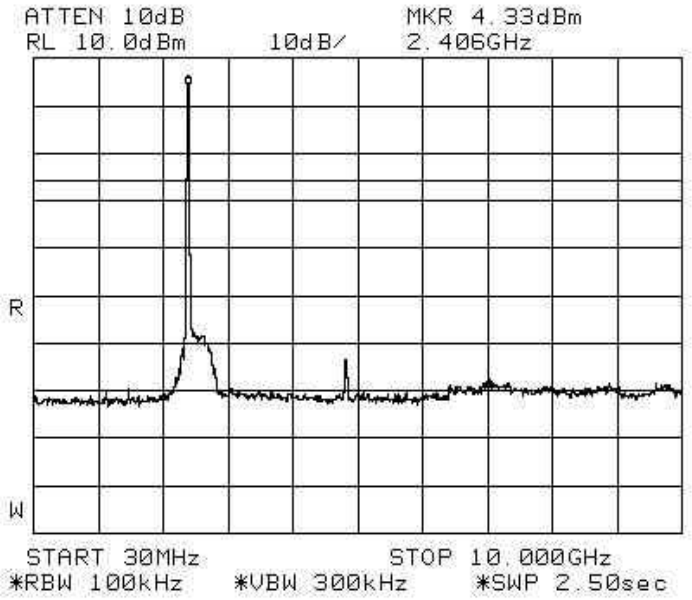


Plot 50 – Channel 11

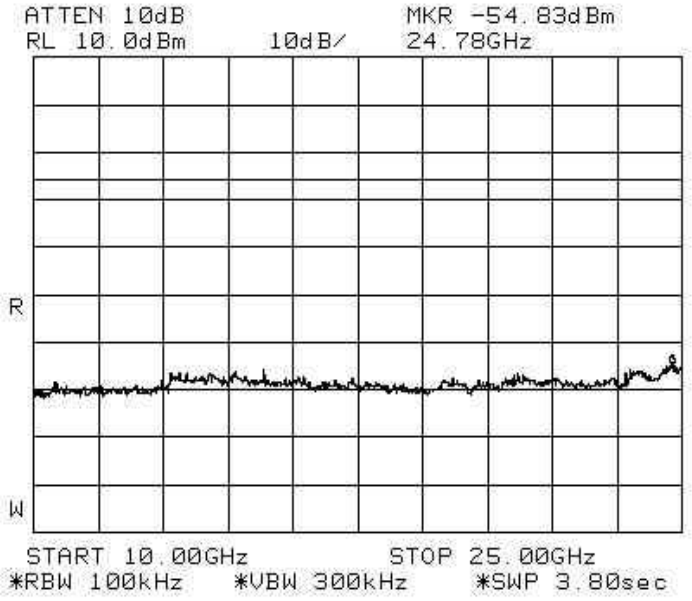


Plot 51 – Channel 11

RF Conducted Spurious Emissions Plots - 802.11g @ 36Mbps

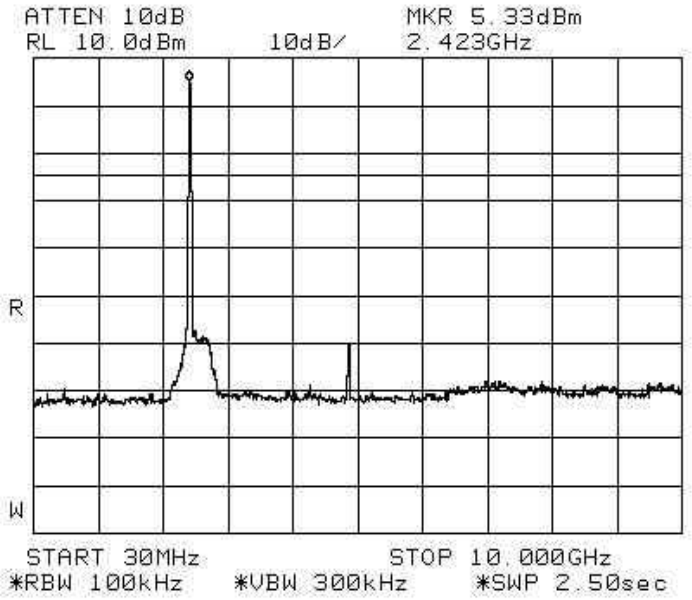


Plot 52 – Channel 1

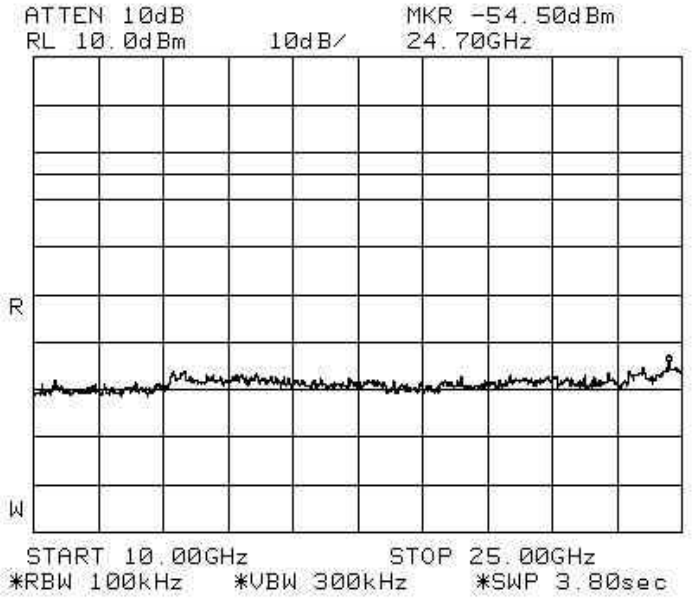


Plot 53 – Channel 1

RF Conducted Spurious Emissions Plots - 802.11g @ 36Mbps

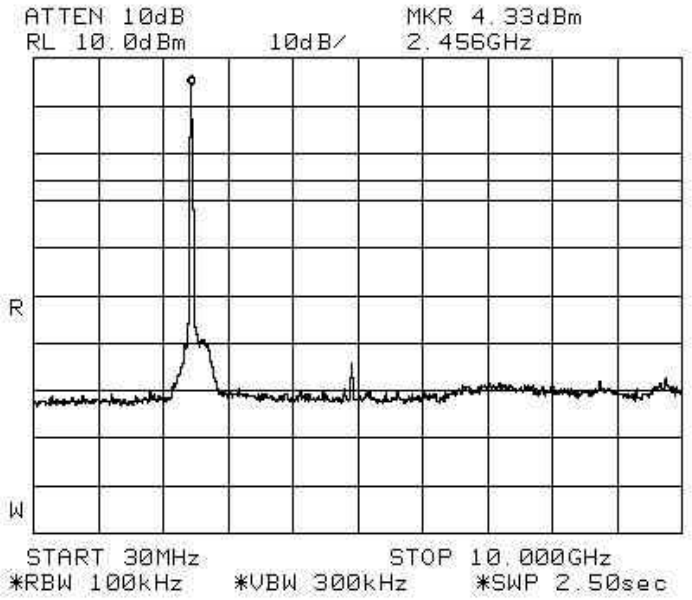


Plot 54 – Channel 6

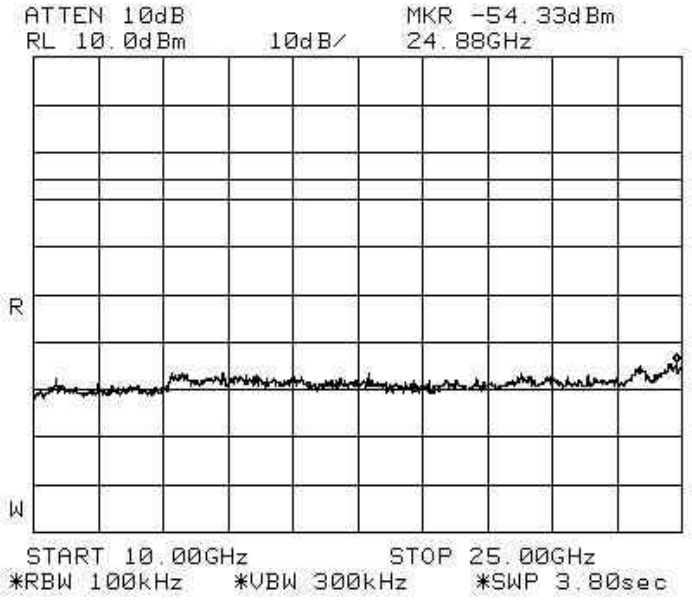


Plot 55 – Channel 6

RF Conducted Spurious Emissions Plots - 802.11g @ 36Mbps

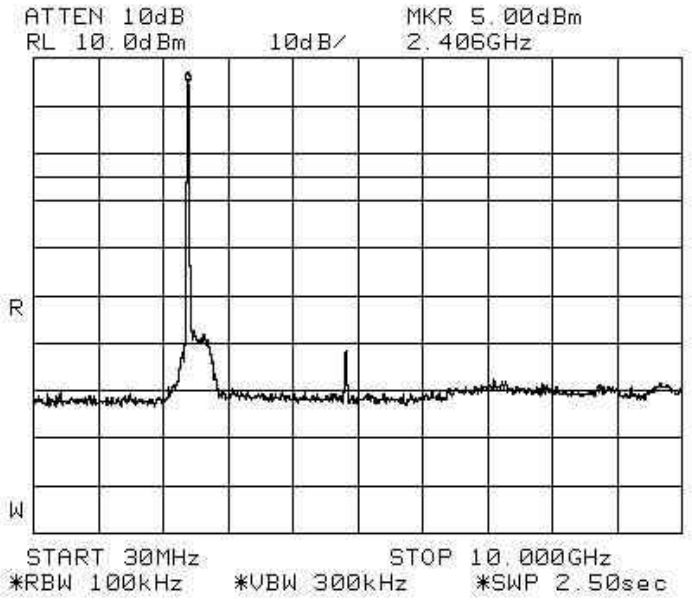


Plot 56 – Channel 11

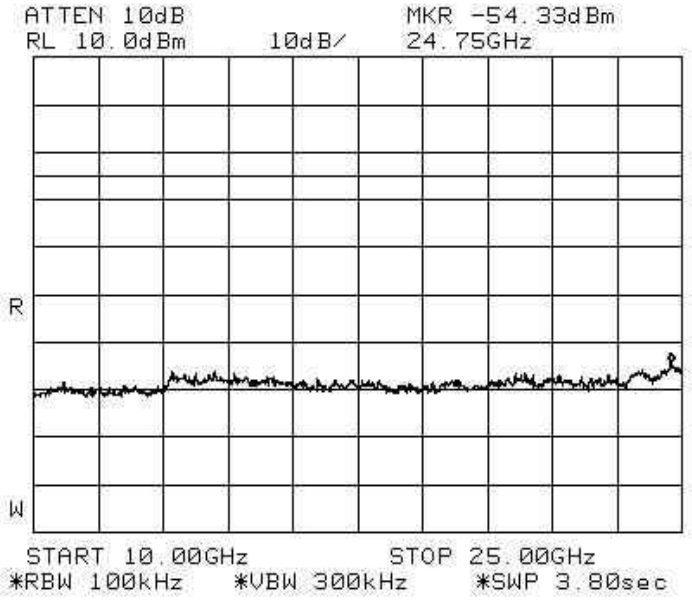


Plot 57 – Channel 11

RF Conducted Spurious Emissions Plots - 802.11g @ 54Mbps

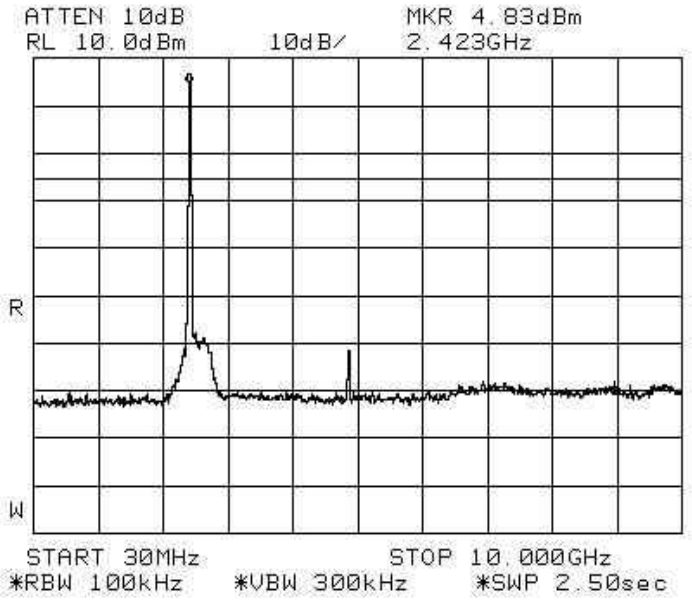


Plot 58 – Channel 1

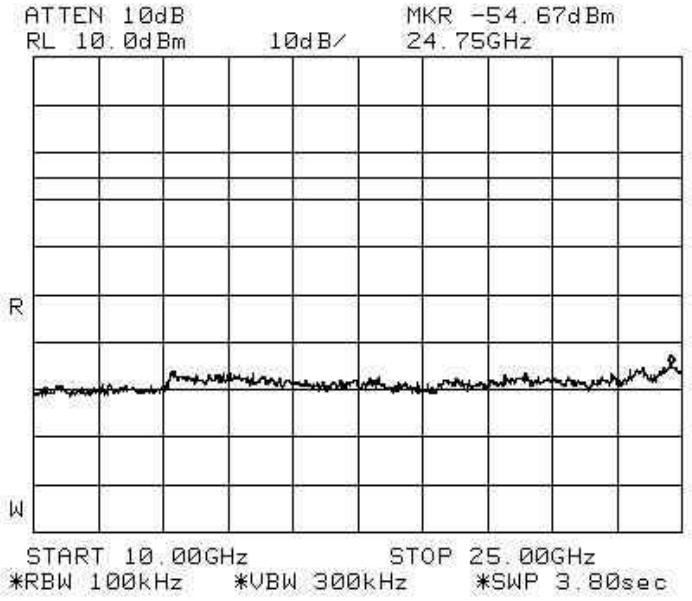


Plot 59 – Channel 1

RF Conducted Spurious Emissions Plots - 802.11g @ 54Mbps

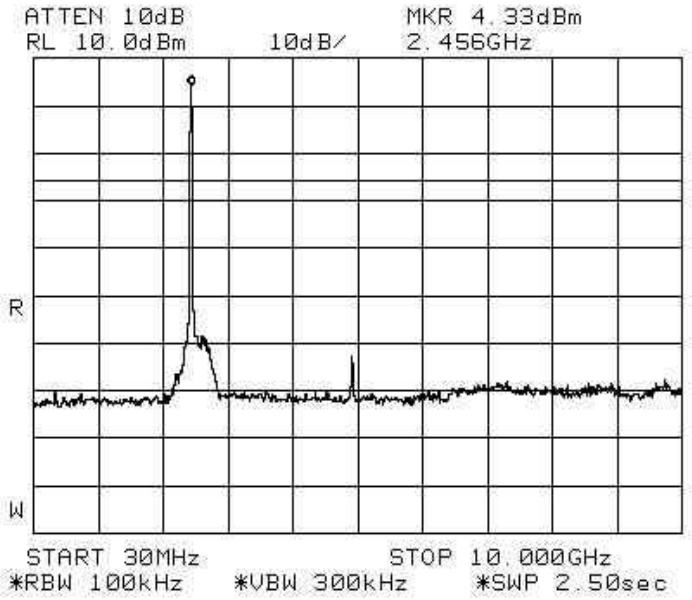


Plot 60 – Channel 6

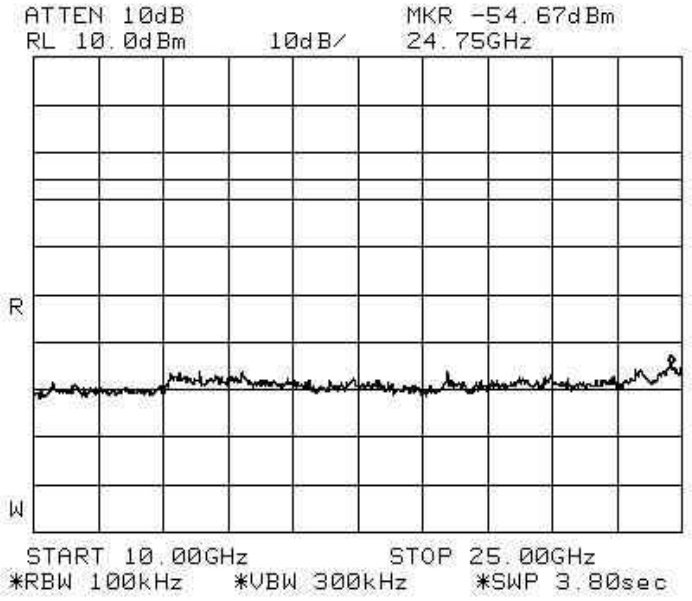


Plot 61 – Channel 6

RF Conducted Spurious Emissions Plots - 802.11g @ 54Mbps



Plot 62 – Channel 11



Plot 63 – Channel 11

BAND EDGE COMPLIANCE (CONDUCTED) TEST

FCC Part 15.247(d) Band Edge Compliance (Conducted) Limits

The EUT shows compliance to the requirements of this section, which states in any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator (EUT) is operating, the radio frequency power that is produced by the EUT shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of desired power.

FCC Part 15.247(d) Band Edge Compliance (Conducted) Test Instrumentation

Instrument	Model	S/No	Cal Due Date
Bird 10dB Attenuator	10-18A-MFN-XX	10dB 1/5	17 Jan 2009
HP Spectrum Analyzer	8563E	3846A09953	14 Sep 2008

FCC Part 15.247(d) Band Edge Compliance (Conducted) Test Setup

1. The EUT and supporting equipment were set up as shown in the setup photo.
2. The power supply for the EUT was connected to a filtered mains.
3. The RF antenna connector was connected to the spectrum analyser via a low-loss coaxial cable.
4. The resolution bandwidth (RBW) and the video bandwidth (VBW) of the spectrum analyser were respectively set to 100kHz and 300kHz.
5. All other supporting equipment were powered separately from another filtered mains.

FCC Part 15.247(d) Band Edge Compliance (Conducted) Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition. The EUT was then configured to operate in the test mode.
2. The frequency span of the spectrum analyser was set to wide enough to capture the lower band edge of the transmission band, 2.400GHz and any spurious emissions at the band edge.
3. The spectrum analyser was set to max hold to capture any spurious emissions within the span. The signal capturing was continuous until no further spurious emissions were detected.
4. The steps 2 to 3 were repeated with the frequency span of the spectrum analyser was set to wide enough to capture the upper band edge frequency of the transmission band, 2.4835GHz and the any spurious emissions at the band-edge.

BAND EDGE COMPLIANCE (CONDUCTED) TEST

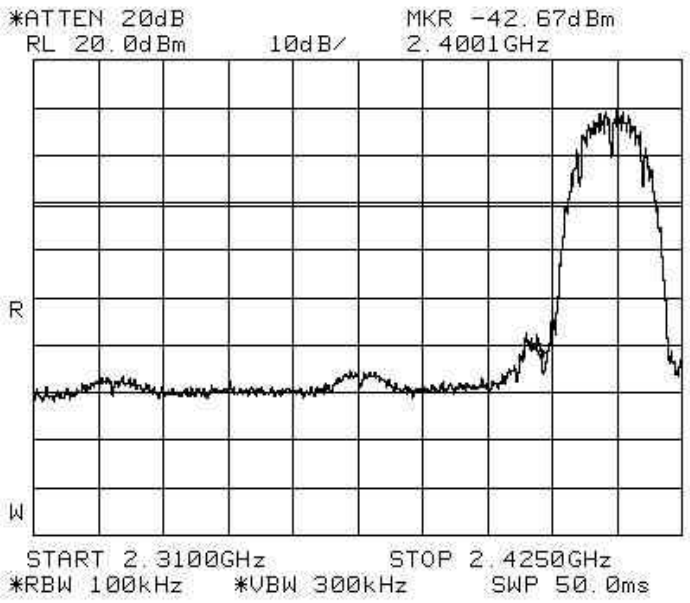
FCC Part 15.247(d) Band Edge Compliance (Conducted) Results

Test Input Power	110V 60Hz	Temperature	23oC
Attached Plots	64 - 77	Relative Humidity	58%
		Atmospheric Pressure	1030mbar
		Tested By	Song Zhi Qun

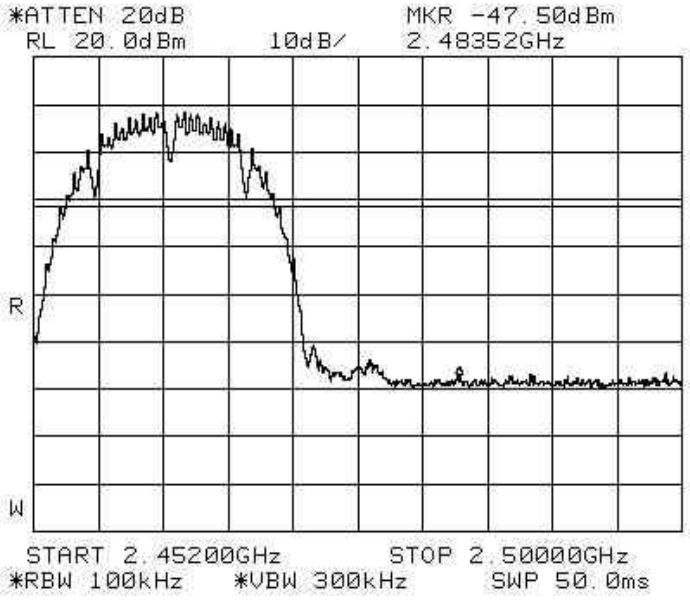
No significant signal was found and they were below the specified limit.

BAND EDGE COMPLIANCE (CONDUCTED) TEST

Band Edge Compliance (Conducted) Plots - 802.11b @ 1Mbps



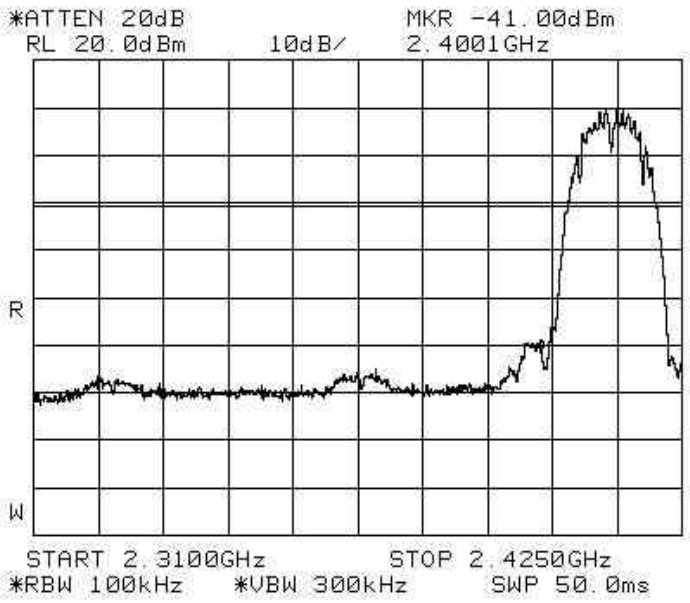
Plot 64 – Lower Band Edge at 2.4000GHz



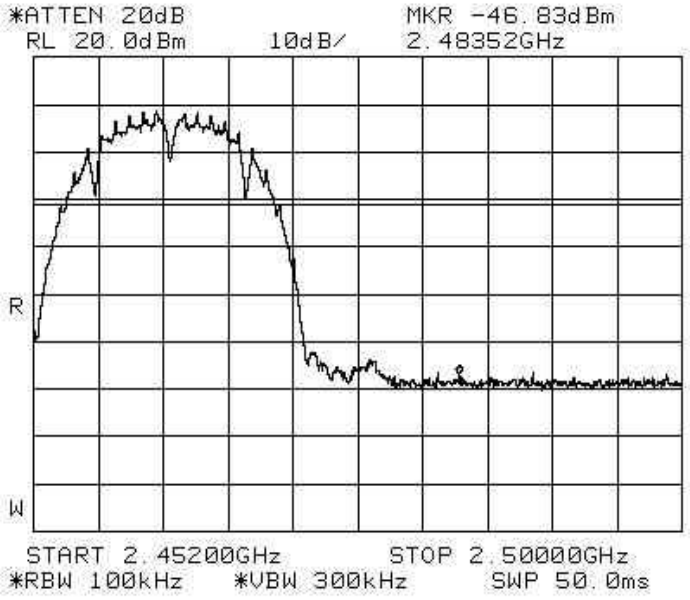
Plot 65 – Upper Band Edge at 2.4835GHz

BAND EDGE COMPLIANCE (CONDUCTED) TEST

Band Edge Compliance (Conducted) Plots - 802.11b @ 2Mbps



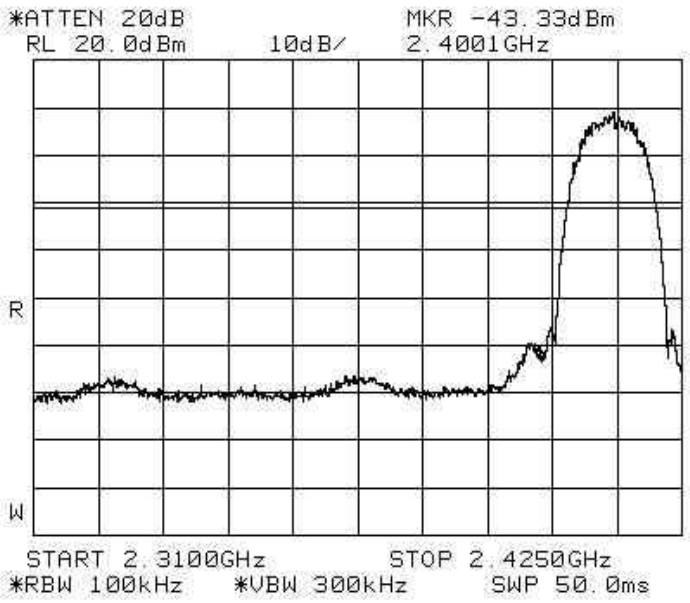
Plot 66 – Lower Band Edge at 2.4000GHz



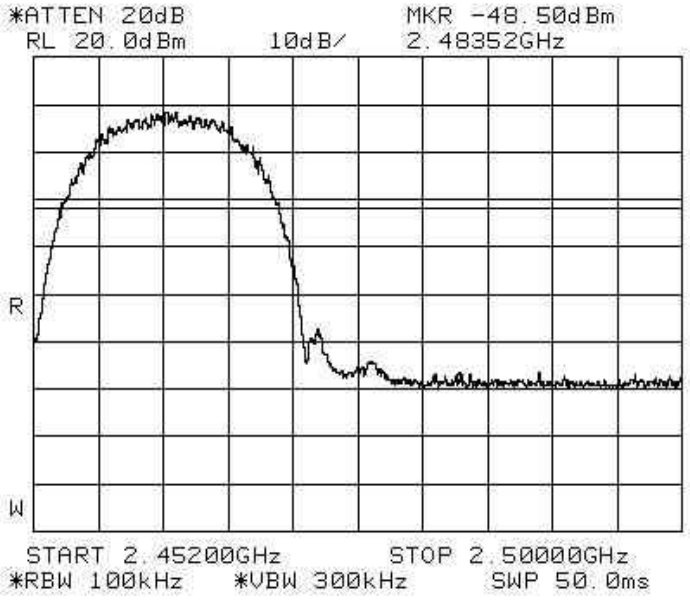
Plot 67 – Upper Band Edge at 2.4835GHz

BAND EDGE COMPLIANCE (CONDUCTED) TEST

Band Edge Compliance (Conducted) Plots - 802.11b @ 11Mbps



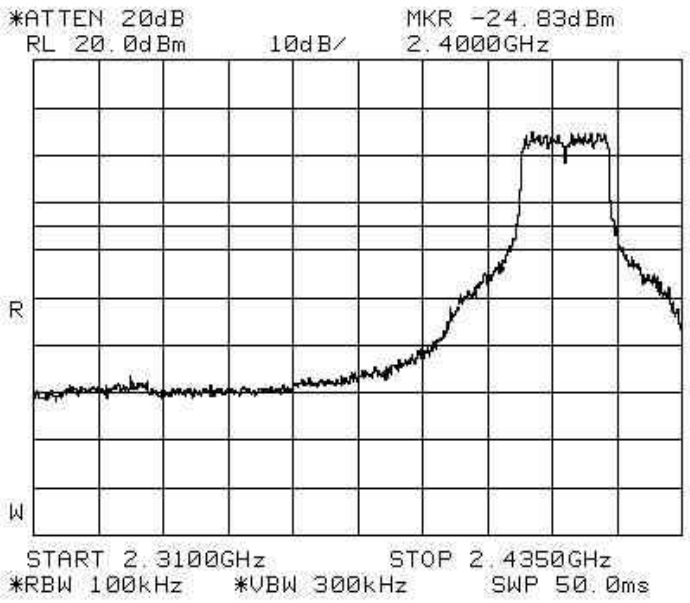
Plot 68 – Lower Band Edge at 2.4000GHz



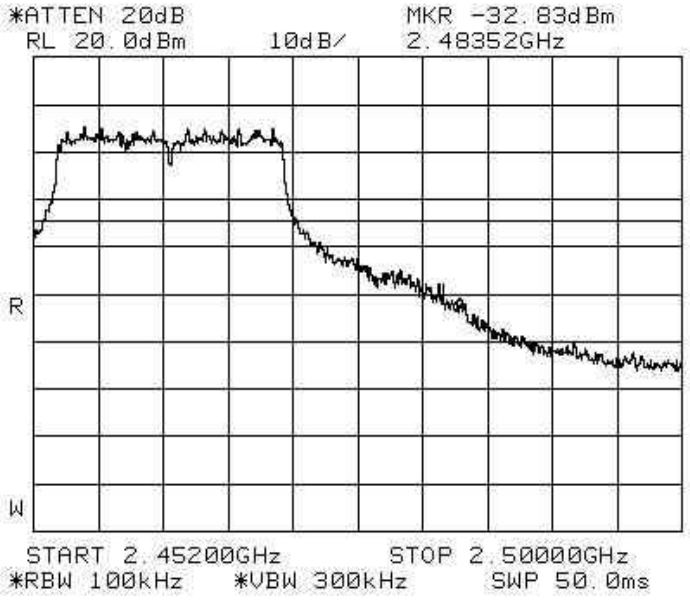
Plot 69 – Upper Band Edge at 2.4835GHz

BAND EDGE COMPLIANCE (CONDUCTED) TEST

Band Edge Compliance (Conducted) Plots - 802.11g @ 9Mbps



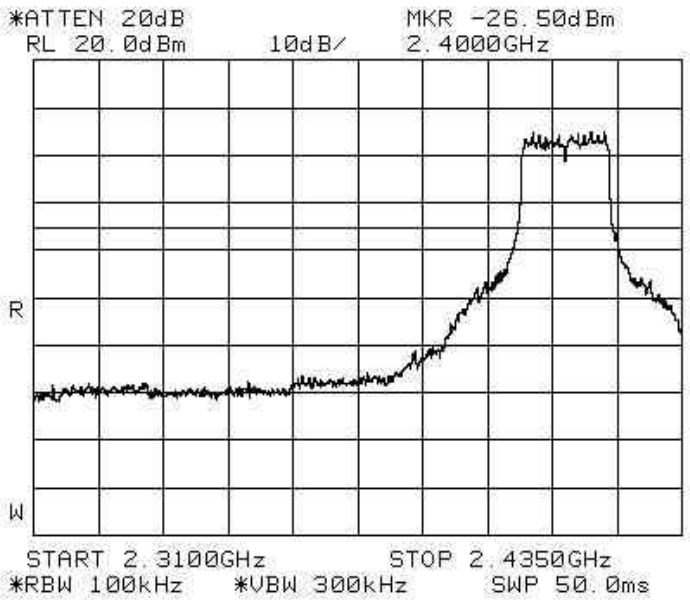
Plot 70 – Lower Band Edge at 2.4000GHz



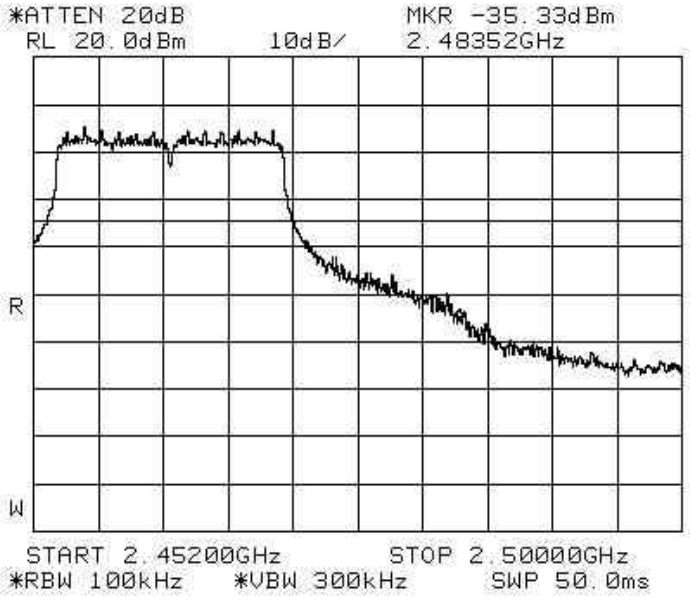
Plot 71 – Upper Band Edge at 2.4835GHz

BAND EDGE COMPLIANCE (CONDUCTED) TEST

Band Edge Compliance (Conducted) Plots - 802.11g @ 18Mbps



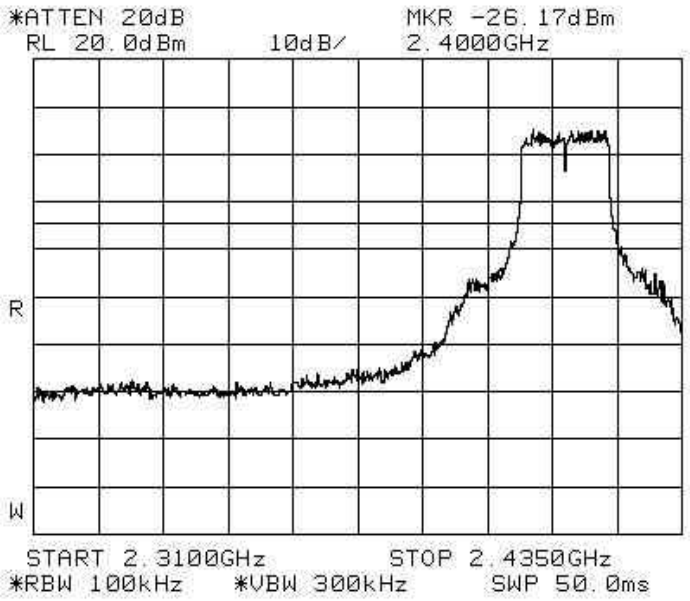
Plot 72 – Lower Band Edge at 2.4000GHz



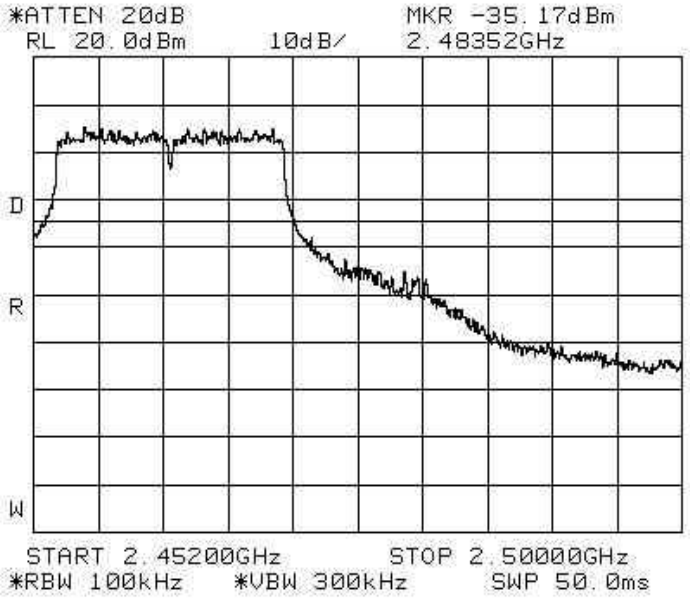
Plot 73 – Upper Band Edge at 2.4835GHz

BAND EDGE COMPLIANCE (CONDUCTED) TEST

Band Edge Compliance (Conducted) Plots - 802.11g @ 36Mbps

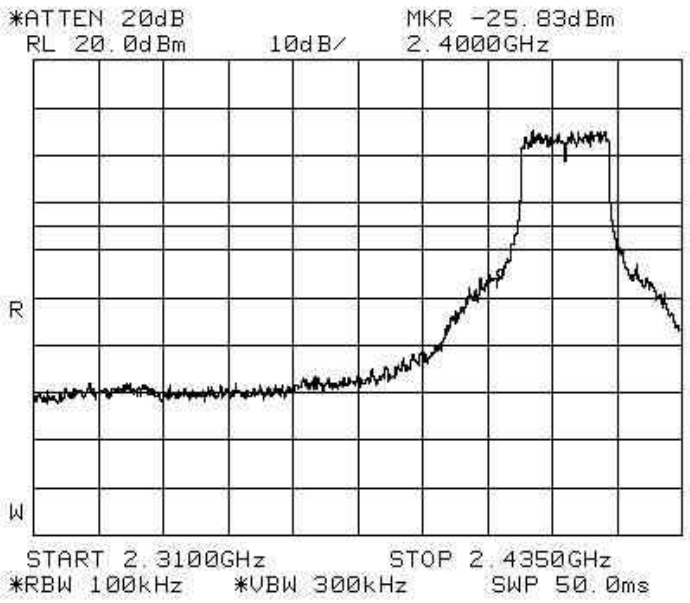


Plot 74 – Lower Band Edge at 2.4000GHz

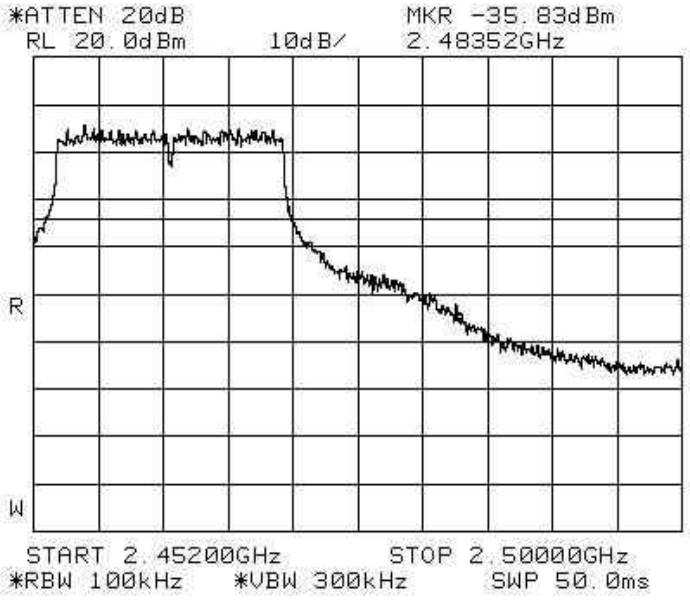


Plot 75 – Upper Band Edge at 2.4835GHz

Band Edge Compliance (Conducted) Plots - 802.11g @ 54Mbps



Plot 76 – Lower Band Edge at 2.4000GHz



Plot 77 – Upper Band Edge at 2.4835GHz

BAND EDGE COMPLIANCE (RADIATED) TEST

FCC Part 15.247(d) Band Edge Compliance (Radiated) Limits

The EUT shows compliance to the requirements of this section, which states in any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator (EUT) is operating, the radio frequency power that is produced by the EUT shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of desired power. In addition, radiated emissions which fall in the restricted bands shall comply to the radiated emission limits specified in 15.209.

FCC Part 15.247(d) Band Edge Compliance (Radiated) Test Instrumentation

Instrument	Model	S/No	Cal Due Date
R&S Test Receiver (20Hz-26.5GHz) – ESMI3	ESMI	829214/005 829550/004	21 Nov 2008
MITEQ Preamplifier (0.1-26.5GHz) – PA4	NSP2650-N	604879	26 Jan 2009
EMCO Horn Antenna – H14	3115	0003-6087	18 May 2008

FCC Part 15.247(d) Band Edge Compliance (Radiated) Test Setup

1. The EUT and supporting equipment were set up as shown in the setup photo.
2. The power supply for the EUT was connected to a filtered mains.
3. The resolution bandwidth (RBW) and the video bandwidth (VBW) of the spectrum analyser were respectively set to 100kHz and 300kHz to show compliance of spurious at band edges are at least 20dB below the carriers. For restricted band spurious at band edges, peak and average measurement plots were taken using the following setting:
   a. Peak Plot:
      RBW = VBW = 1MHz
   b. Average Plot
      RBW = 1MHz, VBW = 10Hz
4. All other supporting equipment were powered separately from another filtered mains.

FCC Part 15.247(d) Band Edge Compliance (Radiated) Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition. The EUT was then configured to operate in the test mode.
2. The frequency span of the spectrum analyser was set to wide enough to capture the lower band edge of the transmission band, 2.400GHz and any spurious emissions at the band edge.
3. The spectrum analyser was set to max hold to capture any spurious emissions within the span. The signal capturing was continuous until no further spurious emissions were detected.
4. The steps 2 to 3 were repeated with the frequency span of the spectrum analyser was set to wide enough to capture the upper band edge frequency of the transmission band, 2.4835GHz and the any spurious emissions at the band-edge.

BAND EDGE COMPLIANCE (RADIATED) TEST

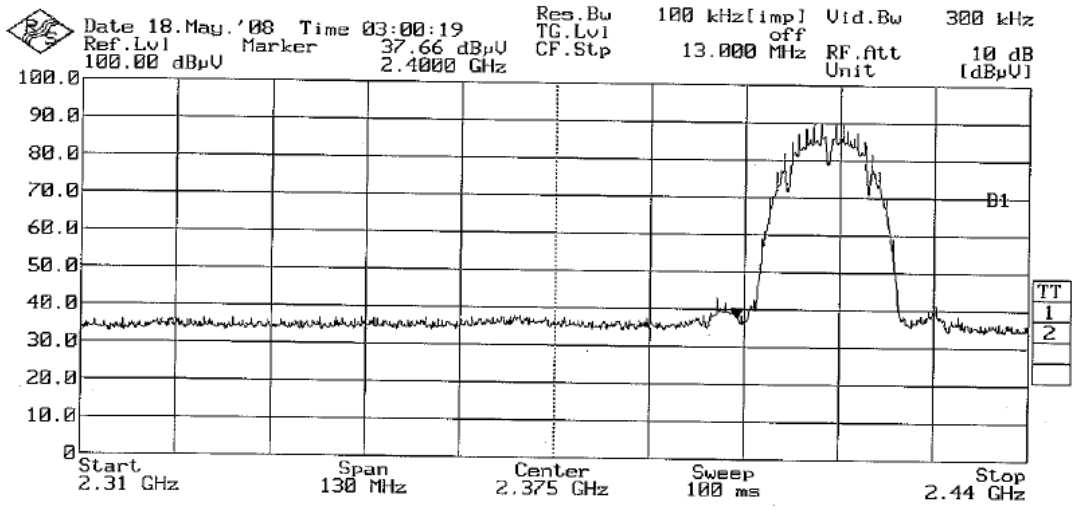
FCC Part 15.247(d) Band Edge Compliance (Radiated) Results

Test Input Power	110V 60Hz	Temperature	23°C
Attached Plots	78 - 83	Relative Humidity	58%
		Atmospheric Pressure	1030mbar
		Tested By	Anthony Toh

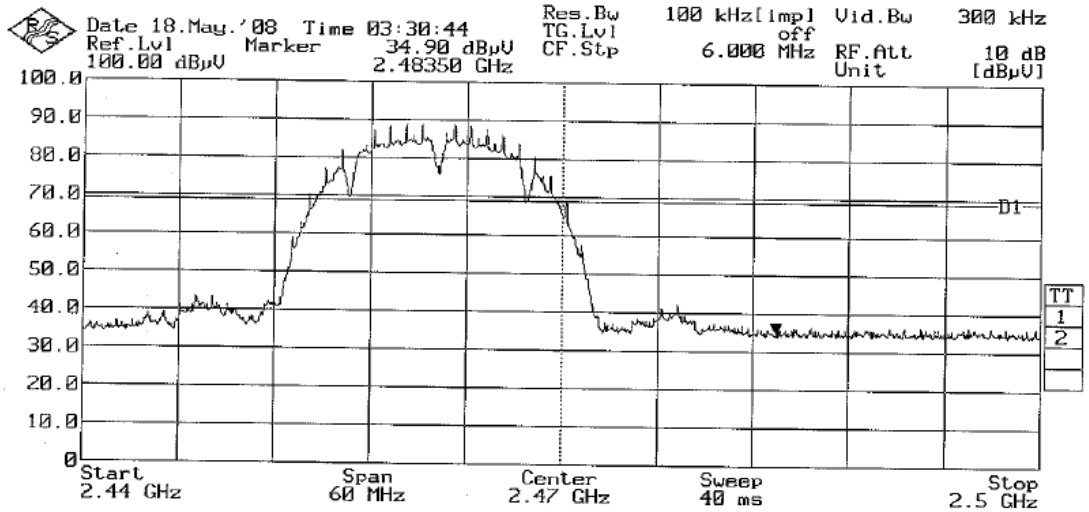
No significant signal was found and they were below the specified limit.

BAND EDGE COMPLIANCE (RADIATED) TEST

Band Edge Compliance (Radiated) Plots (20dB Delta from Carrier at Band Edge) – 802.11b @ 1Mbps (worst case)



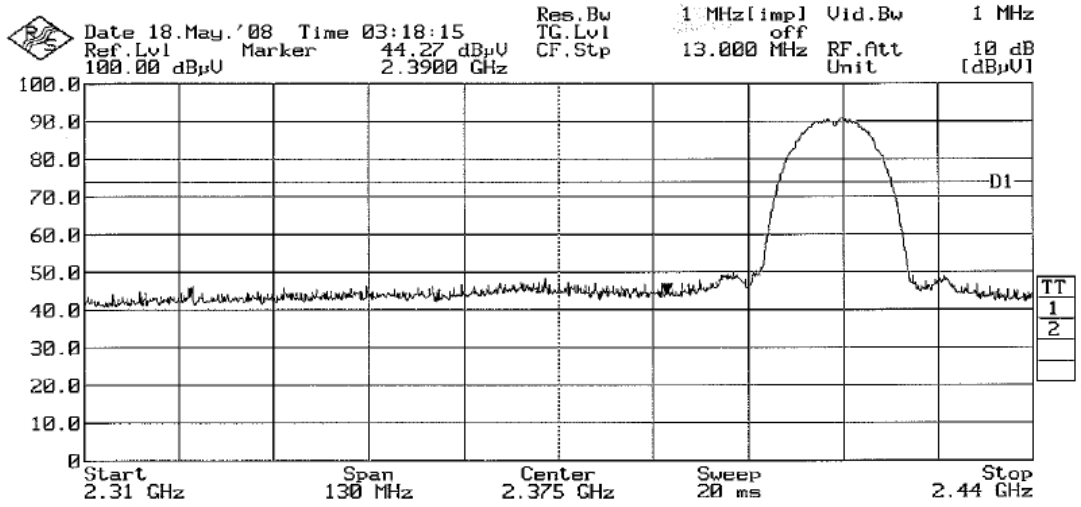
Plot 78 – Lower Band Edge at 2.4000GHz



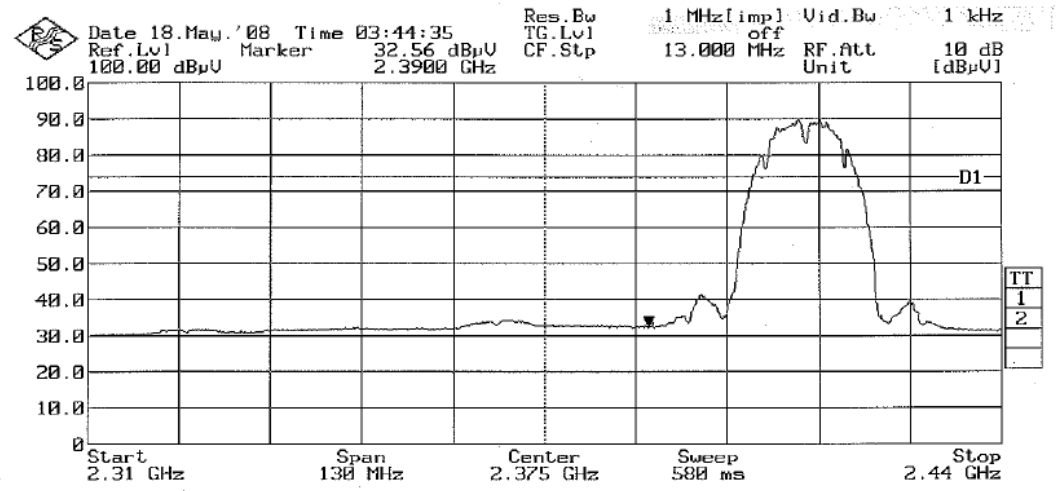
Plot 79 – Upper Band Edge at 2.4835GHz

BAND EDGE COMPLIANCE (RADIATED) TEST

Band Edge Compliance (Radiated) Plots (Restricted Band) - 802.11b @ 1Mbps (worst case)



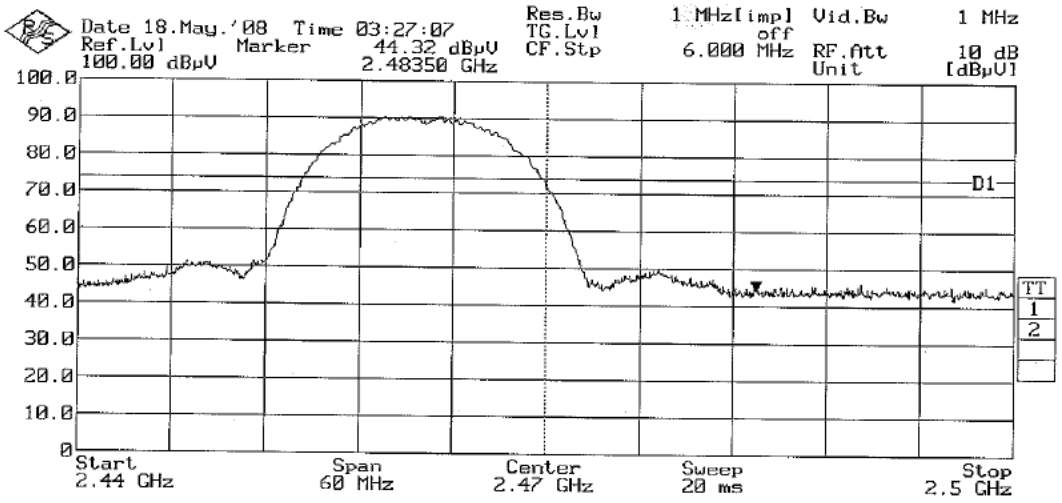
Plot 80 – Peak Plot at Lower Band Edge at 2.4000GHz



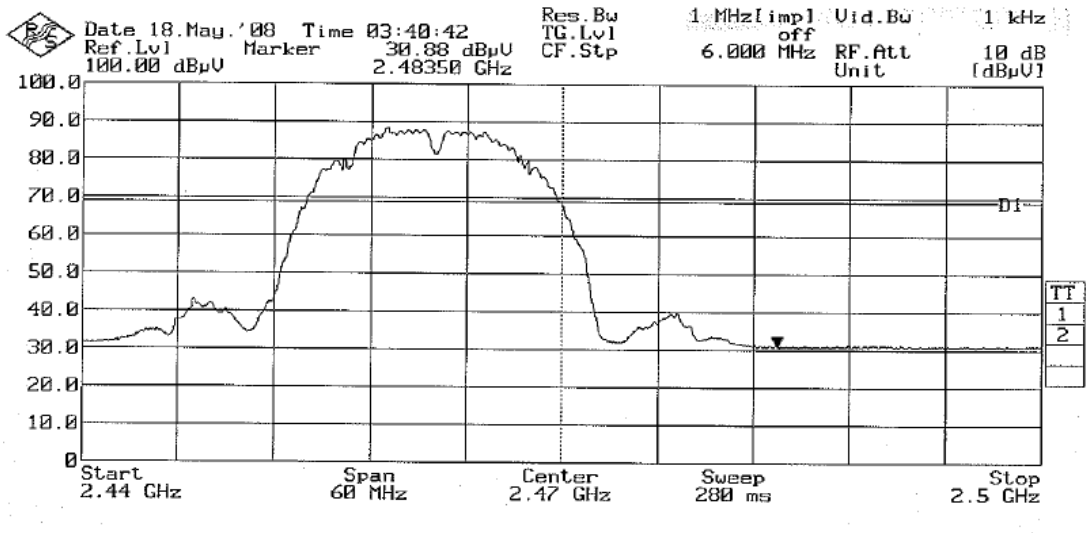
Plot 81 – Average Plot at Lower Band Edge at 2.4000GHz

BAND EDGE COMPLIANCE (RADIATED) TEST

Band Edge Compliance (Radiated) Plots (Restricted Band) - 802.11b @ 1Mbps (worst case)



Plot 82 – Peak Plot at Upper Band Edge at 2.4835GHz



Plot 83 – Average Plot at Upper Band Edge at 2.4835GHz

PEAK POWER SPECTRAL DENSITY TEST

FCC Part 15.247(e) Peak Power Spectral Density Limits

The EUT shows compliance to the requirements of this section, which states the peak power spectral density conducted from the intentional radiator (EUT) to the antenna shall not be greater than 8dBm (6.3mW) in any 3kHz band during any time interval of continuous transmission.

FCC Part 15.247(e) Peak Power Spectral Density Test Instrumentation

Instrument	Model	S/No	Cal Due Date
Bird 10dB Attenuator	10-18A-MFN-XX	10dB 1/5	17 Jan 2009
HP Spectrum Analyzer	8563E	3846A09953	14 Sep 2008
Agilent EMC Analyzer (9kHz-26.5GHz) (Ref)	E7405A	US40240195	17 Jan 2009

FCC Part 15.247(e) Peak Power Spectral Density Test Setup

1. The EUT and supporting equipment were set up as shown in the setup photo.
2. The power supply for the EUT was connected to a filtered mains.
3. The RF antenna connector was connected to the spectrum via a low-loss coaxial cable.
4. The resolution bandwidth (RBW) and the video bandwidth (VBW) of the spectrum analyser were respectively set to 3kHz and 10kHz.
5. All other supporting equipment were powered separately from another filtered mains.

FCC Part 15.247(e) Peak Power Spectral Density Test Method

1. The EUT was switched on and allowed to warm up to its normal operating condition. The EUT was then configured to operate in the test mode at Channel 1 (2.412GHz).
2. The sweep time of the spectrum analyser was set to the value of the ratio of the frequency span divided by the RBW.
3. The peak power density of the transmitting frequency was detected and recorded.
4. The step 3 was repeated with the transmitting frequency was set to Channel 6 (2.437GHz) and Channel 11 (2.462GHz) respectively.

PEAK POWER SPECTRAL DENSITY TEST

FCC Part 15.247(e) Peak Power Spectral Density Results

Test Input Power	110V 60Hz	Temperature	23oC
Attached Plots	84 - 104	Relative Humidity	58%
		Atmospheric Pressure	1030mbar
		Tested By	Song Zhi Qun

802.11b @ 1Mbps

Channel	Channel Frequency (GHz)	Peak Power Spectral Density (mW)	Limit (mW)
1	2.412	0.708	6.3
6	2.437	0.827	6.3
11	2.462	0.607	6.3

802.11b @ 2Mbps

Channel	Channel Frequency (GHz)	Peak Power Spectral Density (mW)	Limit (mW)
1	2.412	0.541	6.3
6	2.437	0.764	6.3
11	2.462	0.795	6.3

802.11b @ 11Mbps

Channel	Channel Frequency (GHz)	Peak Power Spectral Density (mW)	Limit (mW)
1	2.412	4.165	6.3
6	2.437	5.024	6.3
11	2.462	4.867	6.3

802.11g @ 9Mbps

Channel	Channel Frequency (GHz)	Peak Power Spectral Density (mW)	Limit (mW)
1	2.412	0.122	6.3
6	2.437	0.147	6.3
11	2.462	0.117	6.3

802.11g @ 18Mbps

Channel	Channel Frequency (GHz)	Peak Power Spectral Density (mW)	Limit (mW)
1	2.412	0.104	6.3
6	2.437	0.122	6.3
11	2.462	0.100	6.3

FCC Part 15.247(e) Peak Power Spectral Density Results (continued)

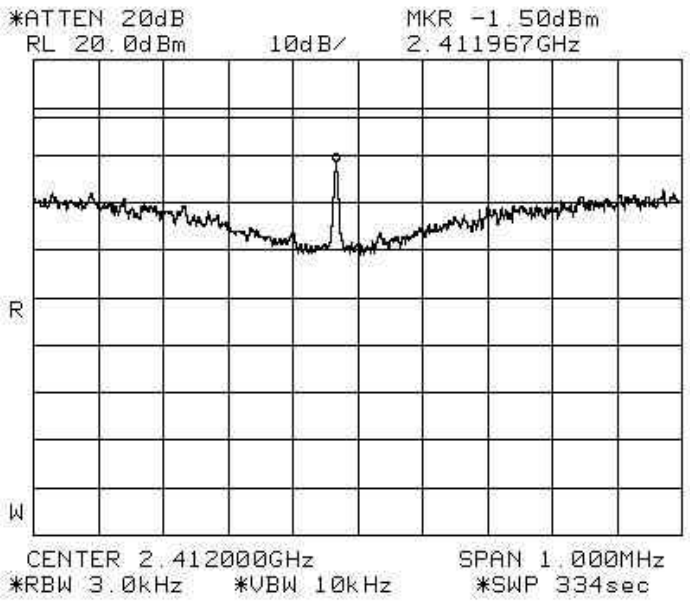
802.11g @ 36Mbps

Channel	Channel Frequency (GHz)	Peak Power Spectral Density (mW)	Limit (mW)
1	2.412	0.100	6.3
6	2.437	0.090	6.3
11	2.462	0.083	6.3

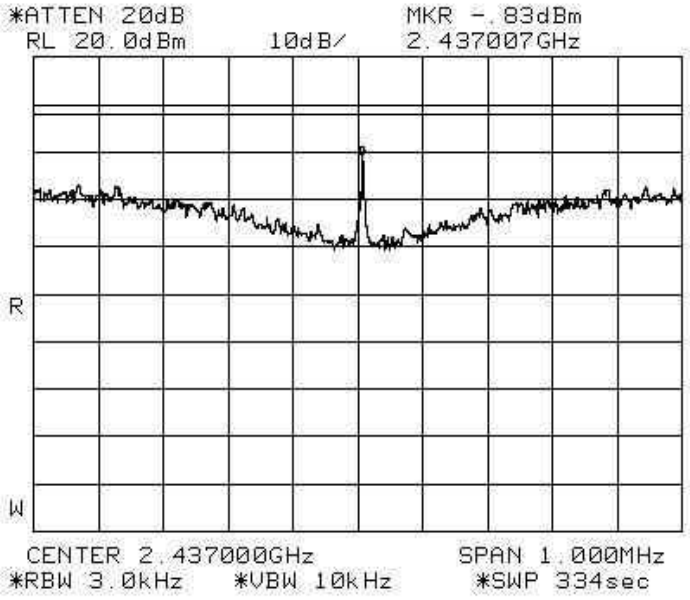
802.11g @ 54Mbps

Channel	Channel Frequency (GHz)	Peak Power Spectral Density (mW)	Limit (mW)
1	2.412	0.097	6.3
6	2.437	0.097	6.3
11	2.462	0.086	6.3

Peak Power Spectral Density Plots - 802.11b @ 1Mbps

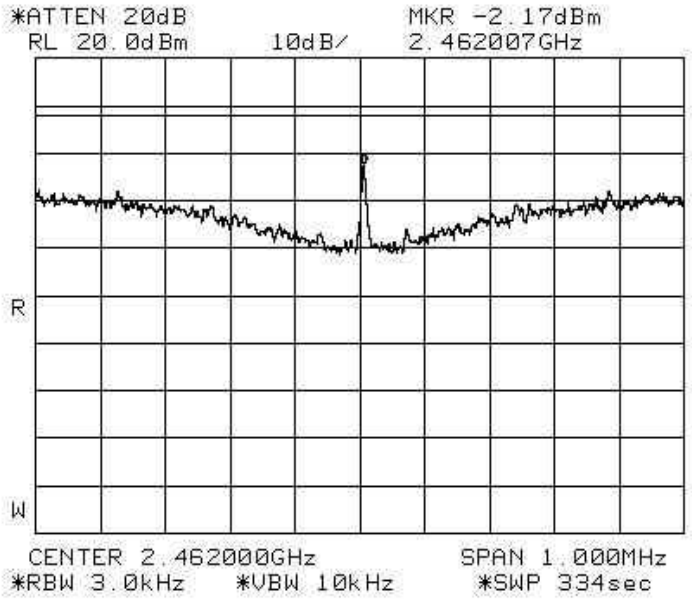


Plot 84 – Channel 1



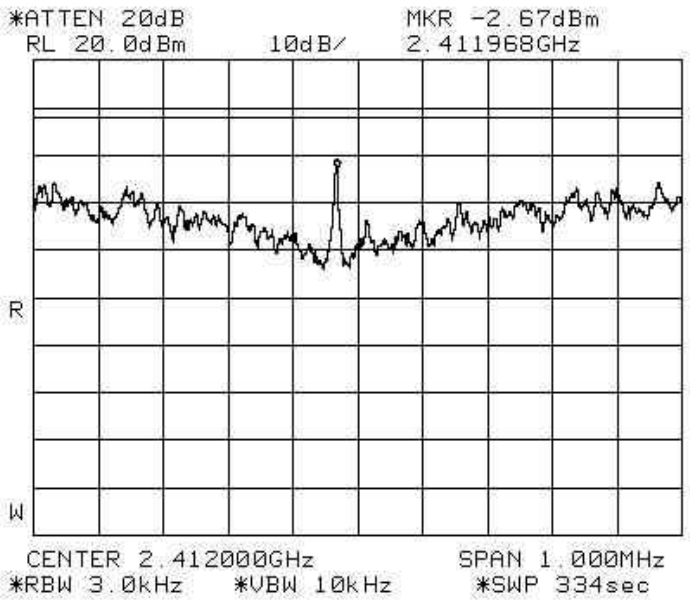
Plot 85 – Channel 6

Peak Power Spectral Density Plots - 802.11b @ 1Mbps

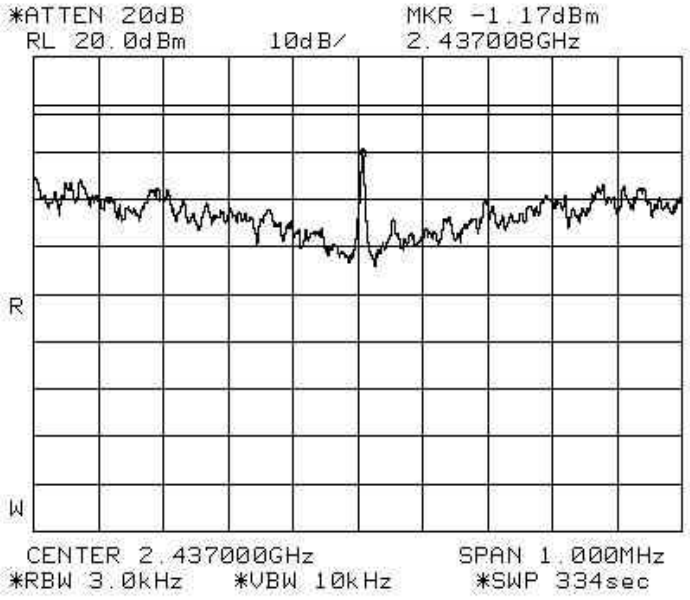


Plot 86 – Channel 11

Peak Power Spectral Density Plots - 802.11b @ 2Mbps

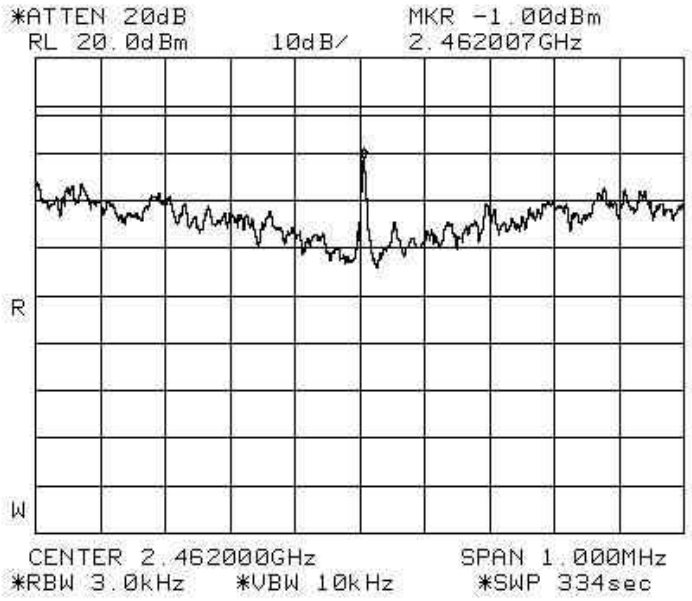


Plot 87 – Channel 1



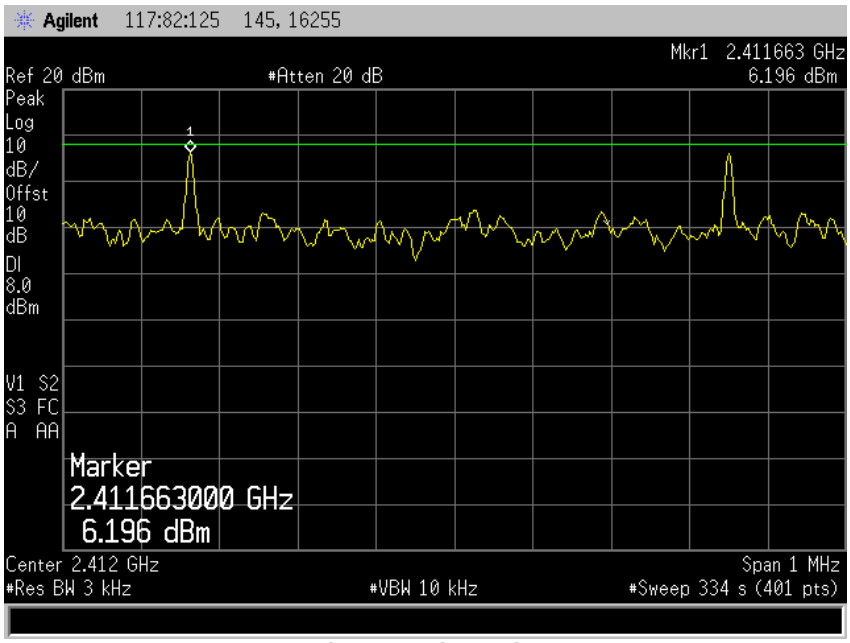
Plot 88 – Channel 6

Peak Power Spectral Density Plots - 802.11b @ 2Mbps

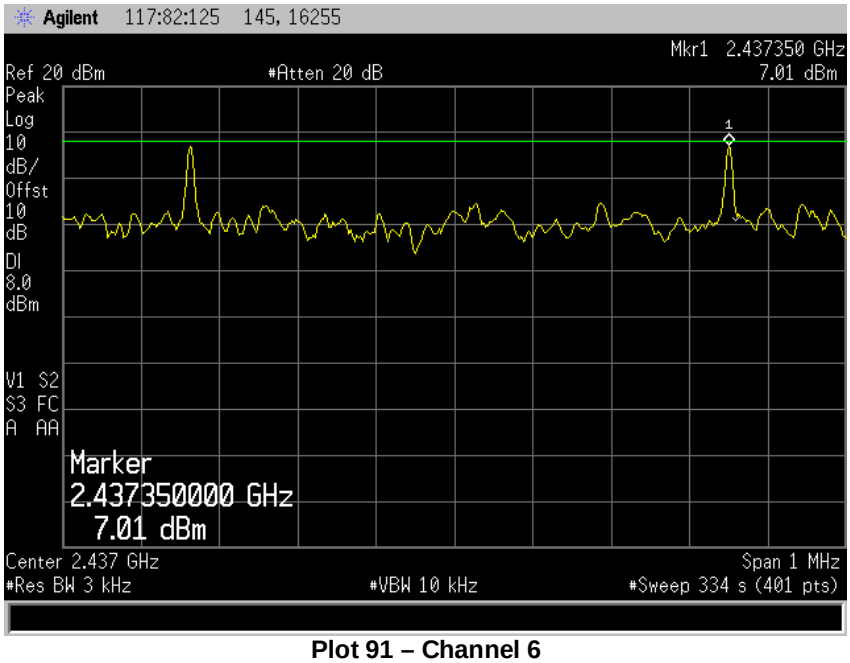


Plot 89 – Channel 11

Peak Power Spectral Density Plots - 802.11b @ 11Mbps

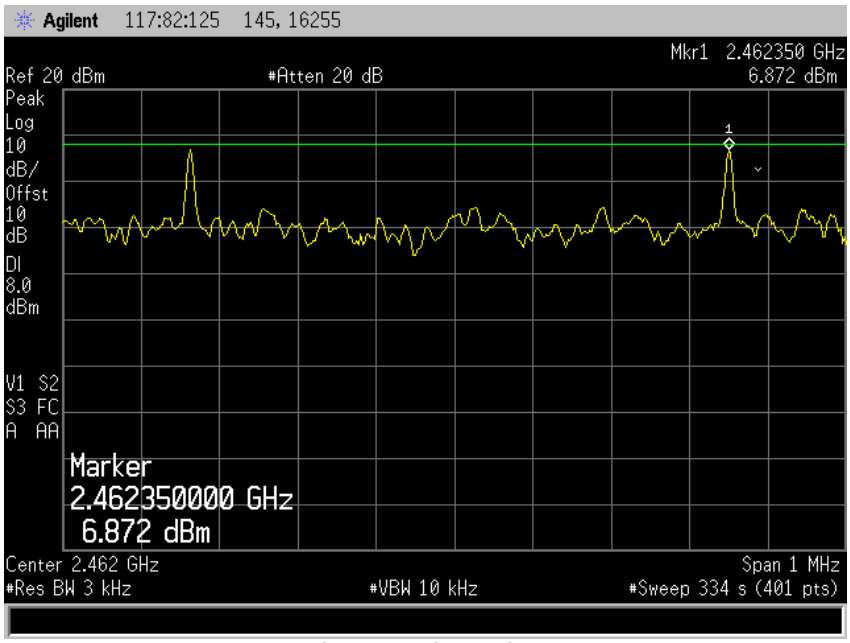


Plot 90 – Channel 1



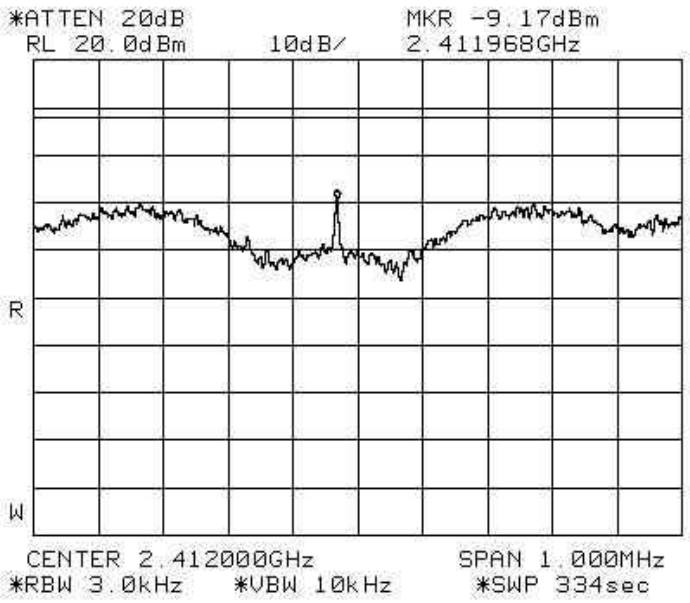
Plot 91 – Channel 6

Peak Power Spectral Density Plots - 802.11b @ 11Mbps

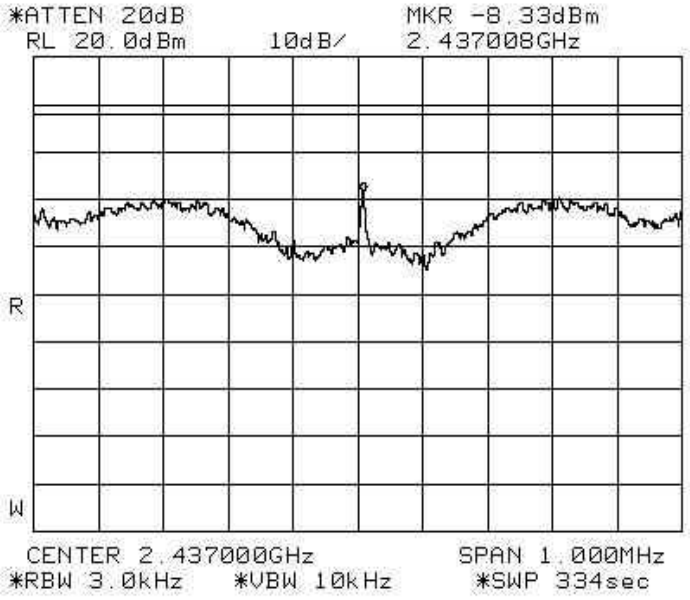


Plot 92 – Channel 11

Peak Power Spectral Density Plots - 802.11g @ 9Mbps

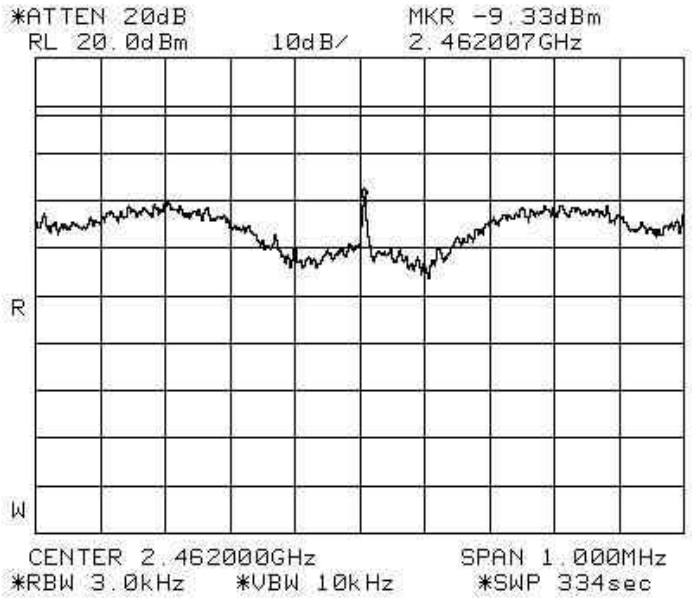


Plot 93 – Channel 1



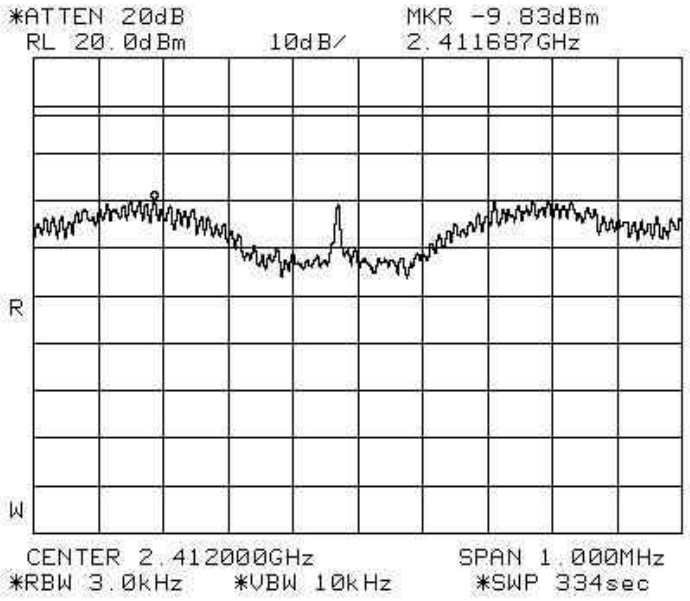
Plot 94 – Channel 6

Peak Power Spectral Density Plots - 802.11g @ 9Mbps

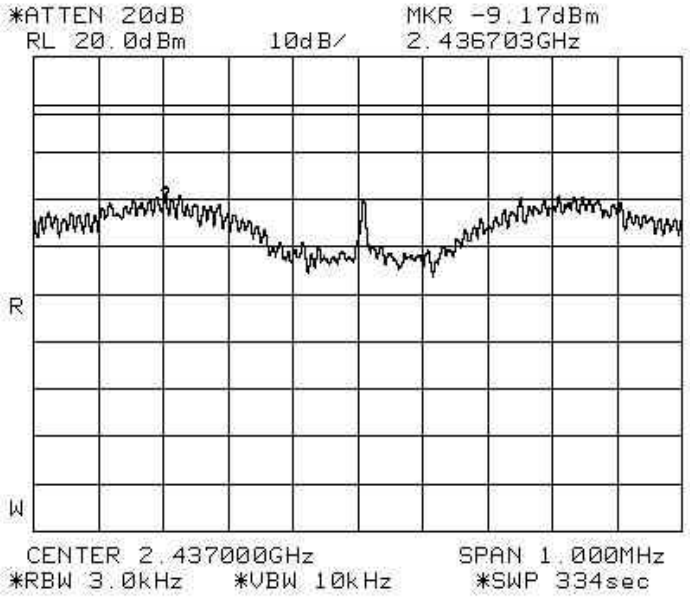


Plot 95 – Channel 11

Peak Power Spectral Density Plots - 802.11g @ 18Mbps

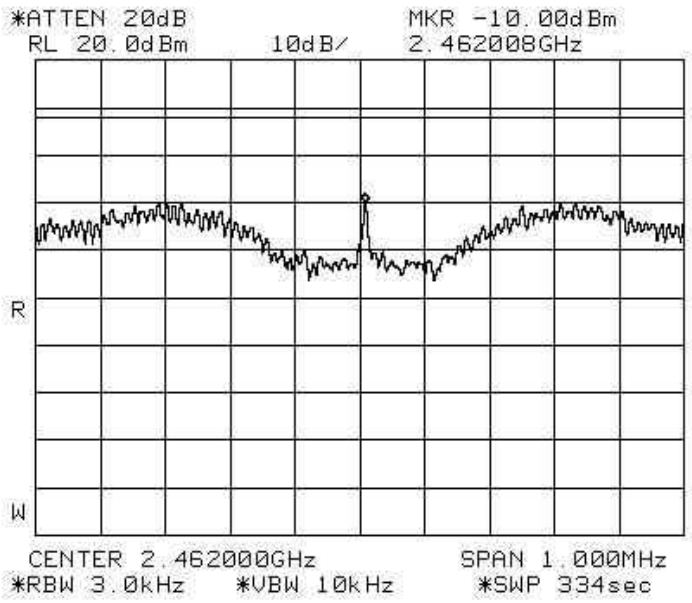


Plot 96 – Channel 1



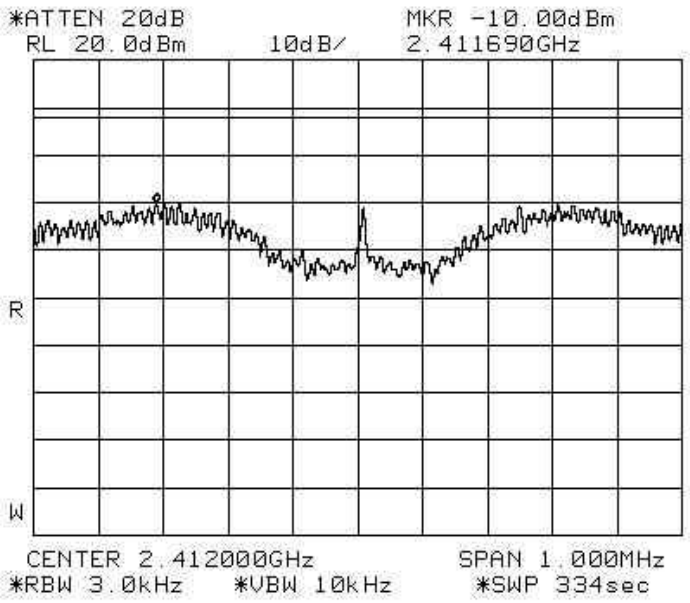
Plot 97 – Channel 6

Peak Power Spectral Density Plots - 802.11g @ 18Mbps

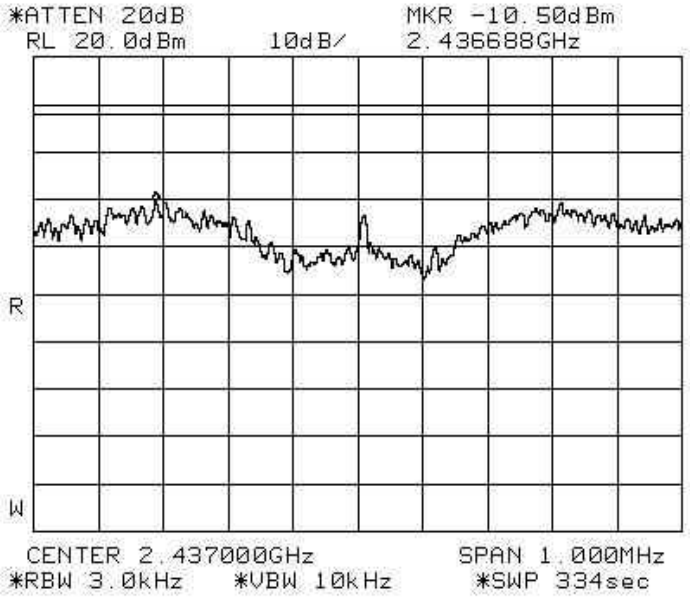


Plot 98 – Channel 11

Peak Power Spectral Density Plots - 802.11g @ 36Mbps

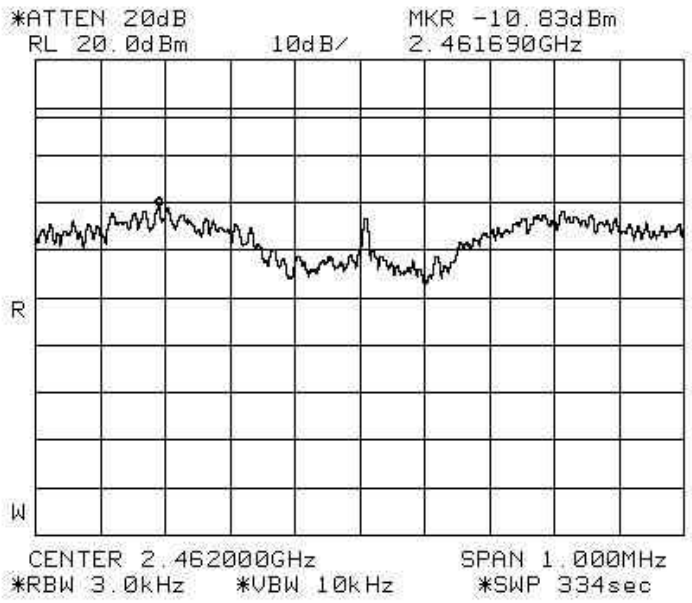


Plot 99 – Channel 1



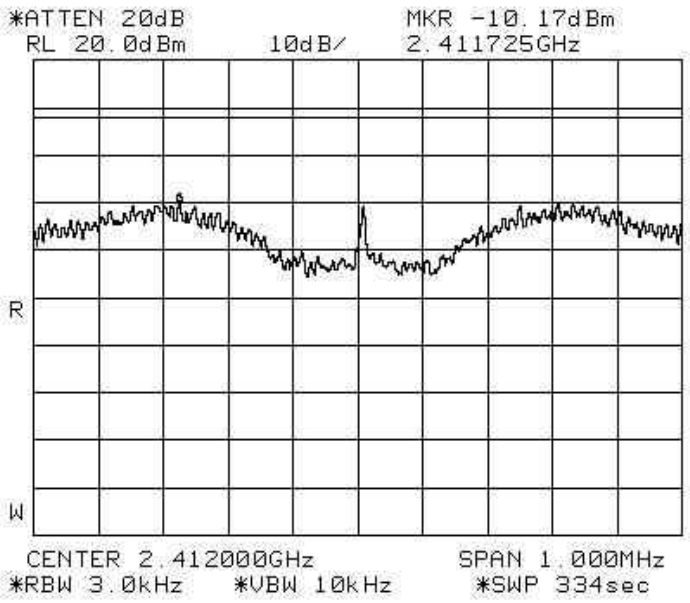
Plot 100 – Channel 6

Peak Power Spectral Density Plots - 802.11g @ 36Mbps

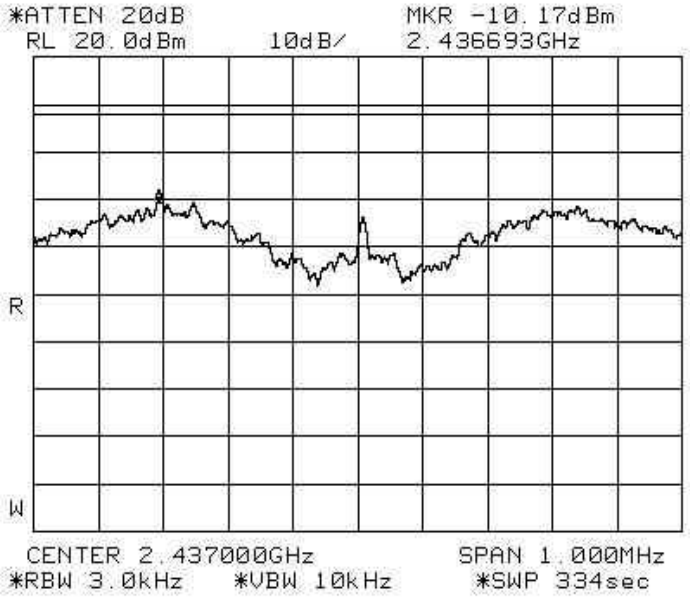


Plot 101 – Channel 11

Peak Power Spectral Density Plots - 802.11g @ 54Mbps



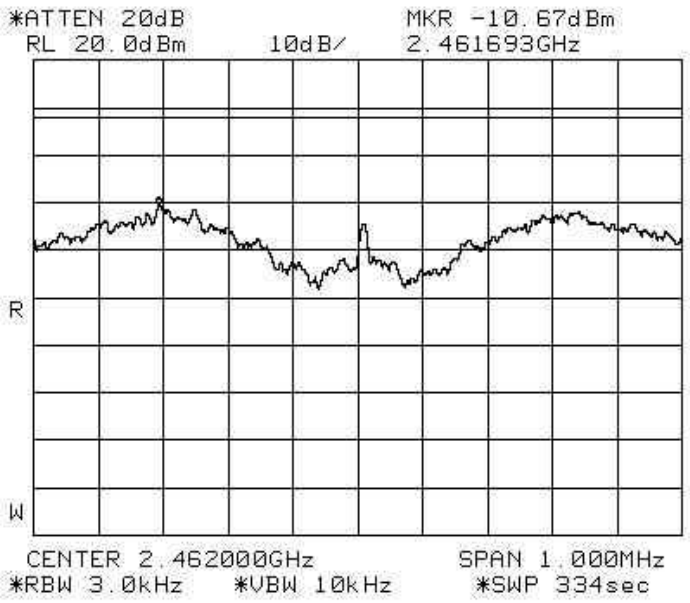
Plot 102 – Channel 1



Plot 103 – Channel 6

PEAK POWER SPECTRAL DENSITY TEST

Peak Power Spectral Density Plots - 802.11g @ 54Mbps



Plot 104 – Channel 11

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January 2008

ANNEX A

EUT PHOTOGRAPHS / DIAGRAMS

(Confidential Refer To Manufacturer For Details)

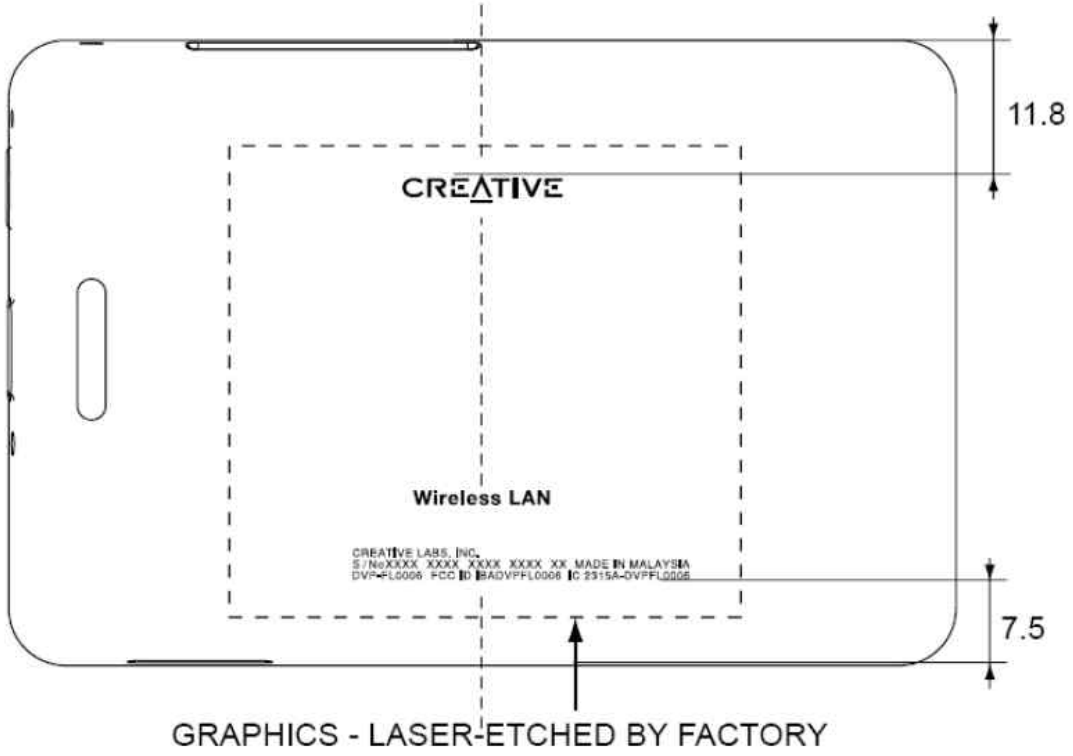
ANNEX B

FCC LABEL & POSITION

FCC LABEL & POSITION — ANNEX B

Labelling requirements per Section 2.925 & 15.19

The label shown will be permanently affixed at a conspicuous location on the device and be readily visible to the user at the time of purchase.



Sample Label & Physical Location of IC Label on EUT

ANNEX C

USER MANUAL
TECHNICAL DESCRIPTION
BLOCK & CIRCUIT DIAGRAMS

(Please refer to manufacturer for details)