

*FCC PART 15, SUBPART B and C
TEST REPORT**for*

INTEL MINI PCI TYPE 802.11 BG
WIRELESS LAN ADAPTER
FOR USE IN THE HP AGENCY SERIES# HSTNN-Q09C
MODEL: WM3B2200BG

Prepared for

HEWLETT PACKARD COMPANY
20555 SH 249
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Prepared by: _____

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DATE: JUNE 6, 2004

	REPORT BODY	APPENDICES					TOTAL
		A	B	C	D	E	
PAGES	22	2	2	2	18	93	139

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GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP, NIST, or any other agency of the U.S. Government.

Device Tested: Intel Mini PCI Type 802.11BG Wireless LAN Adapter
for use in the HP Agency Series# HSTNN-Q09C
Model: WM3B2200BG
S/N: N/A

Product Description: The product is a wireless miniPCI card used for the Hewlett Packard Notebook Computer
Agency Series Number: HSTNN-Q09C.

Modifications: The EUT was not modified during the testing.

Manufacturer: Hewlett Packard Company
20555 SH 249
Houston, Texas 77070

Test Dates: June 2, 3, 5; July 1 and 2, 2004

Test Specifications: EMI requirements
Limits: **Class B** of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207,
15.209, and 15.247

Test Procedure: ANSI C63.4: 2001

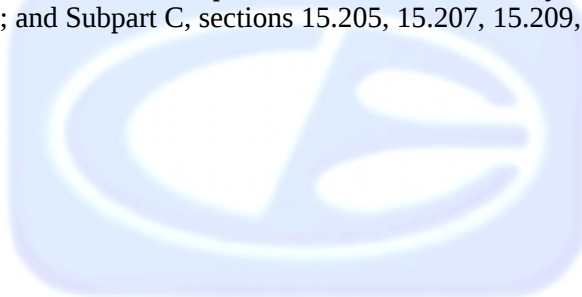
Test Deviations: The test procedure was not deviated from during the testing.

SUMMARY OF TEST RESULTS

TEST	DESCRIPTION	RESULTS
1	Conducted RF Emissions, 150 kHz – 30 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207
2	Spurious Radiated RF Emissions, 30 MHz – 1000 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.209
3	Spurious Radiated RF Emissions, 10 kHz – 30 MHz and 1000 MHz – 25000 MHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and CFR Title 47, Part 15, Subpart C, section 15.247(c)
4	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 10 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(c)
5	Emissions produced by the intentional radiator in restricted bands, 10 kHz – 25 GHz	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.205, 15.209(a), and section 15.247 (c)
6	6 dB Bandwidth	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(a)(2)
7	Peak Power Output	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(b)(3)
8	RF Conducted Antenna Test	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247(c)
9	Peak Power Spectral Density Conducted from the Intentional Radiator to the Antenna Port	Complies with the relevant requirements of CFR Title 47, Part 15, Subpart C, section 15.247 (d)

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Intel Mini PCI Type 802.11BG Wireless LAN Adapter (for use in the HP Agency Series# HSTNN-Q09C). Model: WM3B2200BG. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2001. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the specification limits defined by the **Class B** limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247.



2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests of the testing described herein were performed at the test facility of Compatible Electronics at the following location:

114 Olinda Drive, Brea, California 92823

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Hewlett Packard Company

David Wissel PSG Global Business Units – Mobile Computing

Compatible Electronics, Inc.

Kyle Fujimoto Test Engineer

Michael Christensen Lab Manager, Brea Division

2.4 Date Test Sample was Received

The test sample was received on May 24, 2004.

2.5 Disposition of the Test Sample

The sample has not been returned to Hewlett Packard Company as of June 1, 2004.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

RF	Radio Frequency
EMI	Electromagnetic Interference
EUT	Equipment Under Test
P/N	Part Number
S/N	Serial Number
HP	Hewlett Packard
ITE	Information Technology Equipment
CML	Corrected Meter Limit
LISN	Line Impedance Stabilization Network

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

SPEC	TITLE
FCC Title 47, Part 15 Subpart C	FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators
ANSI C63.4 2001	Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz
FCC Title 47, Part 15 Subpart B	FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

Setup and operation of the equipment under test.

Specifics of the EUT and Peripherals Tested

The Intel Mini PCI Type 802.11BG Wireless LAN Adapter (for use in the HP Agency Series# HSTNN-Q09C) Model: WM3B2200BG was directly connected to the laptop's miniPCI port underneath. The laptop was also connected to the AC Adapter via its power port. The EUT was continuously transmitting and receiving. The commands for the EUT were programmed using the special test software provided.

Note: For all tests, the main antenna port was tested, with the auxiliary antenna port being spot checked to insure the readings were not higher.

The final radiated as well as the conducted data was taken in the mode above. Please see Appendix E for the data sheets.

4.1.1 Cable Construction and Termination

Cable 1

This is a 1.75 meter unshielded cable connecting the laptop to the AC Adapter. It has a 1/8 inch power connector at the laptop end and is hard wired into the laptop. The cable was bundled to a length of 1.1 meters.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT**5.1 EUT and Accessory List**

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID
Equipment Name				
Intel Mini PCI Type 802.11BG Wireless LAN Adapter (EUT)	INTEL CORPORATION	WM3B2200BG	N/A	CNTWM3B2200BG
EUT Sub-Assemblies				
Auxiliary PIFA Antenna	WISTRON NeWeb CORPORATION	P/N: WN-S-1.13W- 470MM(2-4-1)	N/A	N/A
Main PIFA Antenna	WISTRON NeWeb CORPORATION	P/N: WN-S-1.13B- 500MM (2-4-1)	N/A	N/A
Host Equipment List				
LAPTOP (AGENCY SERIES #: HSTNN-Q09C)	HEWLETT PACKARD COMPANY	KT2	CNF4151HTC	DoC
AC ADAPTER FOR LAPTOP	HEWLETT PACKARD COMPANY	P/N: 239427-003	F3-040200617D	N/A

5.2 EMI Test Equipment

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiate Emissions Data Capture Program	Compatible Electronics	2.0	N/A	N/A	N/A
Conducted Emissions Program	Compatible Electronics	2.3 (SR19)	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08767	June 25, 2003	June 25, 2004
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22262	June 25, 2003	June 25, 2004
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	June 24, 2003	June 24, 2004
EMI Test Receiver	Rohde & Schwarz	ESIB40	100172	July 22, 2003	July 22, 2004
RF Attenuator	Weinschel Corp.	2	BJ6396	August 7, 2003	Aug. 7, 2004
LISN	Com Power	LI-215	12078	November 22, 2003	Nov. 22, 2004
LISN	Com Power	LI-215	12082	November 22, 2003	Nov. 22, 2004
Preamplifier	Com Power	PA-102	1017	January 6, 2004	Jan. 6, 2005
Biconical Antenna	Com Power	AB-100	1548	October 8, 2003	Oct. 8, 2004
Log Periodic Antenna	Com Power	AL-100	16089	October 8, 2003	Oct. 8, 2004
Antenna Mast	Com Power	AM-100	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Hewlett Packard	4530	US91912319	N/A	N/A
Monitor	Hewlett Packard	D5258A	TW74500641	N/A	N/A
Loop Antenna	Com Power	AL-130	17070	June 19, 2002	June 19, 2004

5.3 EMI Test Equipment (Continued)

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
RF Peak Power Meter / Analyzer	Boonton Electronics Corp.	4500A-01-30	1282	February 23, 2004	Feb. 23, 2005
Peak Power Sensor	Boonton Electronics Corp.	57318	3723	February 23, 2004	Feb. 23, 2005
Horn Antenna	Com Power	AH-118	10085	January 8, 2004	Jan. 8, 2005
Microwave Preamplifier	Com Power	PA-122	25196	March 4, 2004	Mar. 4, 2005
Microwave Preamplifier	Com Power	PA-122	181917	April 20, 2004	Apr. 20, 2005
Microwave Preamplifier	Com Power	PA-840	711812	February 24, 2004	Feb. 24, 2005
Horn Antenna	Com Power	AH826	081006	December 22, 2003	Dec. 22, 2004

6. TEST SITE DESCRIPTION

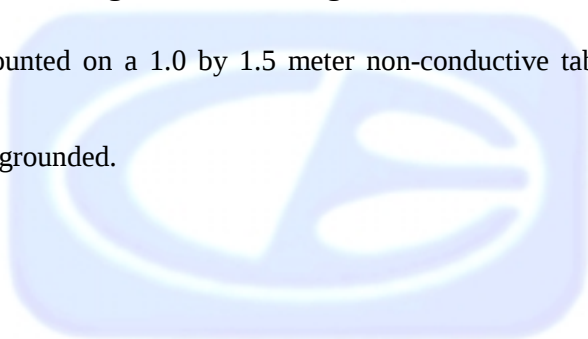
6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded.



7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Antenna Gain

The antenna has a worst case gain of -0.24 dBi peak for the main antenna and -0.73 dBi peak for the auxiliary antenna.



8. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A 10 dB attenuation pad was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 2001. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave. The final qualification data is located in Appendix E.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Section 15.207 for conducted emissions.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The EMI Receiver was used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-102 was used for frequencies from 30 MHz to 1 GHz, the Com-Power Microwave Preamplifier Model: PA-122 was used for frequencies from 1 GHz to 18 GHz, and the Com Power Microwave Preamplifier Model: PA-840 was used for frequencies from 18 GHz to 25 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the EMI Receiver records the highest measured reading over all the sweeps.

The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets.

The frequencies above 1 GHz were averaged using the EMI Receiver's average detector.

The measurement bandwidths and transducers used for the radiated emissions test were:

FREQUENCY RANGE	EFFECTIVE MEASUREMENT BANDWIDTH	TRANSDUCER
10 kHz to 150 kHz	200 Hz	Active Loop Antenna
150 kHz to 30 MHz	9 kHz	Active Loop Antenna
30 MHz to 300 MHz	120 kHz	Biconical Antenna
300 MHz to 1 GHz	120 kHz	Log Periodic Antenna
1 GHz to 25 GHz	1 MHz	Horn Antenna

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2001. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT by the Radiated Emission Manual Test software. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Radiated Emissions (Spurious and Harmonics) Test (con't)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance to obtain final data.



8.2 6 dB and 20 dB Bandwidth

The 6 dB and 20 dB bandwidths were measured using the EMI Receiver. The bandwidth was measured using a direct connection from the RF out on the EUT. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz.

Test Results:

The EUT complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (a)(2).

8.3 Peak Output Power

The Peak Output Power was measured using the power meter and power sensor. The EUT was directly connected to the power sensor, which was directly connected to the power meter. The Peak Output Power was then measured

Test Results:

The EUT complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (b)(3).

8.4 RF Antenna Conducted Test

The RF antenna conducted test was performed using the EMI Receiver. The RF antenna conducted test was measured using a direct connection from the RF out on the EUT into the input of the analyzer. The resolution bandwidth was 100 kHz, and the video bandwidth 300 kHz. The spans were wide enough to include all the harmonics and emissions that were produced by the intentional radiator.

Test Results:

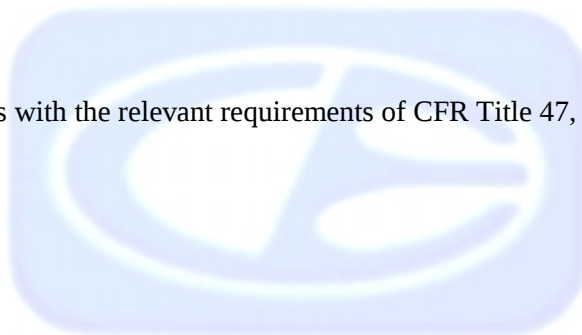
The EUT complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (c).

8.5 Spectral Density Output

The spectral density output was measured using the EMI Receiver. The spectral density output was measured using a direct connection from the RF out on the EUT into the input of the EMI Receiver. The resolution bandwidth was 3 kHz, and the video bandwidth was 10 kHz. The highest 1.5 MHz of the signal was used as the frequency span with the sweep rate being 1 second for every 3 kHz of span.

Test Results:

The EUT complies with the relevant requirements of CFR Title 47, Part 15, Subpart C section 15.247 (d).



8.6 RF Band Edges

The RF band edges were measured at the start of the restricted bands (2390 MHz and 2483.5 MHz). The readings taken were also averaged by the EMI Receiver. Data sheets are included in Appendix E, which compares the reading from the EMI Receiver to the spec limit.

Readings that were taken using the Marker Delta Method were derived as follows:

1. Set the EUT to transmit on the highest operating frequency near the edge of the restricted band. Set the EMI Receiver sweep to the edge of the restricted band and set the span wide enough to encompass the fundamental signal and the edge of the restricted band.
2. Make a radiated emissions measurement of the fundamental at 3 meters on the OATS. Maximize the level of the emission. Using MAX HOLD and Peak Search, record the highest peak and average level. (Peak: RBW = VBW = 1 MHz; AVG: RBW = 1 MHz, VBW = 10 Hz)
3. Connect a coax cable to the antenna output of the EUT and measure directly to the EMI Receiver. Use the same center frequency and span settings that were used for steps #1 and #2. Reduce the RBW to 100 kHz (this has been specified for band edge 2.4 GHz 15.247, Note: this is about 1% and 1% would probably suffice for most measurements.) Set the VBW = 1 MHz for peak, 10 Hz for AVG (identical to previous readings). Using MAX HOLD, then "Peak Search" and "Marker Delta" determine the "delta dB" from the peak of the fundamental to the maximum level within the restricted band. This dBc level is the "Delta dB" reading.
4. If the maximum level within the restricted band is within two standard BW (where a "standard" bandwidth is the bandwidth specified by ANSI C63.4: 2001 for the frequency being measured, or 1 MHz for > 1GHz) of the edge of the restricted band, measure the amount that the level of the fundamental dropped when the RBW was changed from 1 MHz to the RBW used in step 2.
5. Calculate the PEAK and Average level within the restricted band in dBuV/m using the equations below:

For readings within two standard bandwidths of the band edge:

Restricted band level (Peak) = Peak reference level – delta dB – BW delta dB (step #4)

Restricted band level (AVG) = Average reference level – delta dB – BW delta dB (step #4)

For readings that are outside the two standard bandwidths of the band edge:

Restricted band level (Peak) = Peak reference level – delta dB

Restricted band level (AVG) = AVG reference level – delta dB

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart C section 15.247 (c). The RF power at the restricted bands closest to the band edges at 2390 MHz and 2483.5 MHz meet the limits of section 15.209. Please see the data sheets located in Appendix E.

9. CONCLUSIONS

The Intel Mini PCI Type 802.11BG Wireless LAN Adapter (for use in the HP Agency Series# HSTNN-Q09C) Model: WM3B2200BG meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.247.



APPENDIX A

LABORATORY RECOGNITIONS

LABORATORY RECOGNITIONS

Compatible Electronics has the following agency accreditations:

National Voluntary Laboratory Accreditation Program - Lab Code: 200528-0

Voluntary Control Council for Interference - Registration Numbers: R-983, C-1026, R-984 and C-1027

Bureau of Standards and Metrology Inspection - Reference Number: SL2-IN-E-1031

Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

Compatible Electronics is recognized or on file with the following agencies:

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)

APPENDIX B

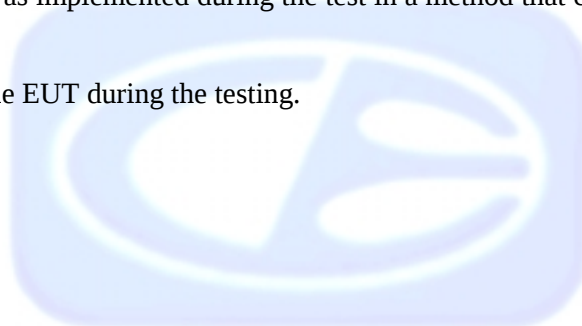
MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and Subpart C specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

No modifications were made to the EUT during the testing.



APPENDIX C

***ADDITIONAL MODELS COVERED
UNDER THIS REPORT***

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

Intel Mini PCI Type 802.11BG Wireless LAN Adapter (for use in
the HP Agency Series# HSTNN-Q09C)
Model: WM3B2200BG
S/N: N/A

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

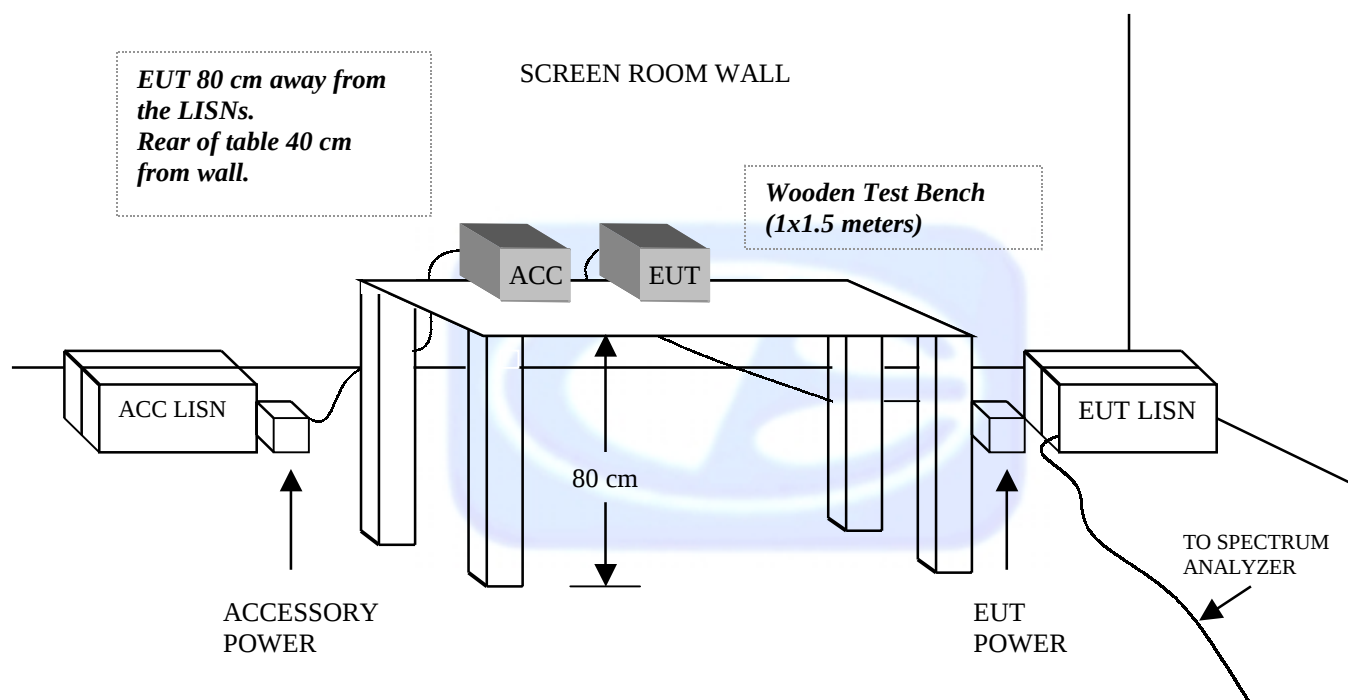
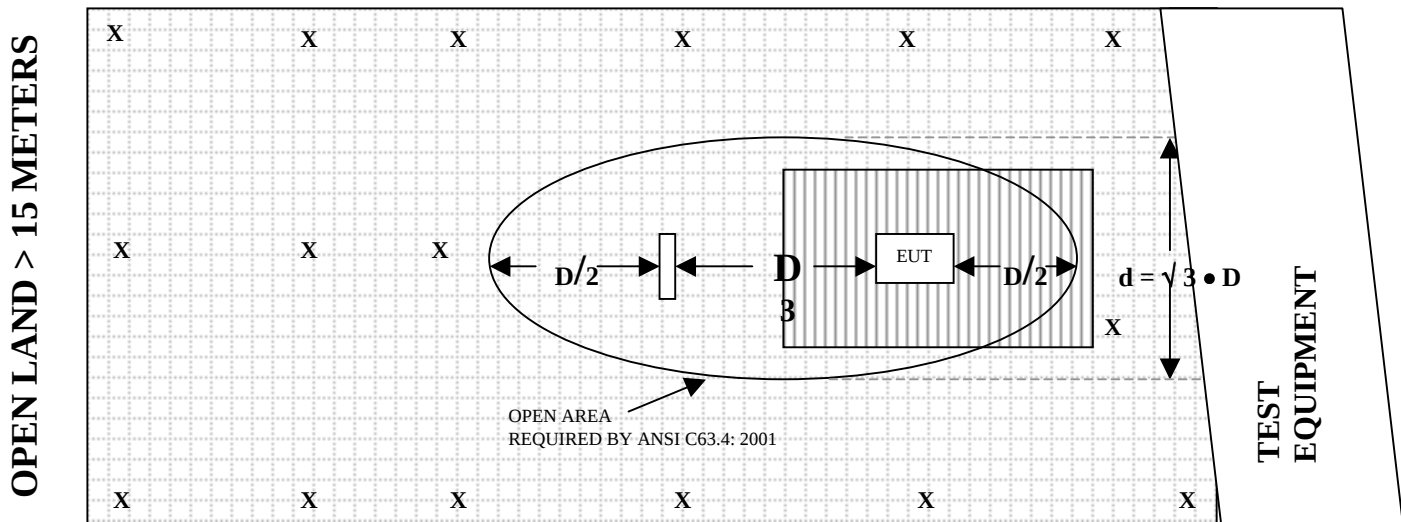


FIGURE 2: PLOT MAP AND LAYOUT OF 3 METER RADIATED SITE

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

X	= GROUND RODS		= GROUND SCREEN
D	= TEST DISTANCE (meters)		= WOOD COVER



FRONT VIEW

HEWLETT PACKARD COMPANY
INTEL MINI PCI TYPE 802.11BG WIRELESS LAN ADAPTER
FOR USE IN THE HP AGENCY SERIES# HSTNN-Q09C
MODEL: WM3B2200BG

FCC SUBPART C - RADIATED EMISSIONS – 06-02-04, 06-03-04, and 06-04-04

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



FRONT VIEW

HEWLETT PACKARD COMPANY
INTEL MINI PCI TYPE 802.11BG WIRELESS LAN ADAPTER
FOR USE IN THE HP AGENCY SERIES# HSTNN-Q09C
MODEL: WM3B2200BG
FCC SUBPART C - RADIATED EMISSIONS – 07-01-04 and 07-02-04

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

HEWLETT PACKARD COMPANY
INTEL MINI PCI TYPE 802.11BG WIRELESS LAN ADAPTER
FOR USE IN THE HP AGENCY SERIES# HSTNN-Q09C
MODEL: WM3B2200BG
FCC SUBPART C - RADIATED EMISSIONS – 07-01-04 and 07-02-04

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

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Agoura, CA 91301
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Silverado Division
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(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

HEWLETT PACKARD COMPANY
INTEL MINI PCI TYPE 802.11BG WIRELESS LAN ADAPTER
FOR USE IN THE HP AGENCY SERIES# HSTNN-Q09C
MODEL: WM3B2200BG
FCC CLASS B - RADIATED EMISSIONS – 06-05-04

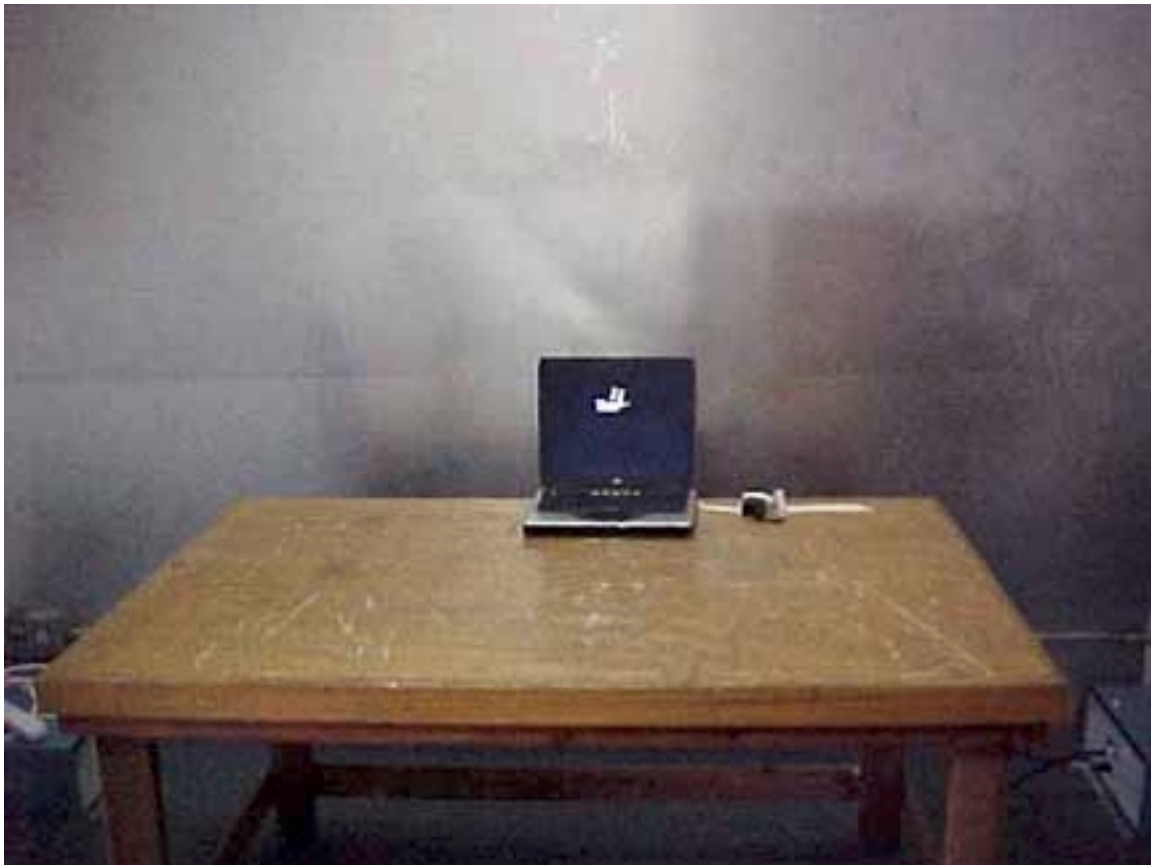
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
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(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



FRONT VIEW

HEWLETT PACKARD COMPANY
INTEL MINI PCI TYPE 802.11BG WIRELESS LAN ADAPTER
FOR USE IN THE HP AGENCY SERIES# HSTNN-Q09C
MODEL: WM3B2200BG
FCC CLASS B - CONDUCTED EMISSIONS – 06-05-04

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



REAR VIEW

HEWLETT PACKARD COMPANY
INTEL MINI PCI TYPE 802.11BG WIRELESS LAN ADAPTER
FOR USE IN THE HP AGENCY SERIES# HSTNN-Q09C
MODEL: WM3B2200BG
FCC CLASS B - CONDUCTED EMISSIONS – 06-05-04

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

COM-POWER AB-100

BICONICAL ANTENNA

S/N: 1548

CALIBRATION DATE: OCTOBER 8, 2003

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	13.1	120	9.9
35	12.9	125	11.4
40	14.6	140	12.0
45	12.8	150	13.0
50	12.9	160	13.9
60	9.3	175	14.2
70	8.2	180	14.3
80	8.0	200	14.9
90	8.1	250	16.6
100	8.8	300	19.7

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16089

CALIBRATION DATE: OCTOBER 8, 2003

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.8	700	20.0
400	14.4	800	21.2
500	16.0	900	20.8
600	17.7	1000	21.7

COM-POWER PA-102**PREAMPLIFIER**

S/N: 1017

CALIBRATION DATE: JANUARY 6, 2004

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	37.8	300	37.6
40	37.5	350	37.5
50	37.7	400	37.5
60	37.5	450	37.0
70	37.5	500	37.1
80	37.5	550	37.3
90	37.5	600	37.1
100	37.5	650	37.4
125	37.8	700	37.1
150	37.5	750	37.1
175	37.5	800	36.8
200	37.6	850	36.2
225	37.6	900	35.3
250	37.5	950	35.9
275	37.6	1000	35.3

COM-POWER PA-122**MICROWAVE PREAMPLIFIER**

S/N: 25196

CALIBRATION DATE: MARCH 4, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	32.1	6.0	28.9
1.1	32.0	6.5	29.3
1.2	31.8	7.0	29.7
1.3	31.6	7.5	29.8
1.4	31.5	8.0	29.9
1.5	31.4	8.5	30.2
1.6	31.2	9.0	30.3
1.7	31.0	9.5	29.9
1.8	30.8	10.0	29.3
1.9	30.7	11.0	28.5
2.0	30.5	12.0	30.5
2.5	30.0	13.0	31.1
3.0	29.7	14.0	29.9
3.5	29.2	15.0	29.8
4.0	28.6	16.0	29.1
4.5	28.4	17.0	28.0
5.0	28.3	18.0	26.0
5.5	28.5		

COM-POWER PA-122**MICROWAVE PREAMPLIFIER**

S/N: 181917

CALIBRATION DATE: APRIL 20, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	34.234	7.5	33.289
1.25	33.984	8.0	33.480
1.50	33.570	8.5	34.555
1.75	33.375	9.0	35.637
2.0	33.312	9.5	36.276
2.25	33.257	10.0	36.153
2.5	33.253	10.5	34.842
2.75	33.484	11.0	33.345
3.0	33.437	11.5	32.911
3.25	33.514	12.0	33.033
3.5	33.596	12.5	34.039
3.75	33.687	13.0	34.308
4.0	33.973	13.5	34.238
4.25	34.195	14.0	33.397
4.5	34.503	14.5	32.990
4.75	34.818	15.0	32.772
5.0	34.986	15.5	33.062
5.5	35.342	16.0	33.887
6.0	35.259	16.5	34.591
6.5	34.788	17.0	34.842
7.0	33.716	17.5	34.085
		18.0	33.640

COM-POWER PA-840**MICROWAVE PREAMPLIFIER**

S/N: 711812

CALIBRATION DATE: FEBRUARY 24, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	21.390	29.0	22.694
18.5	21.380	29.5	22.829
19.0	22.186	30.0	23.211
19.5	22.786	30.5	22.892
20.0	23.454	31.0	23.414
20.5	24.461	31.5	23.248
21.0	24.722	32.0	23.191
21.5	24.748	32.5	23.064
22.0	24.859	33.0	23.103
22.5	24.805	33.5	23.104
23.0	24.631	34.0	23.629
23.5	24.774	34.5	23.859
24.0	24.732	35.0	24.069
24.5	24.931	35.5	24.649
25.0	24.706	36.0	24.440
25.5	24.641	36.5	25.031
26.0	24.138	37.0	24.849
26.5	24.283	37.5	24.818
27.0	23.721	38.0	25.176
27.5	23.765	39.5	24.623
28.0	23.356	39.0	24.360
28.5	22.789	39.5	23.245
		40.0	21.381

COM POWER AH-118**HORN ANTENNA****S/N: 10085****CALIBRATION DATE: JANUARY 8, 2004**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.5	9.5	38.7
1.5	26.7	10.0	38.7
2.0	30.8	10.5	39.2
2.5	30.3	11.0	39.2
3.0	30.3	11.5	40.3
3.5	30.7	12.0	41.2
4.0	31.3	12.5	41.7
4.5	32.6	13.0	41.5
5.0	33.9	13.5	41.7
5.5	34.3	14.0	41.6
6.0	34.3	14.5	44.2
6.5	39.4	15.0	47.6
7.0	37.1	15.5	42.5
7.5	38.6	16.0	42.3
8.0	39.4	16.5	41.7
8.5	39.3	17.0	43.9
9.0	38.7	17.5	48.7
		18.0	52.4

COM-POWER AH826**HORN ANTENNA****S/N: 081006****CALIBRATION DATE: DECEMBER 22, 2003**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	32.2	22.5	32.0
18.5	31.6	23.0	31.9
19.0	31.5	23.5	32.7
19.5	31.7	24.0	32.8
20.0	31.7	24.5	32.6
20.5	32.0	25.0	32.5
21.0	32.2	25.5	32.4
21.5	32.0	26.0	32.8
22.0	31.9	26.5	32.5

COM-POWER AL-130**LOOP ANTENNA**

S/N: 17070

CALIBRATION DATE: JUNE 19, 2002

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-40.4	11.1
0.01	-40.3	11.2
0.02	-41.2	10.3
0.05	-41.6	9.9
0.07	-41.4	10.1
0.1	-41.7	9.8
0.2	-44.0	7.5
0.3	-41.6	9.9
0.5	-41.3	10.2
0.7	-41.4	10.1
1	-40.9	10.6
2	-40.6	10.9
3	-40.5	11.0
4	-40.8	10.7
5	-40.2	11.3
10	-40.7	10.8
15	-41.4	10.1
20	-41.6	9.9
25	-41.7	9.8
30	-42.9	8.6

APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 b Mode**Transmit Mode**

Gain : 29.0 (99%) Pk. Pwr.: 17.27 dBm (100%) Pk. Pwr.: 17.53 dBm Avg. Power: 14.86 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4824	46.04	V	74	-27.96	Peak	1	0	
4824	41.21	V	54	-12.79	Avg	1	0	
7236	42.03	V	74	-31.97	Peak	3	135	
7236	28.99	V	54	-25.01	Avg	3	135	
9648	58.7	V	--	--	Peak	2.25	270	Not in Restricted Band
9648	56.7	V	--	--	Avg	2.25	270	Not in Restricted Band
12060	48.94	V	74	-25.06	Peak	2.25	315	
12060	38.27	V	54	-15.73	Avg	2.25	315	
14472	48.21	V	74	-25.79	Peak	2.5	270	
14472	35.73	V	54	-18.27	Avg	2.5	270	
16884	48.59	V	--	--	Peak	1.5	270	Not in Restricted Band
16884	34.47	V	--	--	Avg	1.5	270	Not in Restricted Band
19296	45.04	V	74	-28.96	Peak	1.5	225	
19296	36.18	V	54	-17.82	Avg	1.5	225	
21708	46.13	V	--	--	Peak	1.5	180	Not in Restricted Band
21708	33.01	V	--	--	Avg	1.5	180	Not in Restricted Band
24120	54.97	V	--	--	Peak	1.25	180	Not in Restricted Band
24120	42.29	V	--	--	Avg	1.25	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 b Mode**Transmit Mode**

Gain : 29.0 (99%) Pk. Pwr.: 17.27 dBm (100%) Pk. Pwr.: 17.53 dBm Avg. Power: 14.86 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4824	41.97	H	74	-32.03	Peak	2.25	45	
4824	33.45	H	54	-20.55	Avg	2.25	45	
7236	42.7	H	74	-31.3	Peak	1.75	225	
7236	28.88	H	54	-25.12	Avg	1.75	225	
9648	54.5	H	--	--	Peak	1.75	270	Not in Restricted Band
9648	51.98	H	--	--	Avg	1.75	270	Not in Restricted Band
12060	47.73	H	74	-26.27	Peak	1.75	270	
12060	35.99	H	54	-18.01	Avg	1.75	270	
14472	48.13	H	74	-25.87	Peak	2	180	
14472	34.66	H	54	-19.34	Avg	2	180	
16884	47.17	H	--	--	Peak	3	225	Not in Restricted Band
16884	33.87	H	--	--	Avg	3	225	Not in Restricted Band
19296	43.84	H	74	-30.16	Peak	1.75	225	
19296	33.43	H	54	-20.57	Avg	1.75	225	
21708	46.35	H	--	--	Peak	1.5	180	Not in Restricted Band
21708	33.01	H	--	--	Avg	1.5	180	Not in Restricted Band
24120	55.56	H	--	--	Peak	1.25	180	Not in Restricted Band
24120	42.31	H	--	--	Avg	1.25	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 6 - 802.11 b Mode**Transmit Mode**

Gain : 29.5 (99%) Pk. Pwr.: 17.21 dBm (100%) Pk. Pwr.: 17.47 dBm Avg. Power: 14.82 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4874	54.44	V	74	-19.56	Peak	1	0	
4874	51.66	V	54	-2.34	Avg	1	0	
7311	42.53	V	74	-31.47	Peak	2	45	
7311	28.6	V	54	-25.4	Avg	2	45	
9748	57.91	V	--	--	Peak	1.75	225	Not in Restricted Band
9748	55.47	V	--	--	Avg	1.75	225	Not in Restricted Band
12185	47.31	V	74	-26.69	Peak	2	270	
12185	36.13	V	54	-17.87	Avg	2	270	
14622	48.08	V	--	--	Peak	2	180	Not in Restricted Band
14622	35.03	V	--	--	Avg	2	180	Not in Restricted Band
17059	50.59	V	--	--	Peak	1.75	225	Not in Restricted Band
17059	36.76	V	--	--	Avg	1.75	225	Not in Restricted Band
19496	43.52	V	74	-30.48	Peak	2	225	
19496	32.49	V	54	-21.51	Avg	2	225	
21933	45.28	V	--	--	Peak	1.75	180	Not in Restricted Band
21933	32.3	V	--	--	Avg	1.75	180	Not in Restricted Band
24370	54.78	V	--	--	Peak	1.5	180	Not in Restricted Band
24370	41.67	V	--	--	Avg	1.5	180	Not in Restricted Band

FCC 15.247

Intel Corporation
 Intel Mini PCI Type 802.11BG Wireless LAN Adapter
 Model: WM3B2200BG
 Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 7/01/04
 Lab: X
 Tested By: Benigno Chavez

Channel 6 - 802.11 b Mode**Transmit Mode**

Gain : 29.5 (99%) Pk. Pwr.: 17.21 dBm (100%) Pk. Pwr.: 17.47 dBm Avg. Power: 14.82 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4874	48.6	H	74	-25.4	Peak	2.5	315	
4874	44.46	H	54	-9.54	Avg	2.5	315	
7311	43.1	H	74	-30.9	Peak	2.5	225	
7311	28.46	H	54	-25.54	Avg	2.5	225	
9748	53.63	H	--	--	Peak	2.5	270	Not in Restricted Band
9748	50.61	H	--	--	Avg	2.5	270	Not in Restricted Band
12185	46.41	H	74	-27.59	Peak	2.5	270	
12185	35.66	H	54	-18.34	Avg	2.5	270	
14622	50.25	H	--	--	Peak	2	270	Not in Restricted Band
14622	38.15	H	--	--	Avg	2	270	Not in Restricted Band
17059	48.53	H	--	--	Peak	1.75	225	Not in Restricted Band
17059	34.79	H	--	--	Avg	1.75	225	Not in Restricted Band
19496	45.17	H	74	-28.83	Peak	1.5	225	
19496	36.17	H	54	-17.83	Avg	1.5	225	
21933	45.9	H	--	--	Peak	1.5	180	Not in Restricted Band
21933	32.26	H	--	--	Avg	1.5	180	Not in Restricted Band
24370	55.22	H	--	--	Peak	1.25	180	Not in Restricted Band
24370	41.67	H	--	--	Avg	1.25	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 30.0 (99%) Pk. Pwr.: 17.42 dBm (100%) Pk. Pwr.: 17.66 dBm Avg. Power: 15.00 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4924	52.69	V	74	-21.31	Peak	2.75	315	
4924	49.41	V	54	-4.59	Avg	2.75	315	
7386	45.45	V	74	-28.55	Peak	3	45	
7386	32.25	V	54	-21.75	Avg	3	45	
9848	58.54	V	--	--	Peak	1.75	270	Not in Restricted Band
9848	56.37	V	--	--	Avg	1.75	270	Not in Restricted Band
12310	49.53	V	74	-24.47	Peak	2.75	225	
12310	41.36	V	54	-12.64	Avg	2.75	225	
14772	50.49	V	--	--	Peak	2.25	225	Not in Restricted Band
14772	39.65	V	--	--	Avg	2.25	225	Not in Restricted Band
17234	50.87	V	--	--	Peak	2	180	Not in Restricted Band
17234	37.41	V	--	--	Avg	2	180	Not in Restricted Band
19696	44.38	V	74	-29.62	Peak	2.25	225	
19696	34.03	V	54	-19.97	Avg	2.25	225	
22158	55.37	V	74	-18.63	Peak	1.75	225	
22158	41.84	V	54	-12.16	Avg	1.75	225	
24620	54.89	V	--	--	Peak	1.25	180	Not in Restricted Band
24620	41.83	V	--	--	Avg	1.25	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 30.0 (99%) Pk. Pwr.: 17.42 dBm (100%) Pk. Pwr.: 17.66 dBm Avg. Power: 15.00 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4924	47.2	H	74	-26.8	Peak	2	180	
4924	42.58	H	54	-11.42	Avg	2	180	
7386	44.38	H	74	-29.62	Peak	2.25	180	
7386	30.41	H	54	-23.59	Avg	2.25	180	
9848	57.34	H	--	--	Peak	2.5	0	Not in Restricted Band
9848	54.91	H	--	--	Avg	2.5	0	Not in Restricted Band
12310	49.13	H	74	-24.87	Peak	2.25	315	
12310	39.68	H	54	-14.32	Avg	2.25	315	
14772	49.71	H	--	--	Peak	2.75	180	Not in Restricted Band
14772	36.53	H	--	--	Avg	2.75	180	Not in Restricted Band
17234	50.79	H	--	--	Peak	2.5	180	Not in Restricted Band
17234	37.27	H	--	--	Avg	2.5	180	Not in Restricted Band
19696	45.15	H	74	-28.85	Peak	1.75	180	
19696	31.05	H	54	-22.95	Avg	1.75	180	
22158	55.03	H	74	-18.97	Peak	1.75	180	
22158	41.83	H	54	-12.17	Avg	1.75	180	
24620	54.93	H	--	--	Peak	1.5	180	Not in Restricted Band
24620	41.83	H	--	--	Avg	1.5	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 g Mode**Transmit Mode**

Gain : 19.0 (99%) Pk. Pwr.: 11.83 dBm (100%) Pk. Pwr.: 16.36 dBm Avg. Power: 5.50 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4824	40.74	V	74	-33.26	Peak	1.5	225	
4824	26.96	V	54	-27.04	Avg	1.5	225	
7236	42.19	V	74	-31.81	Peak	1.75	180	
7236	28.38	V	54	-25.62	Avg	1.75	180	
9648	47.37	V	--	--	Peak	2.25	315	Not in Restricted Band
9648	40.36	V	--	--	Avg	2.25	315	Not in Restricted Band
12060	46.59	V	74	-27.41	Peak	2	225	
12060	32.95	V	54	-21.05	Avg	2	225	
14472	47.11	V	74	-26.89	Peak	1.5	180	
14472	34.44	V	54	-19.56	Avg	1.5	180	
16884	49.27	V	--	--	Peak	1.75	180	Not in Restricted Band
16884	35.45	V	--	--	Avg	1.75	180	Not in Restricted Band
19296	42.78	V	74	-31.22	Peak	1.5	180	
19296	29.46	V	54	-24.54	Avg	1.5	180	
21708	47.41	V	--	--	Peak	1.5	180	Not in Restricted Band
21708	32.95	V	--	--	Avg	1.5	180	Not in Restricted Band
24120	56.05	V	--	--	Peak	1.25	180	Not in Restricted Band
24120	42.29	V	--	--	Avg	1.25	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 g Mode**Transmit Mode**

Gain : 19.0 (99%) Pk. Pwr.: 11.83 dBm (100%) Pk. Pwr.: 16.36 dBm Avg. Power: 5.50 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4824	39.26	H	74	-34.74	Peak	1.75	180	
4824	25.77	H	54	-28.23	Avg	1.75	180	
7236	41.14	H	74	-32.86	Peak	1.5	225	
7236	28.48	H	54	-25.52	Avg	1.5	225	
9648	46.67	H	--	--	Peak	1.5	315	Not in Restricted Band
9648	40.45	H	--	--	Avg	1.5	315	Not in Restricted Band
12060	46.93	H	74	-27.07	Peak	1.75	180	
12060	32.96	H	54	-21.04	Avg	1.75	180	
14472	48.19	H	74	-25.81	Peak	1.75	225	
14472	33.69	H	54	-20.31	Avg	1.75	225	
16884	49.51	H	--	--	Peak	1.75	135	Not in Restricted Band
16884	35.49	H	--	--	Avg	1.75	135	Not in Restricted Band
19296	44.26	H	74	-29.74	Peak	1.75	180	
19296	29.43	H	54	-24.57	Avg	1.75	180	
21708	47.13	H	--	--	Peak	1.5	180	Not in Restricted Band
21708	32.98	H	--	--	Avg	1.5	180	Not in Restricted Band
24120	56.69	H	--	--	Peak	1.5	180	Not in Restricted Band
24120	42.31	H	--	--	Avg	1.5	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 6 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.90 dBm (100%) Pk. Pwr.: 16.50 dBm Avg. Power: 5.57 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4874	43.42	V	74	-30.58	Peak	2	225	
4874	29.17	V	54	-24.83	Avg	2	225	
7311	41.85	V	74	-32.15	Peak	1.75	180	
7311	28.641	V	54	-25.359	Avg	1.75	180	
9748	48.15	V	--	--	Peak	1.5	270	Not in Restricted Band
9748	44.52	V	--	--	Avg	1.5	270	Not in Restricted Band
12185	44.72	V	74	-29.28	Peak	1.5	180	
12185	31.38	V	54	-22.62	Avg	1.5	180	
14622	49.91	V	--	--	Peak	1.5	135	Not in Restricted Band
14622	36.58	V	--	--	Avg	1.5	135	Not in Restricted Band
17059	49.7	V	--	--	Peak	1.75	180	Not in Restricted Band
17059	36.04	V	--	--	Avg	1.75	180	Not in Restricted Band
19496	42.83	V	74	-31.17	Peak	1.75	180	
19496	29.46	V	54	-24.54	Avg	1.75	180	
21933	45.63	V	--	--	Peak	1.5	225	Not in Restricted Band
21933	32.28	V	--	--	Avg	1.5	225	Not in Restricted Band
24370	55.95	V	--	--	Peak	1.75	225	Not in Restricted Band
24370	41.67	V	--	--	Avg	1.75	225	Not in Restricted Band

FCC 15.247

Intel Corporation
 Intel Mini PCI Type 802.11BG Wireless LAN Adapter
 Model: WM3A2200BG
 Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 7/01/04
 Lab: X
 Tested By: Benigno Chavez

Channel 6 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.90 dBm (100%) Pk. Pwr.: 16.50 dBm Avg. Power: 5.57 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4874	40.8	H	74	-33.2	Peak	2	180	
4874	26.99	H	54	-27.01	Avg	2	180	
7311	42.33	H	74	-31.67	Peak	1.5	270	
7311	28.59	H	54	-25.41	Avg	1.5	270	
9748	48.21	H	--	--	Peak	2	270	Not in Restricted Band
9748	43.14	H	--	--	Avg	2	270	Not in Restricted Band
12185	44.93	H	74	-29.07	Peak	1.5	225	
12185	31.43	H	54	-22.57	Avg	1.5	225	
14622	50.39	H	--	--	Peak	1.75	225	Not in Restricted Band
14622	36.46	H	--	--	Avg	1.75	225	Not in Restricted Band
17059	49.54	H	--	--	Peak	1.75	180	Not in Restricted Band
17059	36.03	H	--	--	Avg	1.75	180	Not in Restricted Band
19496	43.27	H	74	-30.73	Peak	1.5	225	
19496	29.45	H	54	-24.55	Avg	1.5	225	
21933	46.25	H	--	--	Peak	1.25	180	Not in Restricted Band
21933	32.26	H	--	--	Avg	1.25	180	Not in Restricted Band
24370	55.48	H	--	--	Peak	1.5	180	Not in Restricted Band
24370	41.69	H	--	--	Avg	1.5	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 11 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.60 dBm (100%) Pk. Pwr.: 16.28 dBm Avg. Power: 5.26 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4924	40.15	V	74	-33.85	Peak	1.75	225	
4924	26.29	V	54	-27.71	Avg	1.75	225	
7386	43.59	V	74	-30.41	Peak	1.5	180	
7386	30.06	V	54	-23.94	Avg	1.5	180	
9848	50.92	V	--	--	Peak	1.5	225	Not in Restricted Band
9848	48.42	V	--	--	Avg	1.5	225	Not in Restricted Band
12310	44.95	V	74	-29.05	Peak	2	225	
12310	31.32	V	54	-22.68	Avg	2	225	
14772	51.61	V	--	--	Peak	1.75	225	Not in Restricted Band
14772	38.22	V	--	--	Avg	1.75	225	Not in Restricted Band
17234	50.95	V	--	--	Peak	1.5	225	Not in Restricted Band
17234	38.02	V	--	--	Avg	1.5	225	Not in Restricted Band
19696	43.6	V	74	-30.4	Peak	1.75	225	
19696	30.63	V	54	-23.37	Avg	1.75	225	
22158	55.09	V	74	-18.91	Peak	1.5	225	
22158	41.85	V	54	-12.15	Avg	1.5	225	
24620	55.68	V	--	--	Peak	1.5	180	Not in Restricted Band
24620	41.84	V	--	--	Avg	1.5	180	Not in Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 11 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.60 dBm (100%) Pk. Pwr.: 16.28 dBm Avg. Power: 5.26 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
4924	40.44	H	74	-33.56	Peak	1.75	225	
4924		H	54	-54	Avg	1.75	225	
7386	43.57	H	74	-30.43	Peak	1.5	180	
7386	30.24	H	54	-23.76	Avg	1.5	180	
9848	51.1	H	--	--	Peak	2.25	315	Not in Restricted Band
9848	48.31	H	--	--	Avg	2.25	315	Not in Restricted Band
12310	44.98	H	74	-29.02	Peak	2	180	
12310	31.5	H	54	-22.5	Avg	2	180	
14772	52.2	H	--	--	Peak	1.75	180	Not in Restricted Band
14772	38.34	H	--	--	Avg	1.75	180	Not in Restricted Band
17234	51.56	H	--	--	Peak	1.75	180	Not in Restricted Band
17234	37.99	H	--	--	Avg	1.75	180	Not in Restricted Band
19696	43.22	H	74	-30.78	Peak	1.75	180	
19696	30.04	H	54	-23.96	Avg	1.75	180	
22158	55.17	H	74	-18.83	Peak	1.5	180	
22158	41.83	H	54	-12.17	Avg	1.5	180	
24620	55.71	H	--	--	Peak	1.5	180	Not in Restricted Band
24620	41.62	H	--	--	Avg	1.5	180	Not in Restricted Band

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Intel Corporation

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Model: WM3B2200BG

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 7/01/04

Lab: X

Tested By: Benigno Chavez

Channel 1 - 802.11 b Mode**Transmit Mode**

Gain : 29.0 (99%) Pk. Pwr.: 17.27 dBm (100%) Pk. Pwr.: 17.53 dBm Avg. Power: 14.86 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3216	48.65	V	74	-25.35	Peak	1.63	0	Fundamental of LO for
3216	46.24	V	54	-7.76	Avg	1.63	0	Channel 1
6432	43.43	V	--	--	Peak	2	180	2nd Harmonic of LO for
6432	29.69	V	--	--	Avg	2	180	Channel 1
9648	58.7	V	--	--	Peak	2.25	270	3rd Harmonic of LO for
9648	56.7	V	--	--	Avg	2.25	270	Channel 1
12864	45.66	V	--	--	Peak	1.75	180	4th Harmonic of LO for
12864	31.81	V	--	--	Avg	1.75	180	Channel 1
3216	47.39	H	74	-26.61	Peak	2.25	315	Fundamental of LO for
3216	44.89	H	54	-9.11	Avg	2.25	315	Channel 1
6432	43.49	H	--	--	Peak	2.25	270	2nd Harmonic of LO for
6432	29.76	H	--	--	Avg	2.25	270	Channel 1
9648	54.5	H	--	--	Peak	1.75	270	3rd Harmonic of LO for
9648	51.98	H	--	--	Avg	1.75	270	Channel 1
12864	45.99	H	--	--	Peak	1.75	225	4th Harmonic of LO for
12864	31.75	H	--	--	Avg	1.75	225	Channel 1
								Only the Fundamental of the LO
								is in the Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 6 - 802.11 b Mode**Transmit Mode**

Gain : 29.5 (99%) Pk. Pwr.: 17.21 dBm (100%) Pk. Pwr.: 17.47 dBm Avg. Power: 14.82 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3249.33	49.52	V	74	-24.48	Peak	3.39	180	Fundamental of LO for
3249.33	47.98	V	54	-6.02	Avg	3.39	180	Channel 6
6498.67	43.43	V	--	--	Peak	2	225	2nd Harmonic of LO for
6498.67	29.56	V	--	--	Avg	2	225	Channel 6
9748	57.91	V	--	--	Peak	1.75	225	3rd Harmonic of LO for
9748	55.47	V	--	--	Avg	1.75	225	Channel 6
12997.3	43.55	V	--	--	Peak	1.5	180	4th Harmonic of LO for
12997.3	30.05	V	--	--	Avg	1.5	180	Channel 6
3249.33	49.82	H	74	-24.18	Peak	1.75	225	Fundamental of LO for
3249.33	47.96	H	54	-6.04	Avg	1.75	225	Channel 6
6498.67	43.55	H	--	--	Peak	2	225	2nd Harmonic of LO for
6498.67	29.76	H	--	--	Avg	2	225	Channel 6
9748	53.63	H	--	--	Peak	2.5	270	3rd Harmonic of LO for
9748	50.61	H	--	--	Avg	2.5	270	Channel 6
12997.3	44.08	H	--	--	Peak	1.75	180	4th Harmonic of LO for
12997.3	30.08	H	--	--	Avg	1.75	180	of Channel 6
								Only the Fundamental of the LO
								is in the Restricted Band

FCC 15.247

Intel Corporation

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Model: WM3B2200BG

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 7/01/04

Lab: X

Tested By: Benigno Chavez

Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 30.0 (99%) Pk. Pwr.: 17.42 dBm (100%) Pk. Pwr.: 17.66 dBm Avg. Power: 15.00 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3282.67	51.25	V	74	-22.75	Peak	1.8	135	Fundamental of LO for
3282.67	50.67	V	54	-3.33	Avg	1.8	135	Channel 11
6565.33	45.15	V	--	--	Peak	2	180	2nd Harmonic of LO for
6565.33	31.47	V	--	--	Avg	2	180	Channel 11
9848	58.54	V	--	--	Peak	1.75	270	3rd Harmonic of LO for
9848	56.37	V	--	--	Avg	1.75	270	Channel 11
13130.7	44.46	V	--	--	Peak	3	225	4th Harmonic of LO for
13130.7	32.25	V	--	--	Avg	3	225	of Channel 11
3282.67	49.86	H	74	-24.14	Peak	1.75	225	Fundamental of LO for
3282.67	48.04	H	54	-5.96	Avg	1.75	225	Channel 11
6565.33	46.45	H	--	--	Peak	2	180	2nd Harmonic of LO for
6565.33	31.34	H	--	--	Avg	2	180	Channel 11
9848	57.34	H	--	--	Peak	2.5	0	3rd Harmonic of LO for
9848	54.91	H	--	--	Avg	2.5	0	Channel 11
13130.7	43.85	H	--	--	Peak	2	270	4th Harmonic of LO for
13130.7	31.89	H	--	--	Avg	2	270	of Channel 11
								Only the Fundamental of the LO
								is in the Restricted Band

FCC 15.247

Intel Corporation

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Model: WM3A2200BG

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 7/01/04

Lab: X

Tested By: Benigno Chavez

Channel 1 - 802.11 g Mode**Transmit Mode**

Gain : 19.0 (99%) Pk. Pwr.: 11.83 dBm (100%) Pk. Pwr.: 16.36 dBm Avg. Power: 5.50 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3216	53.37	V	74	-20.63	Peak	1.75	315	Fundamental of LO for
3216	52.39	V	54	-1.61	Avg	1.75	315	Channel 1
6432	43.83	V	--	--	Peak	1.75	180	2nd Harmonic of LO for
6432	30.23	V	--	--	Avg	1.75	180	Channel 1
9648	47.37	V	--	--	Peak	2.25	315	3rd Harmonic of LO for
9648	40.36	V	--	--	Avg	2.25	315	Channel 1
12864	45.45	V	--	--	Peak	2.25	225	4th Harmonic of LO for
12864	32.3	V	--	--	Avg	2.25	225	Channel 1
3216	49.35	H	74	-24.65	Peak	1.5	225	Fundamental of LO for
3216	47.53	H	54	-6.47	Avg	1.5	225	Channel 1
6432	43.61	H	--	--	Peak	2	180	2nd Harmonic of LO for
6432	30.26	H	--	--	Avg	2	180	Channel 1
9648	46.67	H	--	--	Peak	1.5	315	3rd Harmonic of LO for
9648	40.45	H	--	--	Avg	1.5	315	Channel 1
12864	46.93	H	--	--	Peak	1.75	270	4th Harmonic of LO for
12864	32.54	H	--	--	Avg	1.75	270	Channel 1
								Only the Fundamental of the LO
								is in the Restricted Band

FCC 15.247

Intel Corporation

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Model: WM3A2200BG

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 7/01/04

Lab: X

Tested By: Benigno Chavez

Channel 6 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.90 dBm (100%) Pk. Pwr.: 16.50 dBm Avg. Power: 5.57 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3249.33	54.73	V	74	-19.27	Peak	2.25	270	Fundamental of LO for
3249.33	53.68	V	54	-0.32	Avg	2.25	270	Channel 6
6498.67	44.19	V	--	--	Peak	2.25	180	2nd Harmonic of LO for
6498.67	30.15	V	--	--	Avg	2.25	180	Channel 6
9748	48.15	V	--	--	Peak	1.5	270	3rd Harmonic of LO for
9748	44.52	V	--	--	Avg	1.5	270	Channel 6
12997.3	44.53	V	--	--	Peak	2	225	4th Harmonic of LO for
12997.3	30.37	V	--	--	Avg	2	225	Channel 6
3249.33	49.1	H	74	-24.9	Peak	1	180	Fundamental of LO for
3249.33	47.56	H	54	-6.44	Avg	1	180	Channel 6
6498.67	43.98	H	--	--	Peak	1.75	270	2nd Harmonic of LO for
6498.67	30.12	H	--	--	Avg	1.75	270	Channel 6
9748	48.21	H	--	--	Peak	2	270	3rd Harmonic of LO for
9748	43.14	H	--	--	Avg	2	270	Channel 6
12997.3	44.49	H	--	--	Peak	1.75	180	4th Harmonic of LO for
12997.3	30.43	H	--	--	Avg	1.75	180	of Channel 6
								Only the Fundamental of the LO
								is in the Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 11 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.60 dBm (100%) Pk. Pwr.: 16.28 dBm Avg. Power: 5.26 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3282.67	54.87	V	74	-19.13	Peak	2	315	Fundamental of LO for
3282.67	53.93	V	54	-0.07	Avg	2	315	Channel 11
6565.33	45.27	V	--	--	Peak	1.75	225	2nd Harmonic of LO for
6565.33	31.56	V	--	--	Avg	1.75	225	Channel 11
9848	50.92	V	--	--	Peak	1.5	225	3rd Harmonic of LO for
9848	48.42	V	--	--	Avg	1.5	225	Channel 11
13130.7	43.91	V	--	--	Peak	1.75	270	4th Harmonic of LO for
13130.7	31.89	V	--	--	Avg	1.75	270	of Channel 11
3282.67	50.19	H	74	-23.81	Peak	2	225	Fundamental of LO for
3282.67	48.59	H	54	-5.41	Avg	2	225	Channel 11
6565.33	45.69	H	--	--	Peak	2.5	225	2nd Harmonic of LO for
6565.33	31.62	H	--	--	Avg	2.5	225	Channel 11
9848	51.1	H	--	--	Peak	2.25	315	3rd Harmonic of LO for
9848	48.31	H	--	--	Avg	2.25	315	Channel 11
13130.7	43.54	H	--	--	Peak	1.75	225	4th Harmonic of LO for
13130.7	30.11	H	--	--	Avg	1.75	225	of Channel 11
								Only the Fundamental of the LO
								is in the Restricted Band

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 b Mode**Transmit Mode**

Gain : 29.0 (99%) Pk. Pwr.: 17.27 dBm (100%) Pk. Pwr.: 17.53 dBm Avg. Power: 14.86 dBm

Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 29.5 (99%) Pk. Pwr.: 17.21 dBm (100%) Pk. Pwr.: 17.47 dBm Avg. Power: 14.82 dBm

Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 30.0 (99%) Pk. Pwr.: 17.42 dBm (100%) Pk. Pwr.: 17.66 dBm Avg. Power: 15.00 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2312	50.8	V	83.5	-32.7	Peak	2.21	180	103 MHz Below the Fundamental
2312	45.52	V	63.5	-17.98	Avg	2.21	180	of Channel 1
2512	43.73	V	83.5	-39.77	Peak	2.21	180	103 MHz Above the Fundamental
2512	30.92	V	63.5	-32.58	Avg	2.21	180	of Channel 1
2312	51.45	H	83.5	-32.05	Peak	1.58	225	103 MHz Below the Fundamental
2312	45.94	H	63.5	-17.56	Avg	1.58	225	of Channel 1
2512	43.44	H	83.5	-40.06	Peak	2.94	180	103 MHz Above the Fundamental
2512	29.77	H	63.5	-33.73	Avg	2.94	180	of Channel 1
2336	52.77	V	83.5	-30.73	Peak	2.23	180	103 MHz Below the Fundamental
2336	46.69	V	63.5	-16.81	Avg	2.23	180	of Channel 6
2538.7	53.66	V	83.5	-29.84	Peak	1.85	180	103 MHz Above the Fundamental
2538.7	46.97	V	63.5	-16.53	Avg	1.85	180	of Channel 6
2336	49.51	H	83.5	-33.99	Peak	2.48	270	103 MHz Below the Fundamental
2336	40.64	H	63.5	-22.86	Avg	2.48	270	of Channel 6
2538.7	41.47	H	83.5	-42.03	Peak	2.48	315	103 MHz Above the Fundamental
2538.7	28.9	H	63.5	-34.6	Avg	2.48	315	of Channel 6
2360	51.12	V	83.5	-32.38	Peak	2.2	180	103 MHz Below the Fundamental
2360	42.81	V	63.5	-20.69	Avg	2.2	180	of Channel 11
2565	44.39	V	83.5	-39.11	Peak	2.2	45	103 MHz Above the Fundamental
2565	29.94	V	63.5	-33.56	Avg	2.2	45	of Channel 11
2360	45.44	H	83.5	-38.06	Peak	2.76	45	103 MHz Below the Fundamental
2360	37.59	H	63.5	-25.91	Avg	2.76	45	of Channel 11
2564	41.54	H	83.5	-41.96	Peak	1.78	315	103 MHz Above the Fundamental
2564	29.47	H	63.5	-34.03	Peak	1.78	315	of Channel 11

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 g Mode**Transmit Mode**

Gain : 19.0 (99%) Pk. Pwr.: 11.83 dBm (100%) Pk. Pwr.: 16.36 dBm Avg. Power: 5.50 dBm

Channel 6 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.90 dBm (100%) Pk. Pwr.: 16.50 dBm Avg. Power: 5.57 dBm

Channel 11 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.60 dBm (100%) Pk. Pwr.: 16.28 dBm Avg. Power: 5.26 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2312	51.03	V	83.5	-32.47	Peak	1.78	180	103 MHz Below the Fundamental
2312	45.42	V	63.5	-18.08	Avg	1.78	180	of Channel 1
2512	44.08	V	83.5	-39.42	Peak	2.7	225	103 MHz Above the Fundamental
2512	31.02	V	63.5	-32.48	Avg	2.7	225	of Channel 1
2312	49.22	H	83.5	-34.28	Peak	1.96	180	103 MHz Below the Fundamental
2312	42.86	H	63.5	-20.64	Avg	1.96	180	of Channel 1
2512	43.85	H	83.5	-39.65	Peak	2.83	180	103 MHz Above the Fundamental
2512	29	H	63.5	-34.5	Avg	2.83	180	of Channel 1
2336	50.33	V	83.5	-33.17	Peak	2.73	180	103 MHz Below the Fundamental
2336	43.96	V	63.5	-19.54	Avg	2.73	180	of Channel 6
2538.7	44.4	V	83.5	-39.1	Peak	2.73	0	103 MHz Above the Fundamental
2538.7	31.78	V	63.5	-31.72	Avg	2.73	0	of Channel 6
2336	49.92	H	83.5	-33.58	Peak	2.2	270	103 MHz Below the Fundamental
2336	43.58	H	63.5	-19.92	Avg	2.2	270	of Channel 6
2538.7	43.57	H	83.5	-39.93	Peak	2.2	90	103 MHz Above the Fundamental
2538.7	29.4	H	63.5	-34.1	Avg	2.2	90	of Channel 6
2360	47.9	V	83.5	-35.6	Peak	2.76	180	103 MHz Below the Fundamental
2360	40.07	V	63.5	-23.43	Avg	2.76	180	of Channel 11
2565	40.57	V	83.5	-42.93	Peak	2.77	180	103 MHz Above the Fundamental
2565	29.87	V	63.5	-33.63	Avg	2.77	180	of Channel 11
2360	47.49	H	83.5	-36.01	Peak	2.18	270	103 MHz Below the Fundamental
2360	37.93	H	63.5	-25.57	Avg	2.18	270	of Channel 11
2564	44.01	H	83.5	-39.49	Peak	2.18	180	103 MHz Above the Fundamental
2564	29.02	H	63.5	-34.48	Peak	2.18	180	of Channel 11

FCC 15.247

Intel Corporation

Date: 06/02/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Kyle Fujimoto

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 6 - 802.11 b Mode**Receive Mode**

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3249.33	50.48	V	74	-23.52	Peak	1.8	180	Fundamental of LO for
3249.33	48.78	V	60	-11.22	Avg	1.8	180	Channel 6
6498.67	45.57	V	74	-28.43	Peak	1.22	270	2nd Harmonic of LO for
6498.67	30.43	V	60	-29.57	Avg	1.22	270	Channel 6
9748	42.49	V	74	-31.51	Peak	2	225	3rd Harmonic of LO for
9748	27.77	V	60	-32.23	Avg	2	225	Channel 6
3249.33	46.98	H	74	-27.02	Peak	2.32	180	Fundamental of LO for
3249.33	44.91	H	60	-15.09	Avg	2.32	180	Channel 6
6498.67	44.63	H	74	-29.37	Peak	1.61	270	2nd Harmonic of LO for
6498.67	29.62	H	60	-30.38	Avg	1.61	270	Channel 6
9748	40.28	H	74	-33.72	Peak	1.75	225	3rd Harmonic of LO for
9748	27.14	H	60	-32.86	Avg	1.75	225	Channel 6

FCC 15.247

Intel Corporation

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Model: WM3A2200BG

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 6/03/04

Lab: X

Tested By: Kyle Fujimoto

Channel 6 - 802.11 g Mode**Receive Mode**

Freq. (MHz)		Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
3249.33	50.61	V	74	-23.39	Peak	1.76	180	Fundamental of LO for
3249.33	48.86	V	60	-11.14	Avg	1.76	180	Channel 6
6498.67	45.03	V	74	-28.97	Peak	2.15	225	2nd Harmonic of LO for
6498.67	30.37	V	60	-29.63	Avg	2.15	225	Channel 6
9748	41.26	V	74	-32.74	Peak	1.68	270	3rd Harmonic of LO for
9748	29.43	V	60	-30.57	Avg	1.68	270	Channel 6
3249.33	46.81	H	74	-27.19	Peak	2.22	90	Fundamental of LO for
3249.33	44.43	H	60	-15.57	Avg	2.22	90	Channel 6
6498.67	43.72	H	74	-30.28	Peak	1.63	180	2nd Harmonic of LO for
6498.67	30.06	H	60	-29.94	Avg	1.63	180	Channel 6
9748	42.25	H	74	-31.75	Peak	2.2	270	3rd Harmonic of LO for
9748	27.32	H	60	-32.68	Avg	2.2	270	Channel 6

Test Location : Compatible Electronics **Page** : 1/1
Customer : Intel Corporation **Date** : 6/05/2004
Manufacturer : Intel Corporation **Time** : 8:30:00
Eut name : Mini PCI Type 802.11 BG Wireless LAN Adapter **Lab** : D
Model : WM3B2200BG **Test Distance** : 3.0 Meters
Serial # : N/A
Specification : FCC Class B
Distance correction factor (20 * log(test/spec)) : 0.00
Test Mode : Radiated Emissions - 10 kHz to 1000 MHz
Horizontal and Vertical Polarizations
In the HP Laptop Agency Series #: HSTNN-Q09C
Tested By: Kyle Fujimoto

Pol	Freq MHz	Rdng dBuV	Cable loss dB	Ant factor dB	Amp gain dB	Cor'd rdg = R dBuV	Limit = L dBuV/m	Delta R-L dB
1V	75.600	51.90	0.86	8.08	37.50	23.34	40.00	-16.66
2V	87.600	45.70	0.82	8.08	37.50	17.10	40.00	-22.90
3V	154.600	52.00	1.20	13.42	37.50	29.12	43.50	-14.38
4H	200.240	49.60	1.40	14.91	37.60	28.31	43.50	-15.19
5V	244.200	36.20	1.58	16.42	37.52	16.68	46.00	-29.32
6H	250.418	41.90	1.60	16.63	37.50	22.63	46.00	-23.37
7V	325.758	44.50	1.70	13.26	37.55	21.91	46.00	-24.09
8V	333.139	46.20	1.70	13.38	37.53	23.75	46.00	-22.25
9V	336.076	62.20	1.70	13.43	37.53	39.81	46.00	-6.19
10V	356.408	47.40	1.75	13.76	37.50	25.41	46.00	-20.59
11V	366.348	52.00	1.84	13.91	37.50	30.25	46.00	-15.75
12V	384.071	54.20	1.98	14.17	37.50	32.85	46.00	-13.15
13H	432.036	53.80	2.10	14.95	37.17	33.68	46.00	-12.32
14V	432.101	58.90	2.10	14.95	37.17	38.78	46.00	-7.22
15V	432.980	47.50	2.10	14.97	37.16	27.40	46.00	-18.60
16V	532.690	50.90	2.30	16.59	37.23	32.56	46.00	-13.44
17H	733.060	39.60	2.90	20.41	37.10	25.81	46.00	-20.19

FCC 15.247

Intel Corporation

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Model: WM3B2200BG

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Date: 6/05/04

Lab: X

Tested By: Kyle Fujimoto

Emissions from the Digital Portion

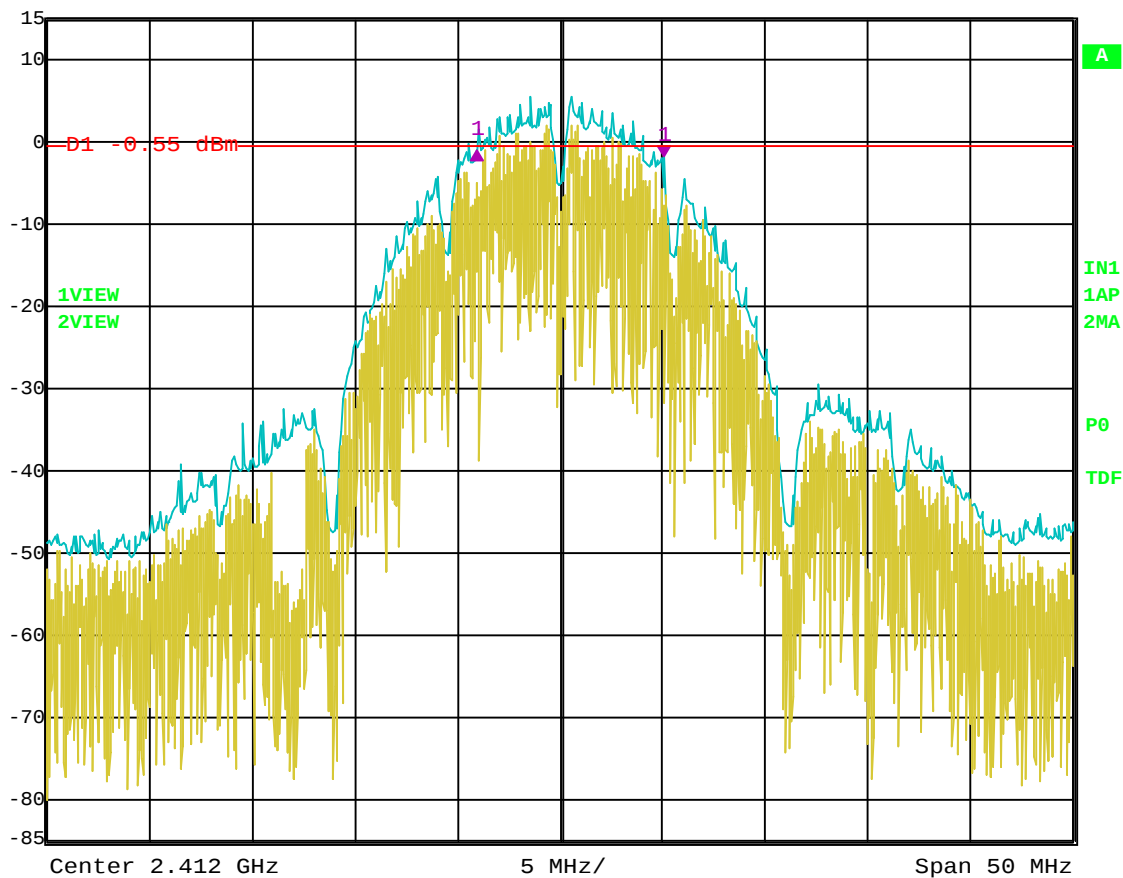
Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
1598.88	42.4	V	74	-31.6	Peak	1.5	315	
1598.88	29.01	V	60	-30.99	Avg	1.5	315	
1823.94	42.7	V	74	-31.3	Peak	2	315	
1823.94	29.3	V	60	-30.7	Avg	2	315	
1865.23	42.25	V	74	-31.75	Peak	2	270	
1865.23	29.28	V	60	-30.72	Avg	2	270	
2210.32	42.3	V	74	-31.7	Peak	2	45	
2210.32	29.31	V	60	-30.69	Avg	2	45	
1598.9	44.11	H	74	-29.89	Peak	2	270	
1598.9	30.52	H	60	-29.48	Avg	2	270	
1824.45	38.23	H	74	-35.77	Peak	2	225	
1824.45	23.25	H	60	-36.75	Avg	2	225	
2210.3	40.29	H	74	-33.71	Peak	2	225	
2210.3	33.8	H	60	-26.2	Avg	2	225	

-6 dB BANDWIDTH

DATA SHEETS



Ref Lvl 15 dBm
Delta 1 [T2] 0.84 dB
-9.11823647 MHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms Unit dBm

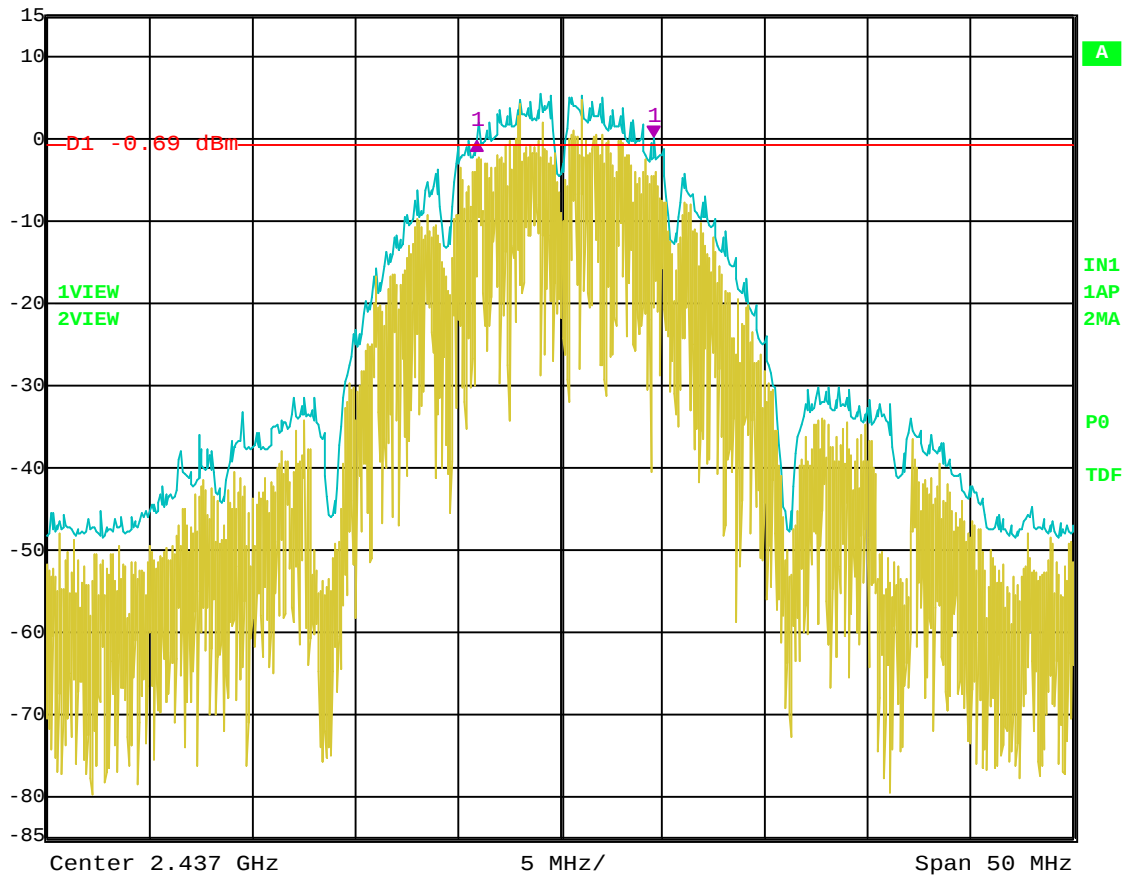


Date: 2.JUL.2004 06:28:01

6 dB Bandwidth – Channel 1 – 802.11 b Mode



Ref Lvl 15 dBm
Delta 1 [T2] -0.36 dB
-8.61723447 MHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms Unit dBm

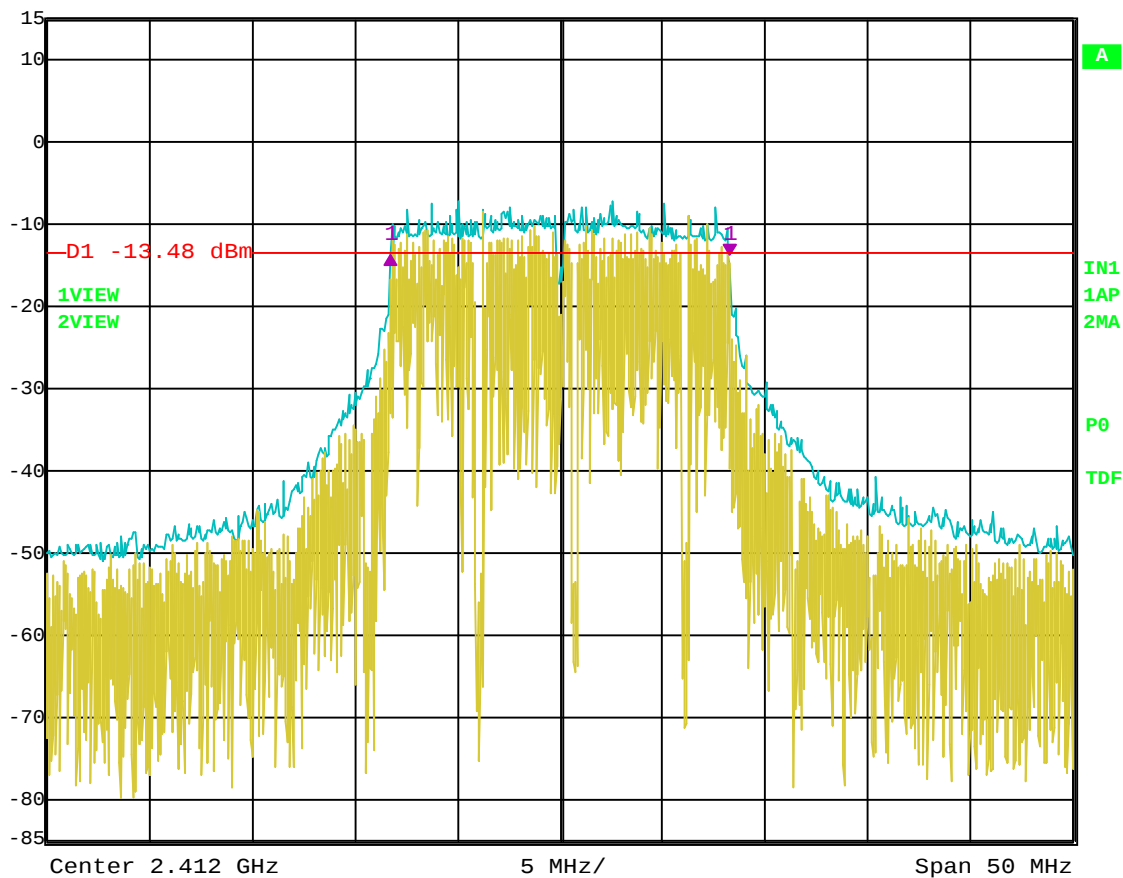


Date: 2.JUL.2004 06:30:59

6 dB Bandwidth – Channel 6 – 802.11 b Mode



Ref Lvl 15 dBm
Delta 1 [T2] -0.06 dB
-16.53306613 MHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms Unit dBm

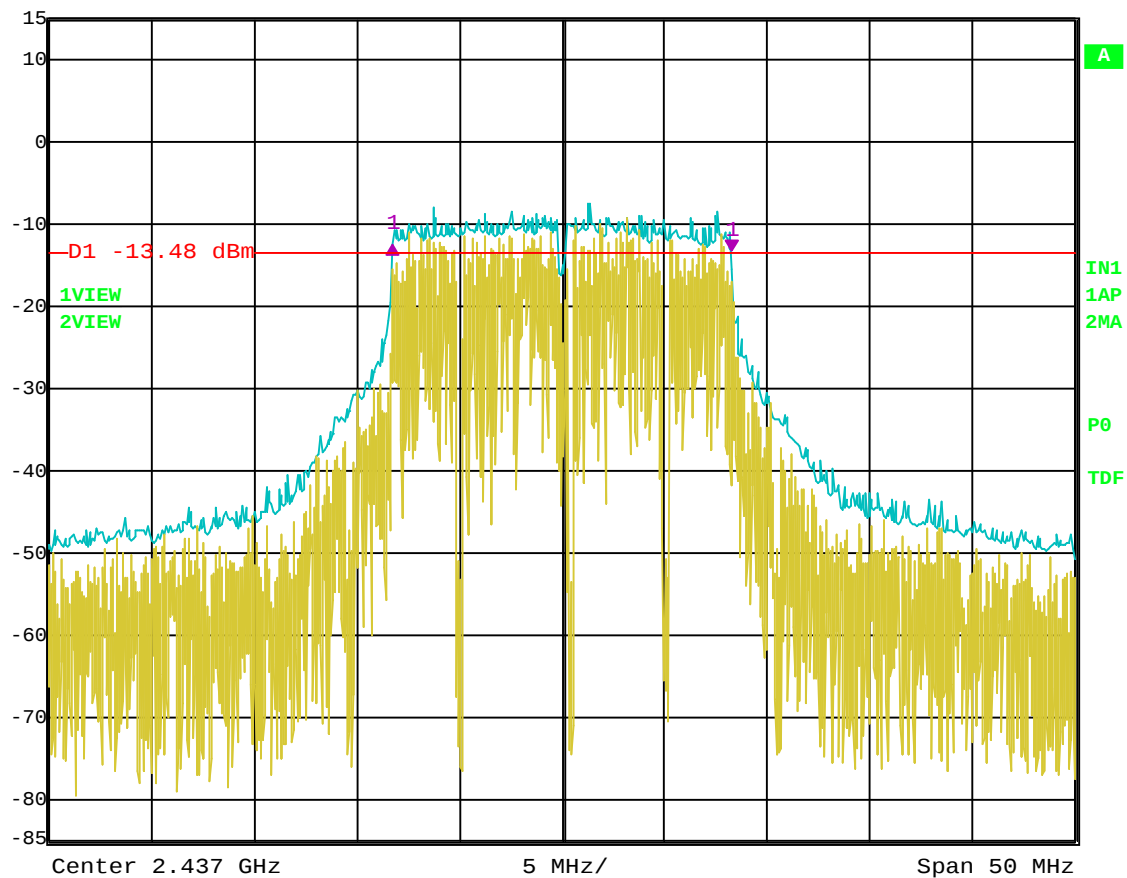


Date: 2.JUL.2004 06:42:30

6 dB Bandwidth – Channel 1 – 802.11 g Mode



Ref Lvl 15 dBm
Delta 1 [T2] 0.60 dB
-16.53306613 MHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms Unit dBm

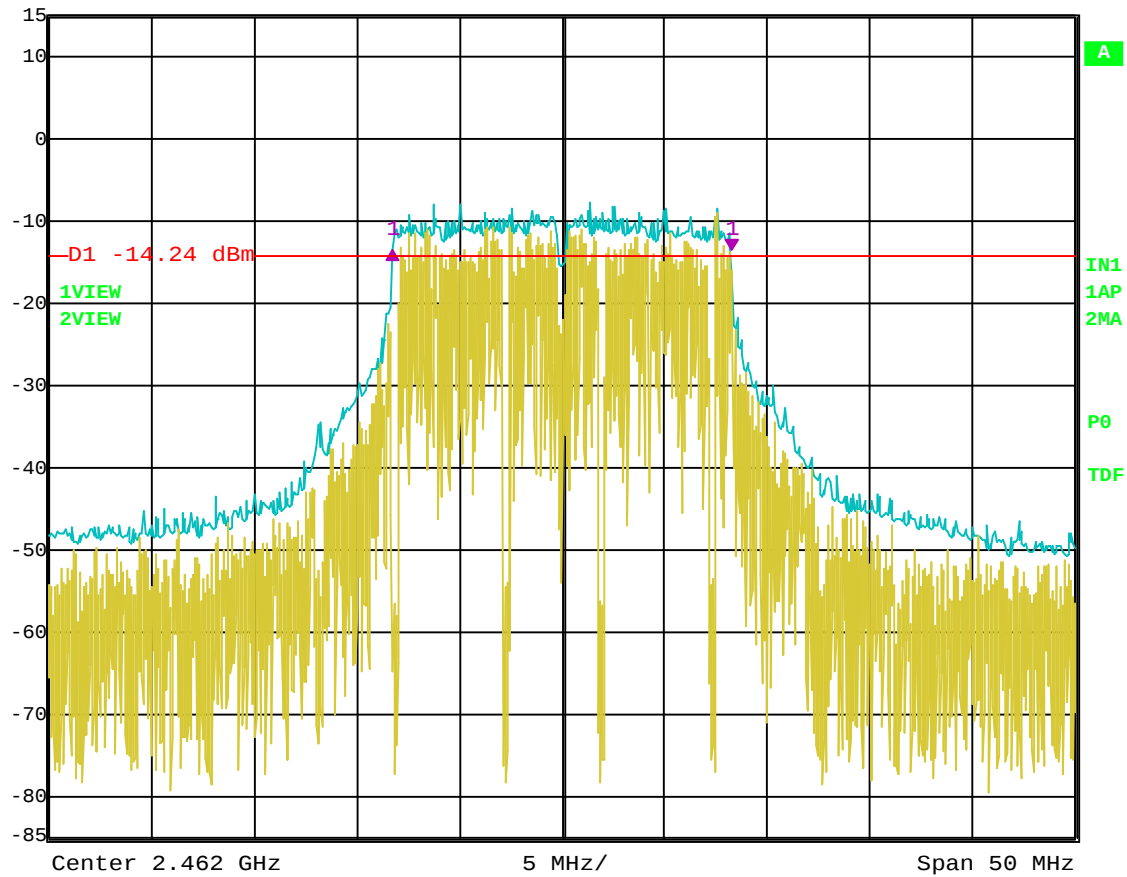


Date: 2.JUL.2004 06:43:33

6 dB Bandwidth – Channel 6 – 802.11 g Mode



Ref Lvl 15 dBm
Delta 1 [T2] 0.14 dB
-16.53306613 MHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms Unit dBm



Date: 2.JUL.2004 06:45:23

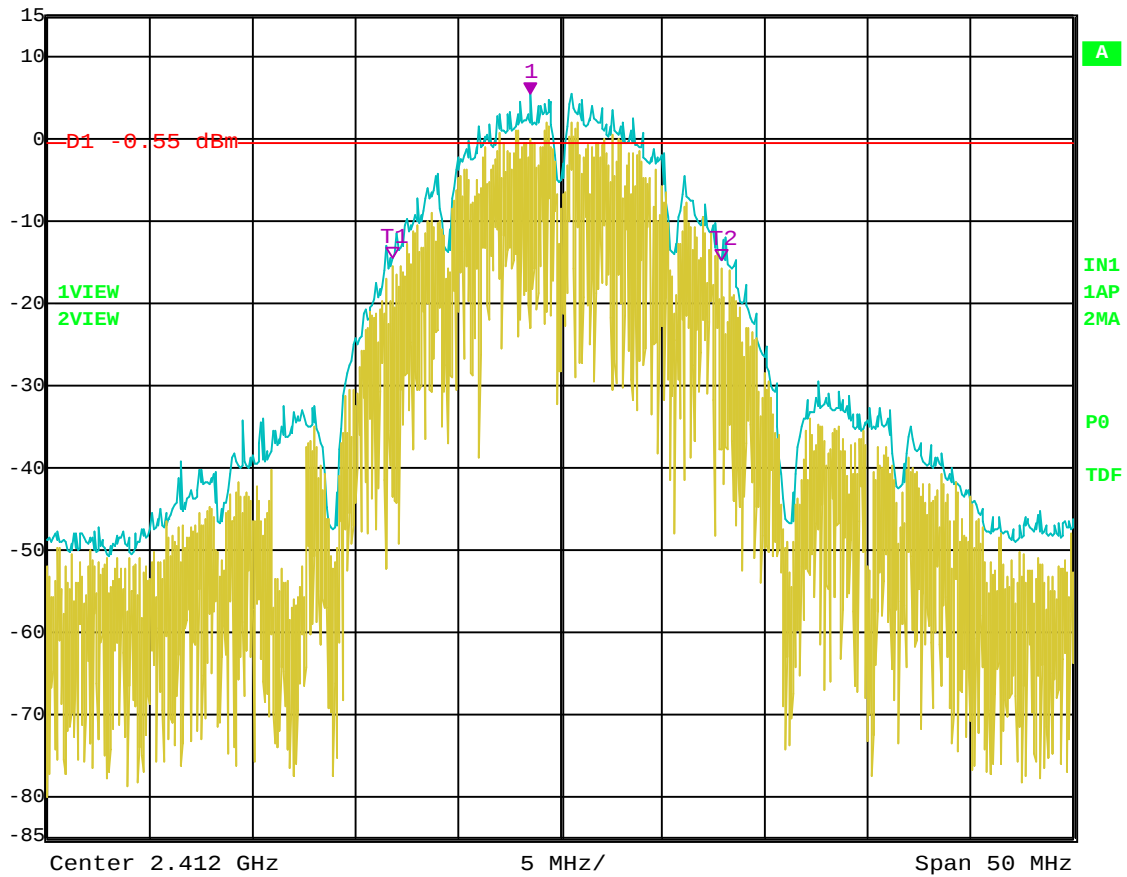
6 dB Bandwidth – Channel 11 – 802.11 g Mode

-20 dB BANDWIDTH

DATA SHEETS



Ref Lvl	Marker 1 [T2 ndB]	RBW	100 kHz	RF Att	40 dB
15 dBm	ndB 20.00 dB	VBW	300 kHz		
	BW 16.03206413 MHz	SWT	12.5 ms	Unit	dBm

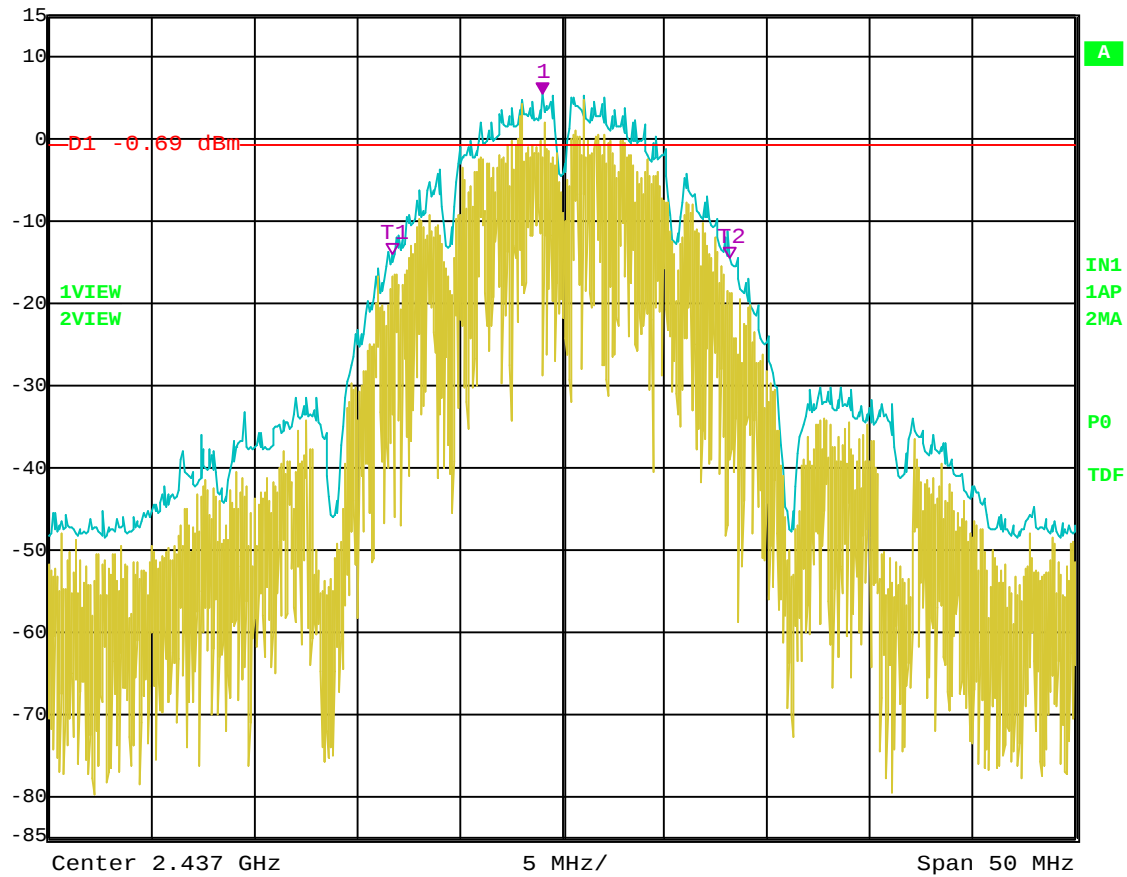


Date: 2.JUL.2004 06:29:11

20 dB Bandwidth – Channel 1 – 802.11 b Mode



Ref Lvl 15 dBm
Marker 1 [T2 ndB] 20.00 dB
BW 16.43286573 MHz
RBW 100 kHz
RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms
Unit dBm

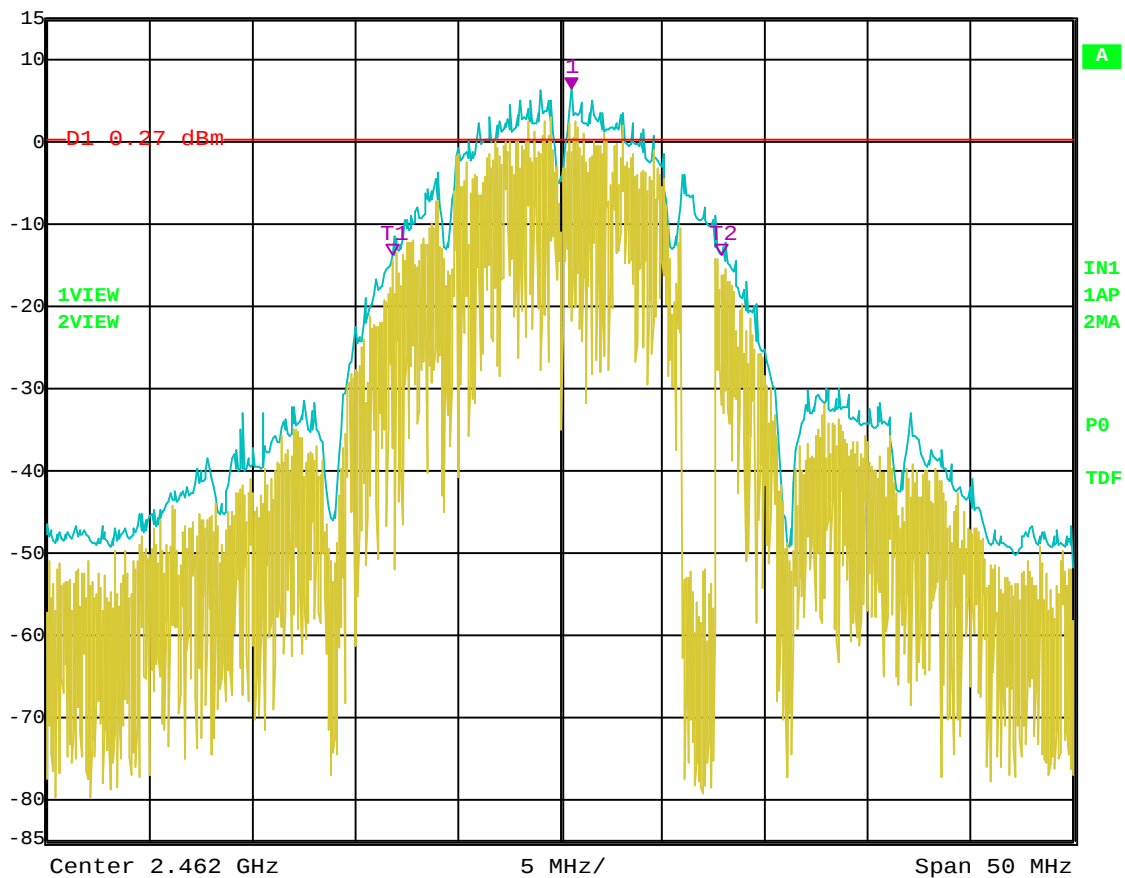


Date: 2.JUL.2004 06:31:40

20 dB Bandwidth – Channel 6 – 802.11 b Mode



Ref Lvl	Marker 1 [T2 ndB]	RBW	100 kHz	RF Att	40 dB
15 dBm	ndB 20.00 dB	VBW	300 kHz		
	BW 16.03206413 MHz	SWT	12.5 ms	Unit	dBm

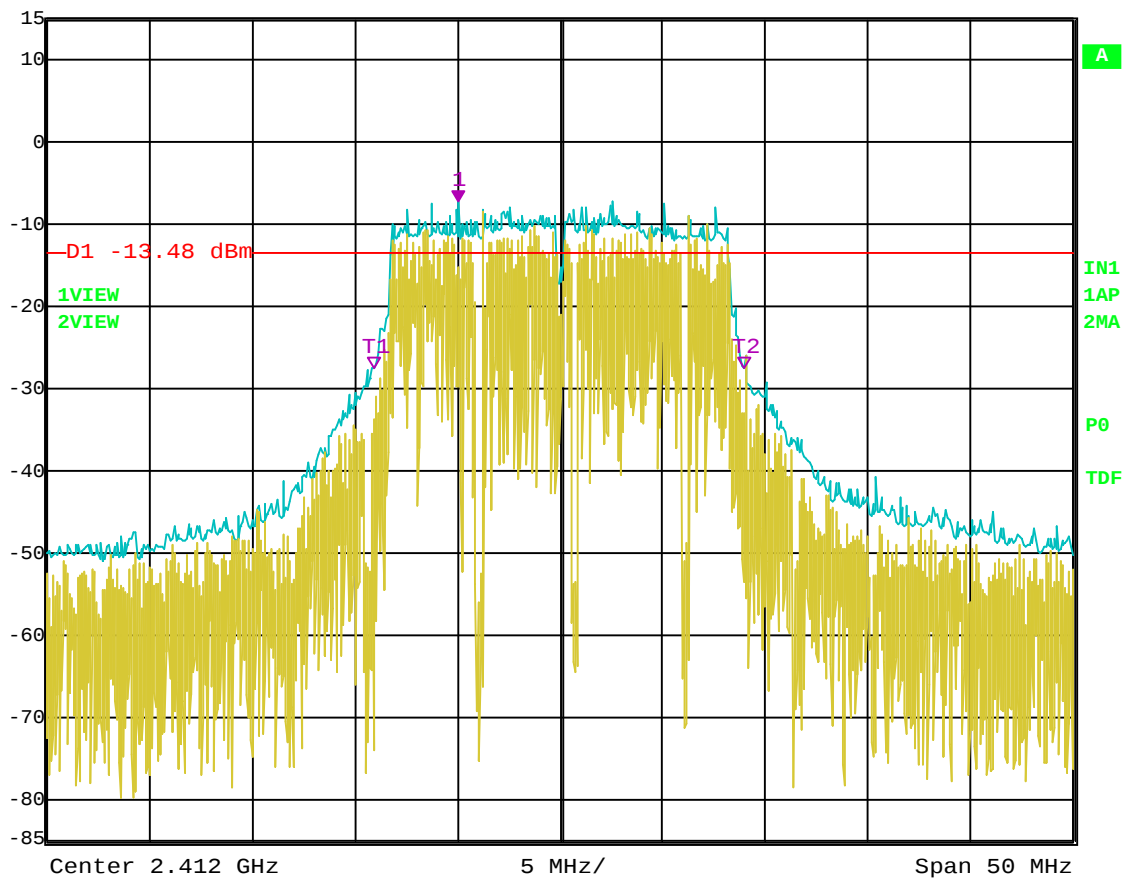


Date: 2.JUL.2004 06:38:11

20 dB Bandwidth – Channel 11 – 802.11 b Mode



Ref Lvl 15 dBm
Marker 1 [T2 ndB]
ndB 20.00 dB
BW 18.03607214 MHz
RBW 100 kHz
RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms
Unit dBm

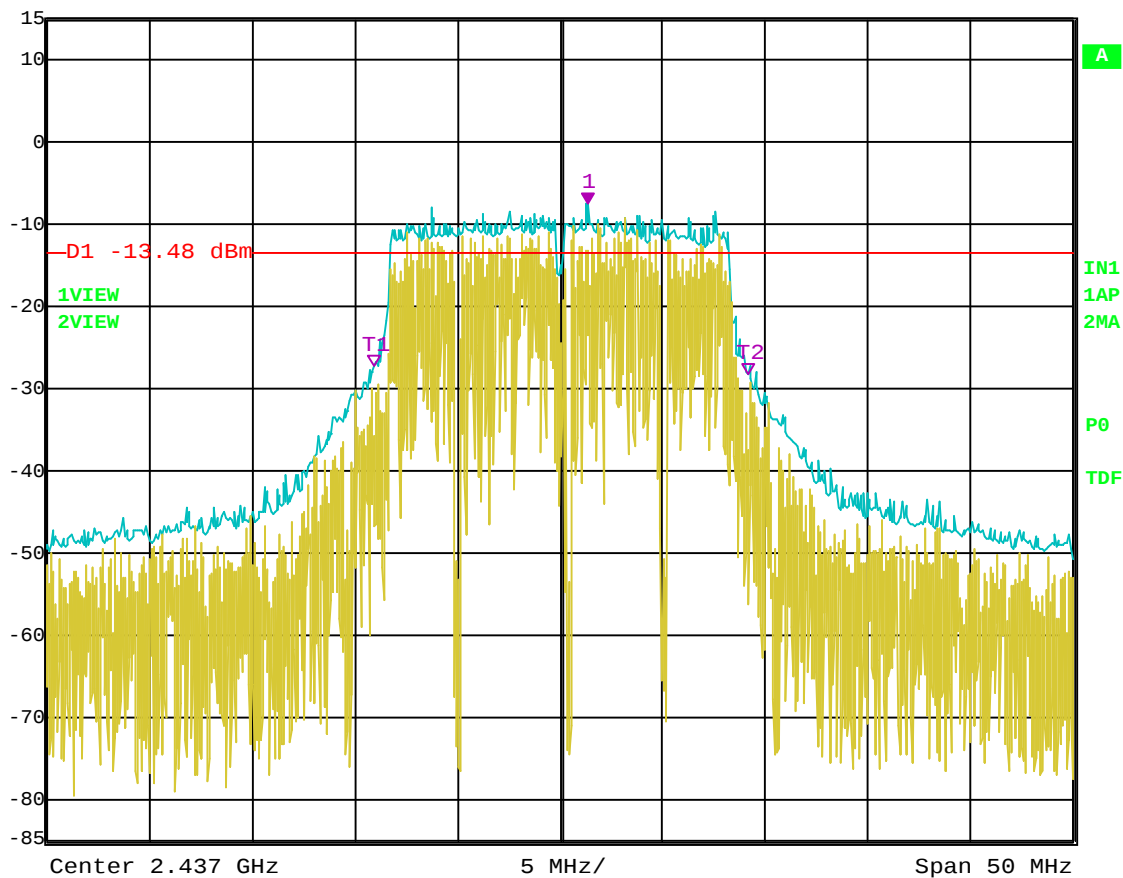


Date: 2.JUL.2004 06:41:50

20 dB Bandwidth – Channel 1 – 802.11 g Mode



Ref Lvl 15 dBm
Marker 1 [T2 ndB]
ndB 20.00 dB
BW 18.23647295 MHz
RBW 100 kHz
RF Att 40 dB
VBW 300 kHz
SWT 12.5 ms
Unit dBm

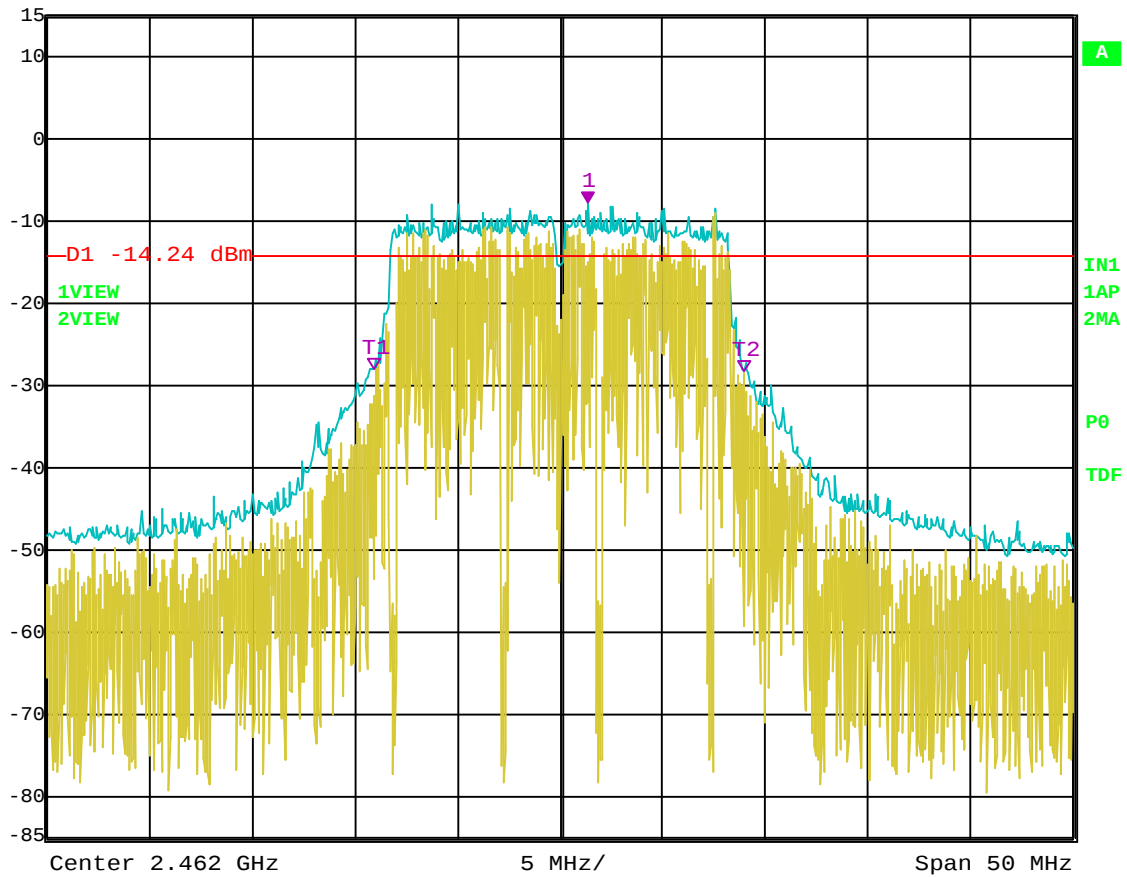


Date: 2.JUL.2004 06:44:02

20 dB Bandwidth – Channel 6 – 802.11 g Mode



Ref Lvl 15 dBm
Marker 1 [T2 ndB] 20.00 dB
BW 18.03607214 MHz
RBW 100 kHz
VBW 300 kHz
RF Att 40 dB
SWT 12.5 ms
Unit dBm



Date: 2.JUL.2004 06:46:02

20 dB Bandwidth – Channel 11 – 802.11 g Mode

PEAK POWER OUTPUT

DATA SHEETS

PEAK OUTPUT POWER

Intel Corporation

Intel Mini PCI Type 802.11 BG Wireless LAN Adapter

MODEL: WM3B2200BG

For use in the HP Agency Series# HSTNN-Q09C

802.11 b Mode (Worst Case Rate is 1 Mbps)

CHANNEL	GAIN	PEAK POWER OUTPUT (dBm)
1 (2412 MHz)	29.0	17.53
6 (2437 MHz)	29.5	17.47
11 (2462 MHz)	30.0	17.66

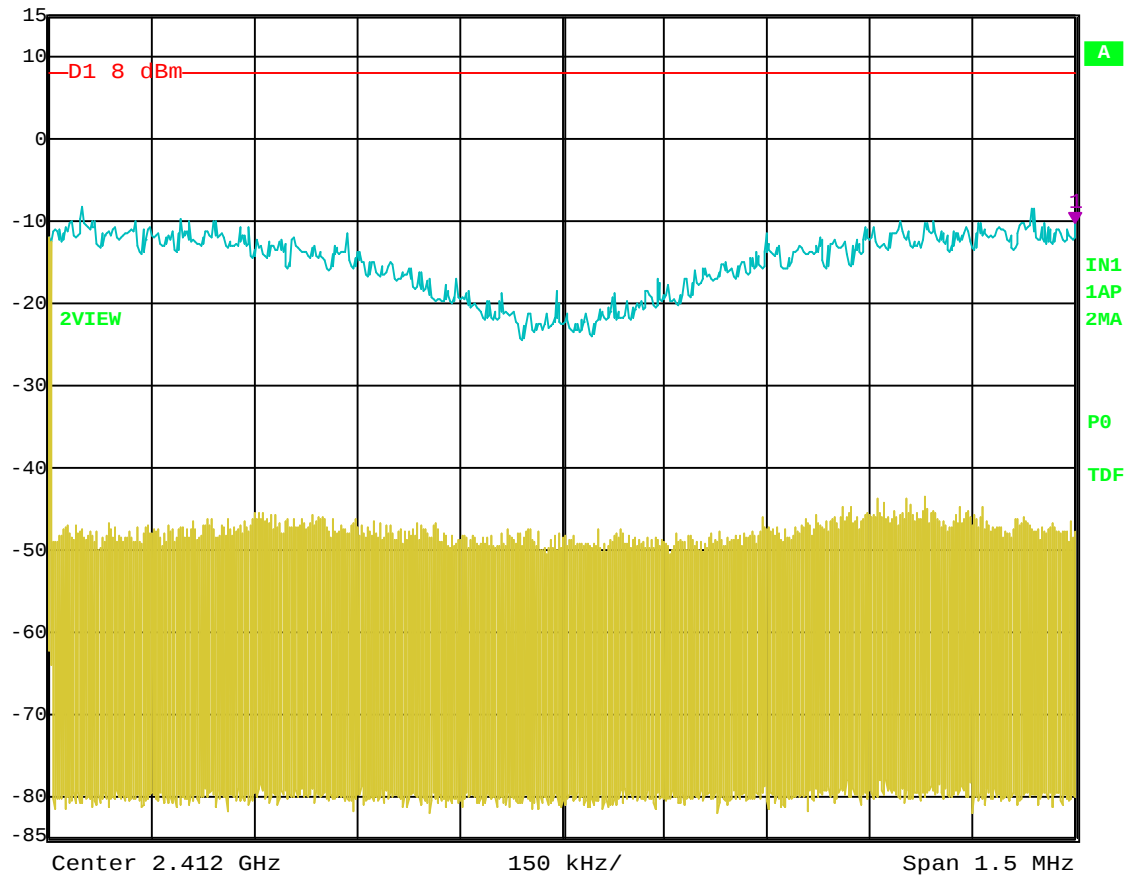
802.11 g Mode (Worst Case Rate is 6 Mbps)

CHANNEL	GAIN	PEAK POWER OUTPUT (dBm)
1 (2412 MHz)	19.5	16.81
6 (2437 MHz)	19.5	16.50
11 (2462 MHz)	19.5	16.28

PEAK POWER SPECTRAL DENSITY
DATA SHEETS



Ref Lvl 15 dBm
Marker 1 [T2] -10.48 dBm
2.41275000 GHz
RBW 3 kHz RF Att 40 dB
VBW 10 kHz
SWT 500 s Unit dBm

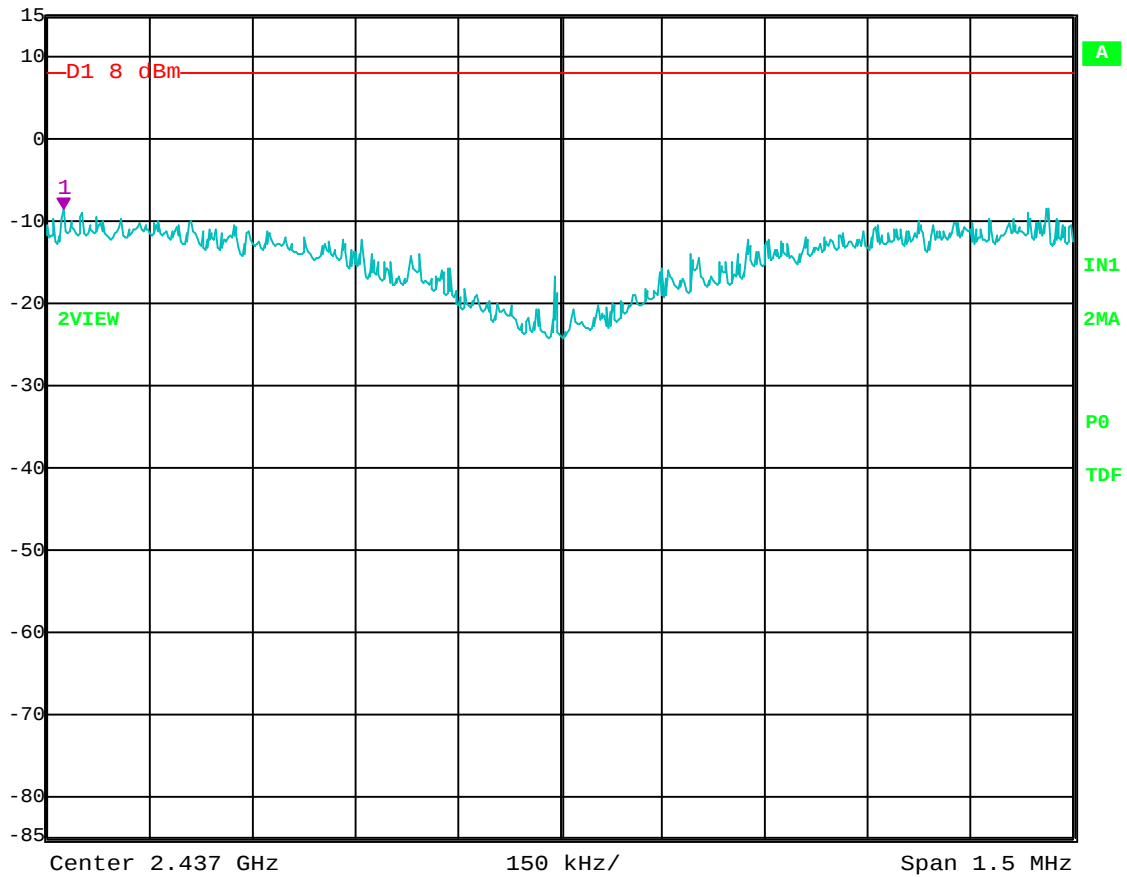


Date: 2.JUL.2004 07:36:29

Peak Power Spectral Density – Channel 1 – 802.11 b Mode



Ref Lvl 15 dBm
Marker 1 [T2] -8.55 dBm
2.43627405 GHz
RBW 3 kHz
RF Att 40 dB
VBW 10 kHz
SWT 500 s
Unit dBm

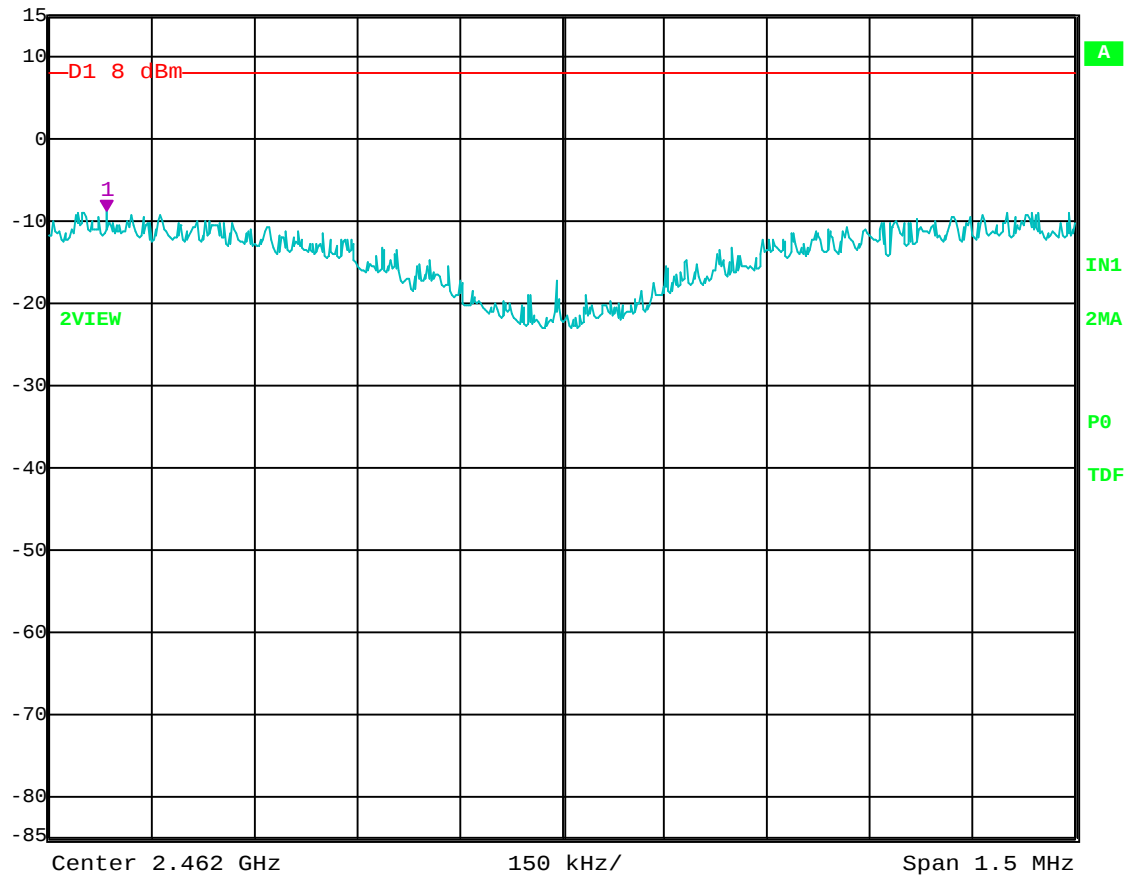


Date: 2.JUL.2004 07:52:22

Peak Power Spectral Density – Channel 6 – 802.11 b Mode



Ref Lvl 15 dBm
Marker 1 [T2] -8.95 dBm
2.46133417 GHz
RBW 3 kHz RF Att 40 dB
VBW 10 kHz
SWT 500 s Unit dBm

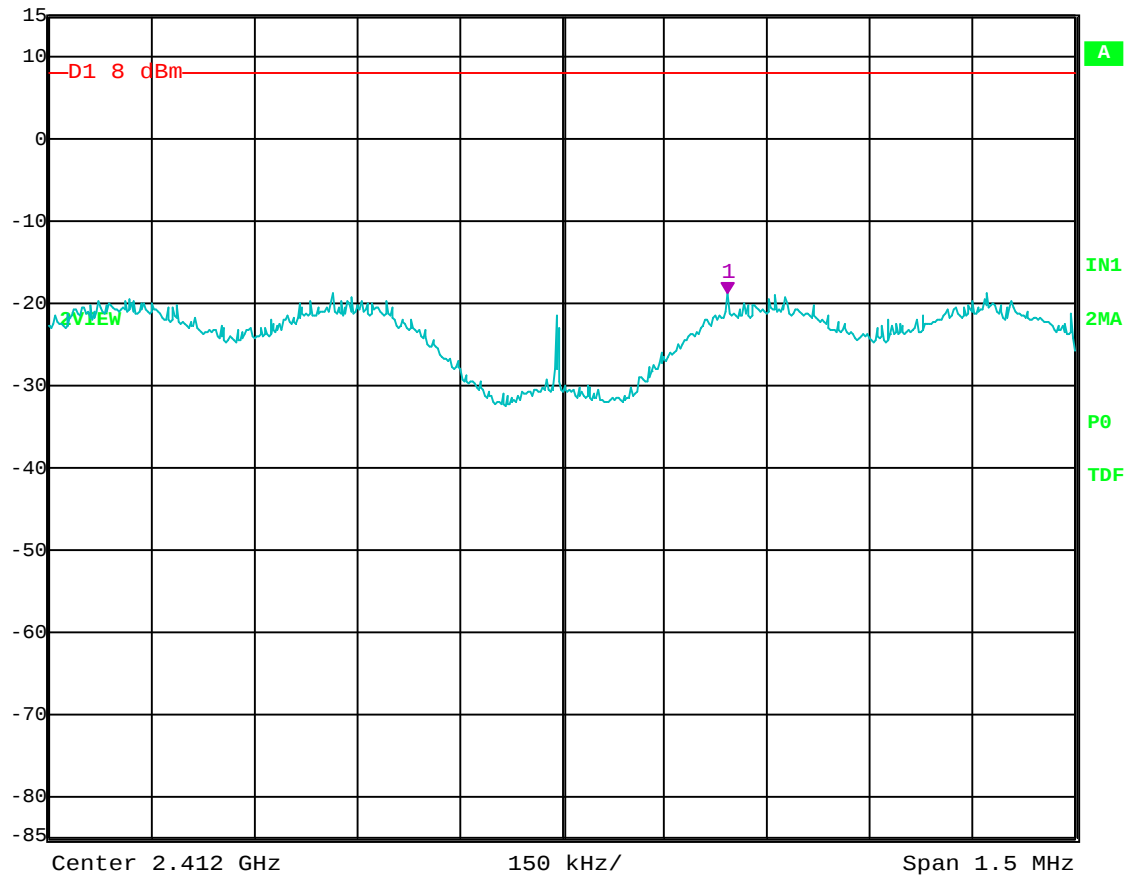


Date: 2.JUL.2004 08:07:50

Peak Power Spectral Density – Channel 11 – 802.11 b Mode



Ref Lvl 15 dBm
Marker 1 [T2] -18.81 dBm
2.41224198 GHz
RBW 3 kHz
VBW 1 MHz
RF Att 40 dB
SWT 500 s
Unit dBm

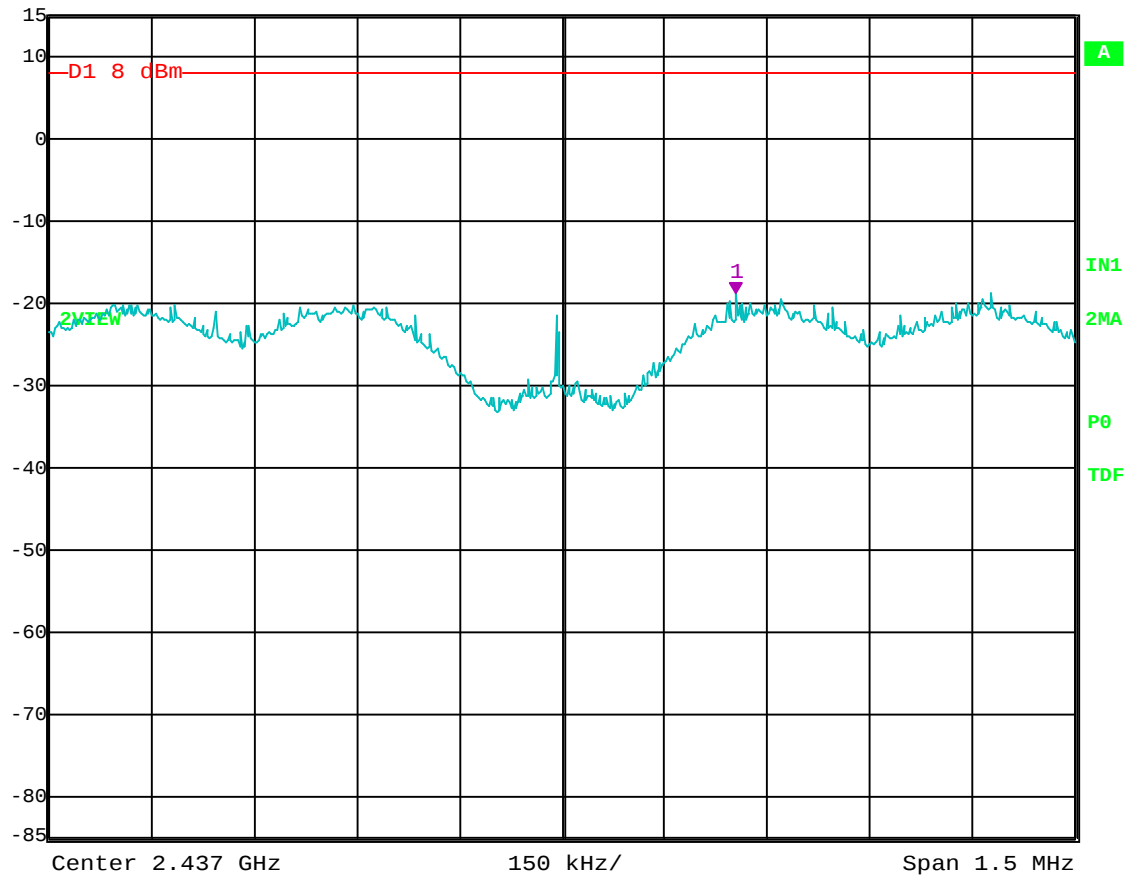


Date: 2.JUL.2004 08:26:44

Peak Power Spectral Density – Channel 1 – 802.11 g Mode



Ref Lvl	Marker 1 [T2]	RBW	3 kHz	RF Att	40 dB
15 dBm	-18.84 dBm	VBW	1 MHz		
	2.43725401 GHz	SWT	500 s	Unit	dBm

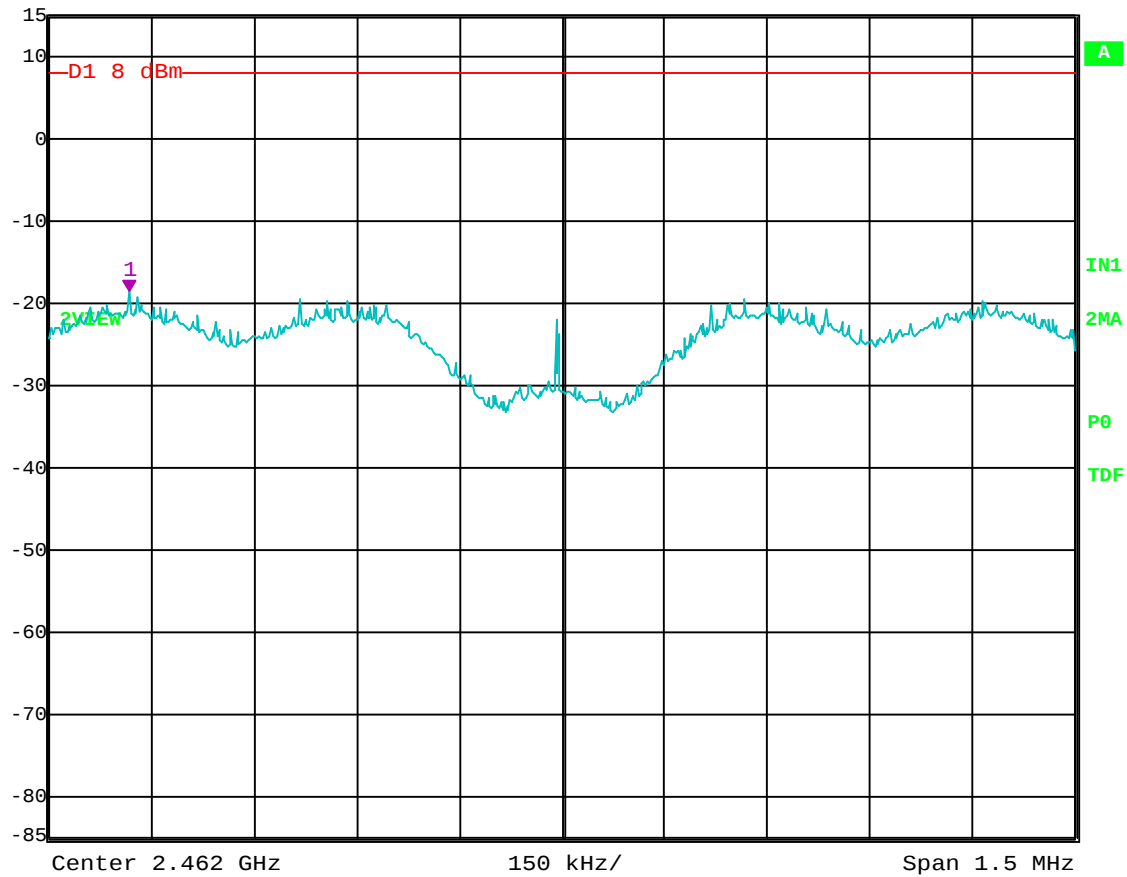


Date: 2.JUL.2004 08:35:55

Peak Power Spectral Density – Channel 6 – 802.11 g Mode



Ref Lvl 15 dBm
Marker 1 [T2] -18.65 dBm
2.46136723 GHz
RBW 3 kHz
RF Att 40 dB
VBW 1 MHz
SWT 500 s
Unit dBm



Date: 2.JUL.2004 08:45:40

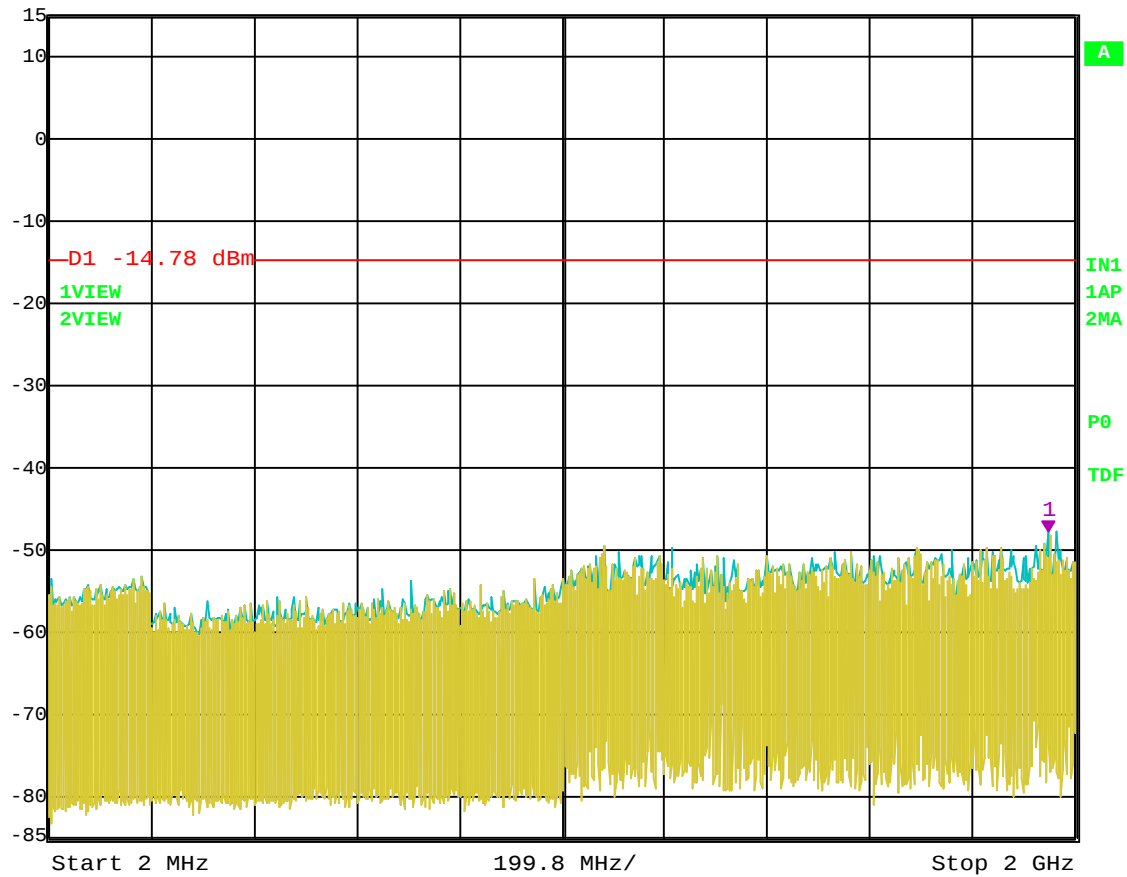
Peak Power Spectral Density – Channel 11 – 802.11 g Mode

RF ANTENNA CONDUCTED

DATA SHEETS



Ref Lvl 15 dBm
Marker 1 [T2] -47.88 dBm
1.94794790 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 700 ms Unit dBm

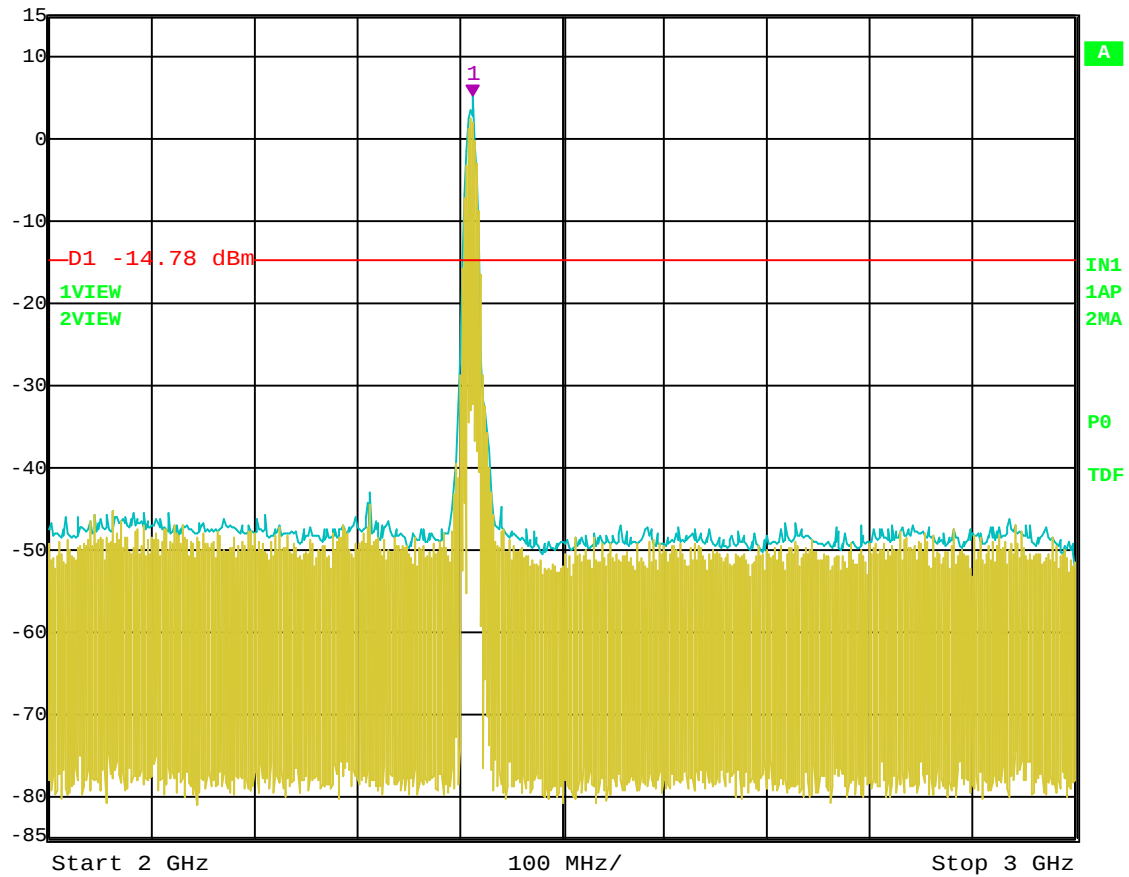


Date: 2.JUL.2004 07:10:59

RF Antenna Conducted Test – Channel 1 – 802.11 b Mode – 2 MHz to 2 GHz



Ref Lvl 15 dBm
Marker 1 [T2] 5.22 dBm 2.41200000 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 250 ms Unit dBm

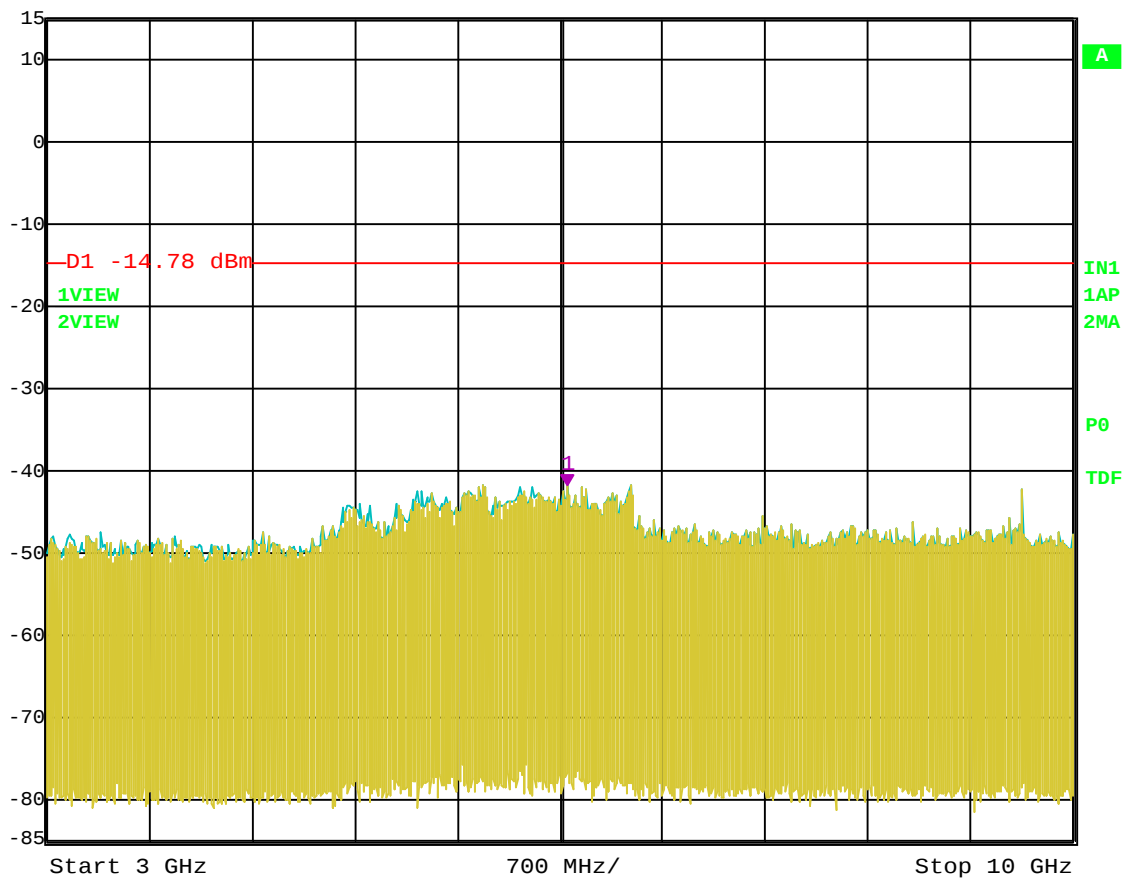


Date: 2.JUL.2004 07:10:23

RF Antenna Conducted Test – Channel 1 – 802.11 b Mode – 2 GHz to 3 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -41.80 dBm
6.54909820 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 1.75 s Unit dBm

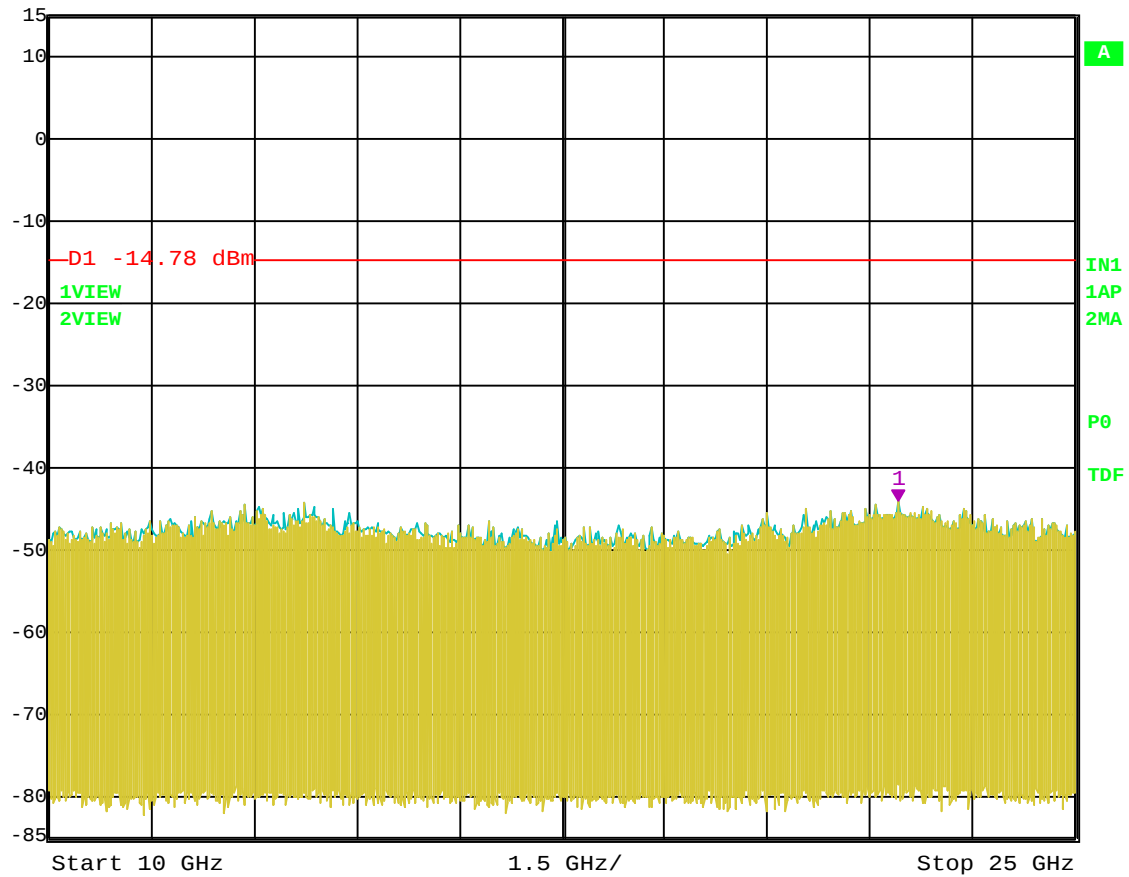


Date: 2.JUL.2004 07:11:39

RF Antenna Conducted Test – Channel 1 – 802.11 b Mode – 3 GHz to 10 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -44.10 dBm
22.41482966 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 3.8 s Unit dBm

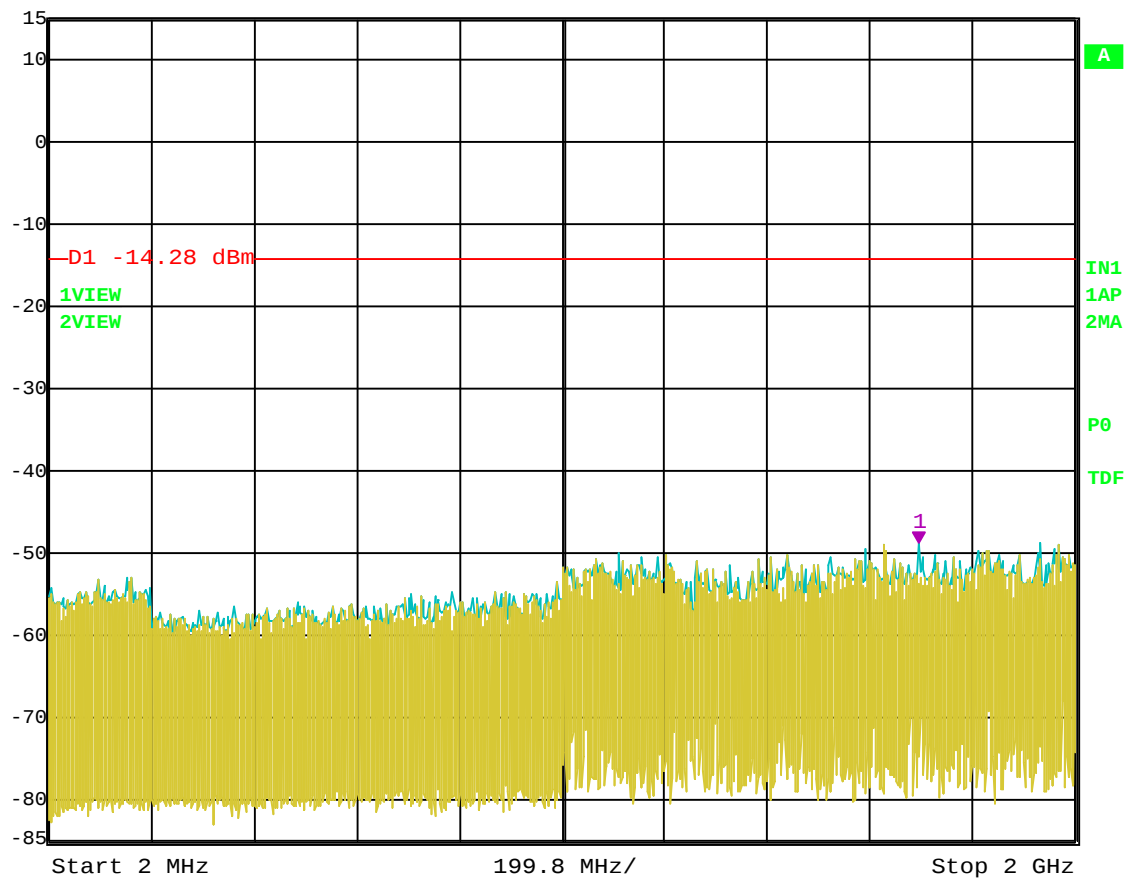


Date: 2.JUL.2004 07:12:17

RF Antenna Conducted Test – Channel 1 – 802.11 b Mode – 10 GHz to 25 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -48.78 dBm
1.69569539 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 700 ms Unit dBm

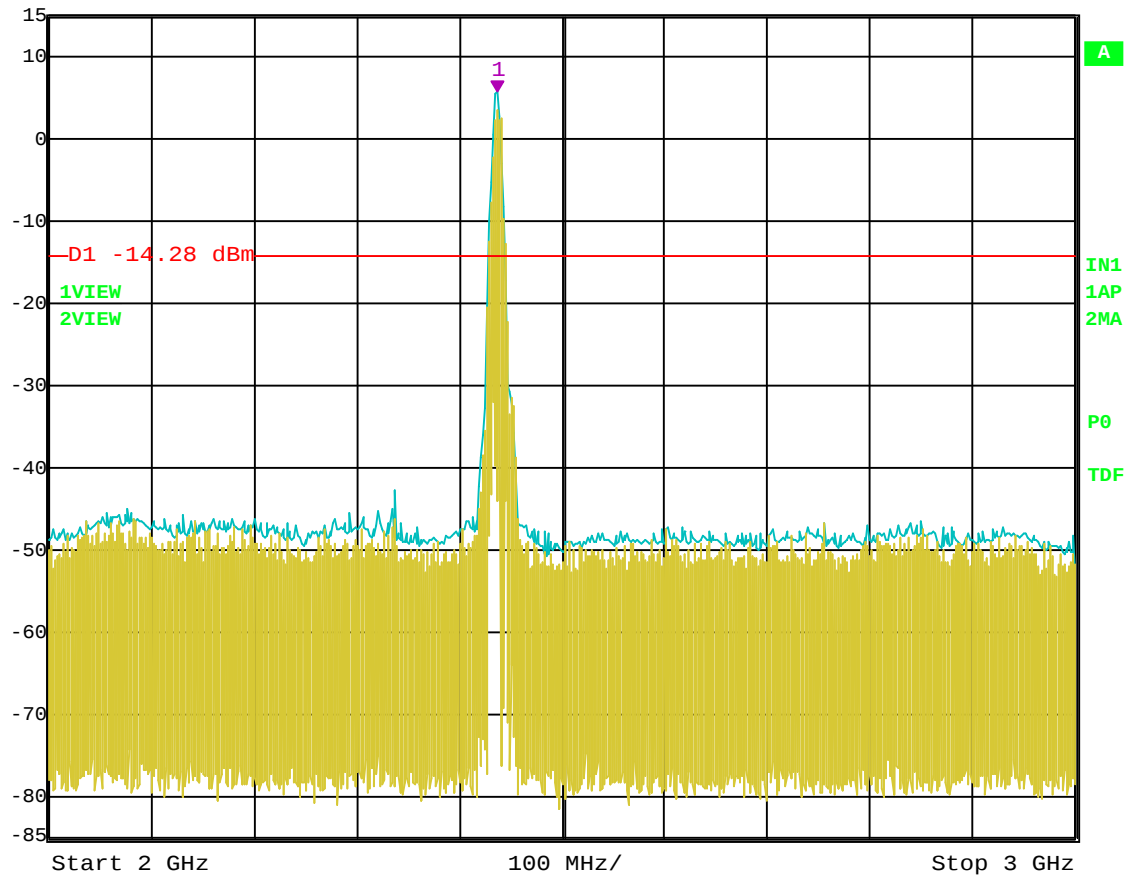


Date: 2.JUL.2004 07:17:06

RF Antenna Conducted Test – Channel 6 – 802.11 b Mode – 2 MHz to 2 GHz



Ref Lvl 15 dBm
Marker 1 [T2] 5.72 dBm 2.43700000 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 250 ms Unit dBm

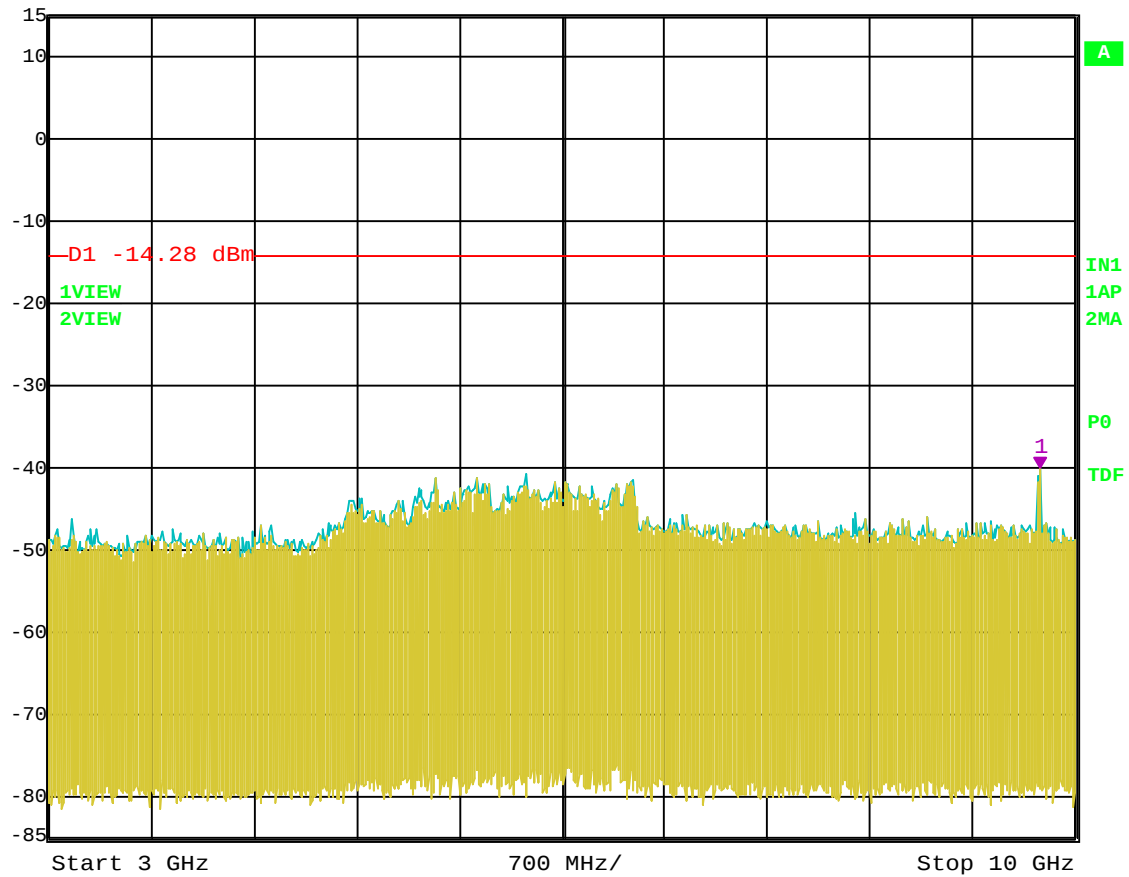


Date: 2.JUL.2004 07:15:52

RF Antenna Conducted Test – Channel 6 – 802.11 b Mode – 2 GHz to 3 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -40.08 dBm
9.76152305 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 1.75 s Unit dBm

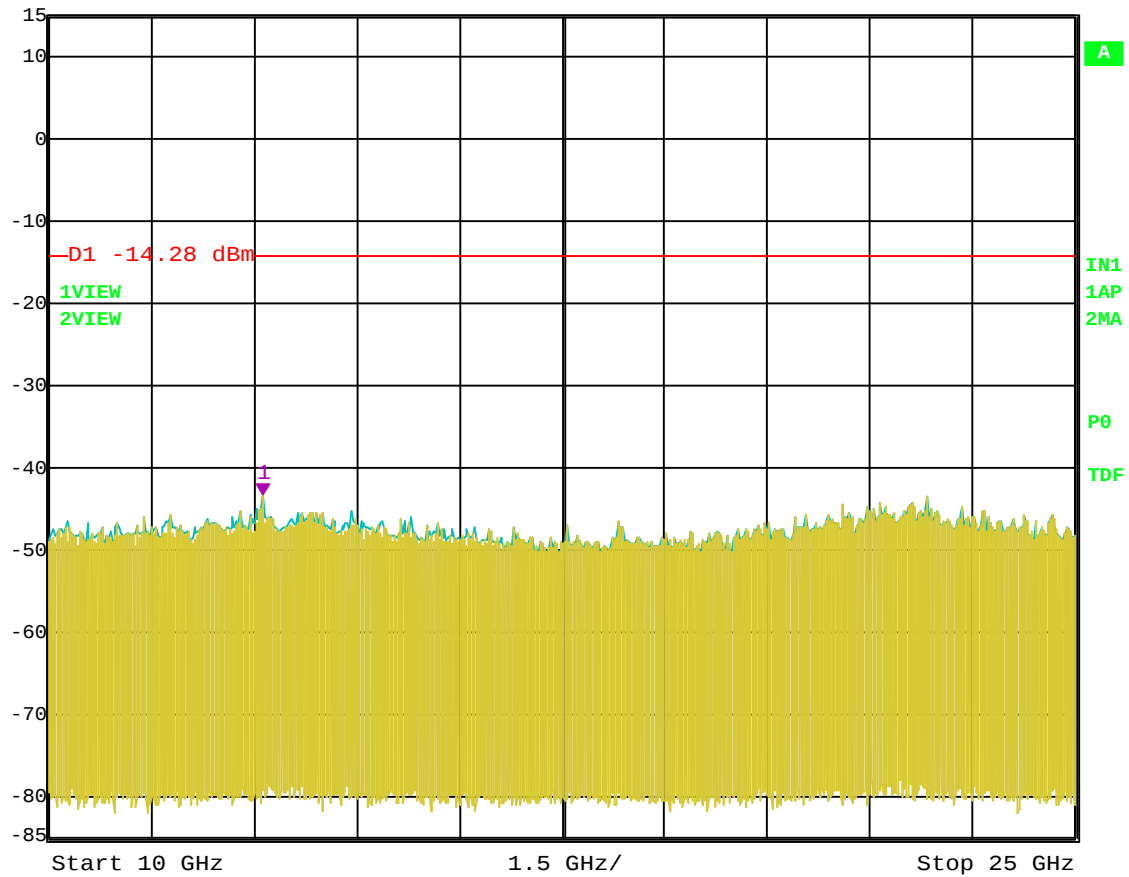


Date: 2.JUL.2004 07:17:38

RF Antenna Conducted Test – Channel 6 – 802.11 b Mode – 3 GHz to 10 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -43.40 dBm
13.12625251 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 3.8 s Unit dBm

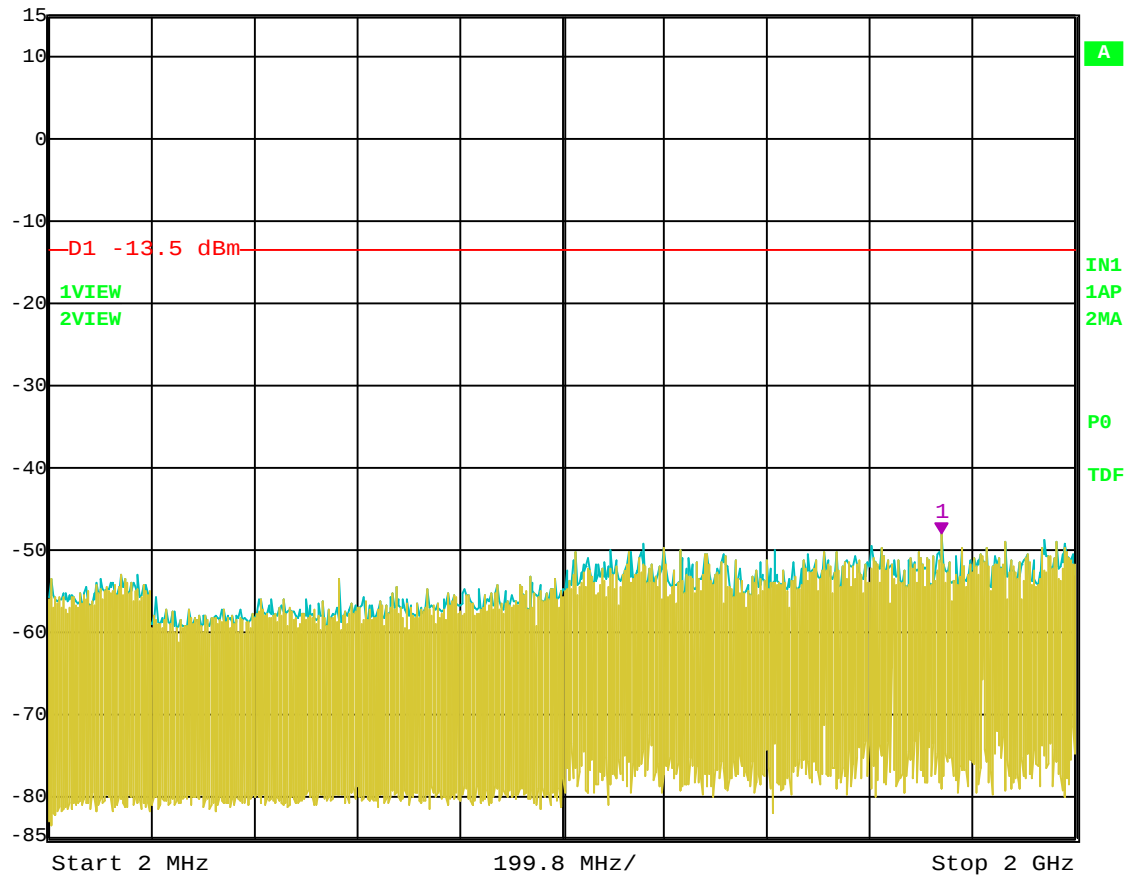


Date: 2.JUL.2004 07:18:11

RF Antenna Conducted Test – Channel 6 – 802.11 b Mode – 10 GHz to 25 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -48.19 dBm
1.73973948 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 700 ms Unit dBm

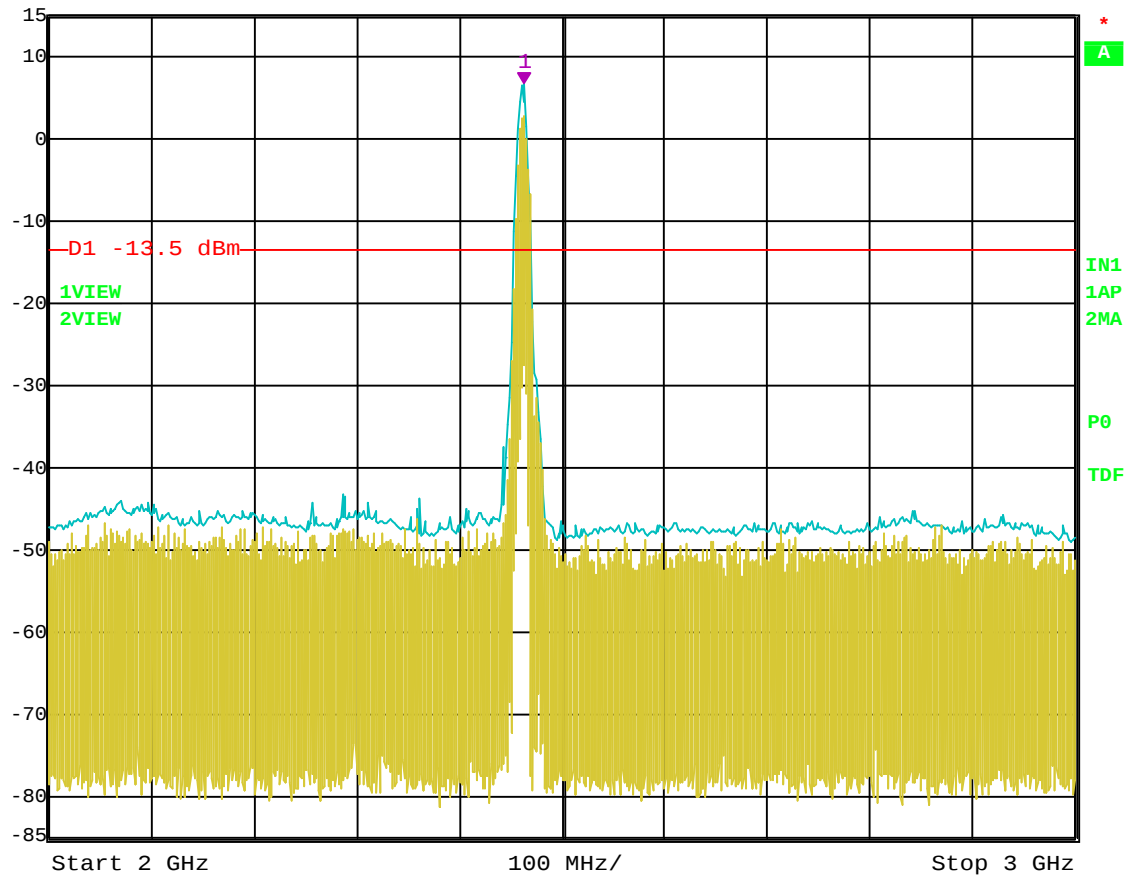


Date: 2.JUL.2004 07:22:27

RF Antenna Conducted Test – Channel 11 – 802.11 b Mode – 2 MHz to 2 GHz



Ref Lvl 15 dBm
Marker 1 [T2] 6.50 dBm 2.46200000 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 250 ms Unit dBm

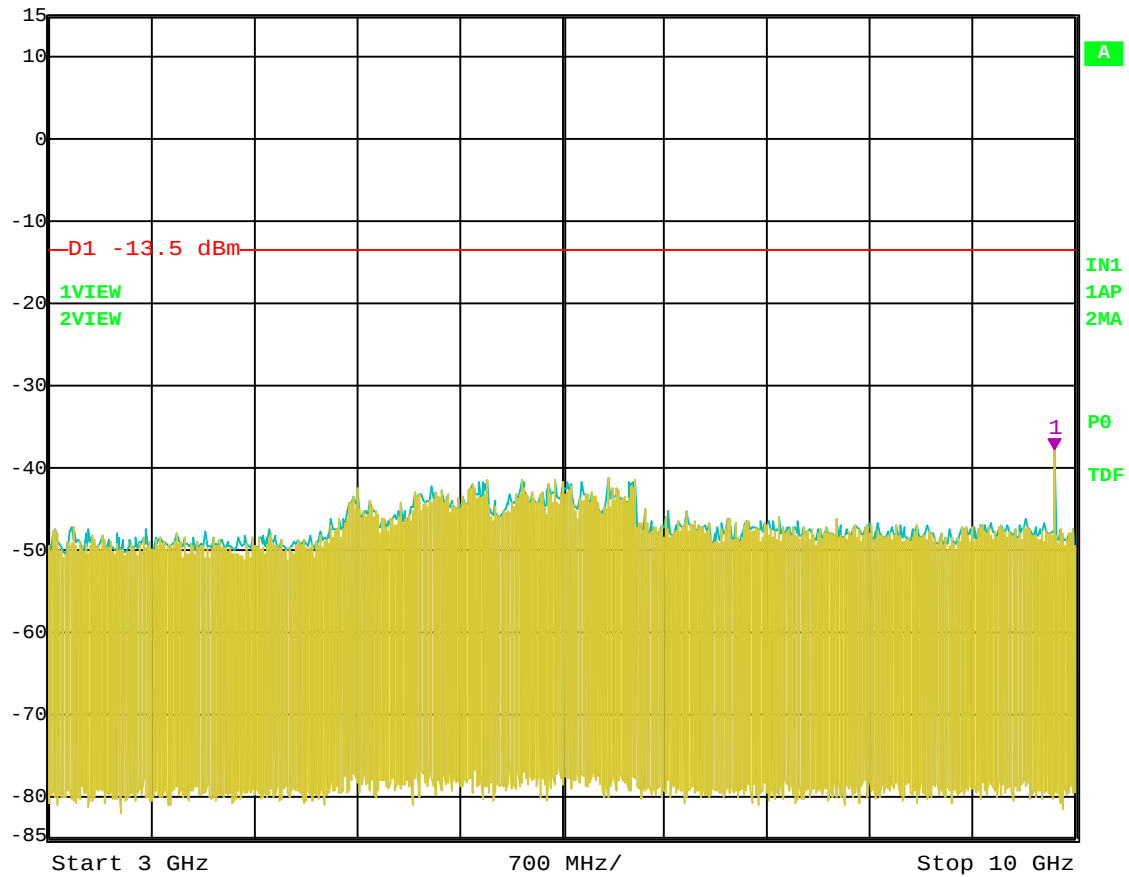


Date: 2.JUL.2004 07:21:54

RF Antenna Conducted Test – Channel 11 – 802.11 b Mode – 2 GHz to 3 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -37.85 dBm
9.85971944 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 1.75 s Unit dBm

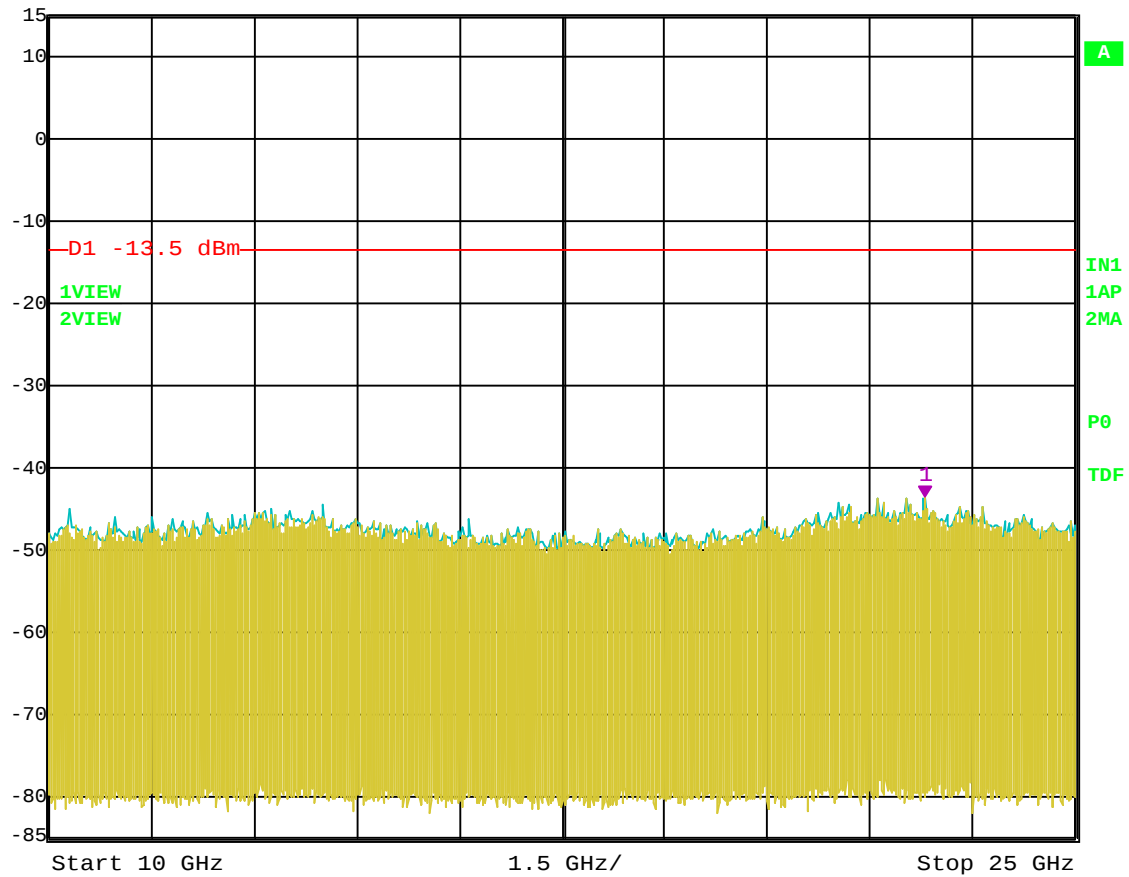


Date: 2.JUL.2004 07:23:00

RF Antenna Conducted Test – Channel 11 – 802.11 b Mode – 3 GHz to 10 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -43.66 dBm
22.80561122 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 3.8 s Unit dBm

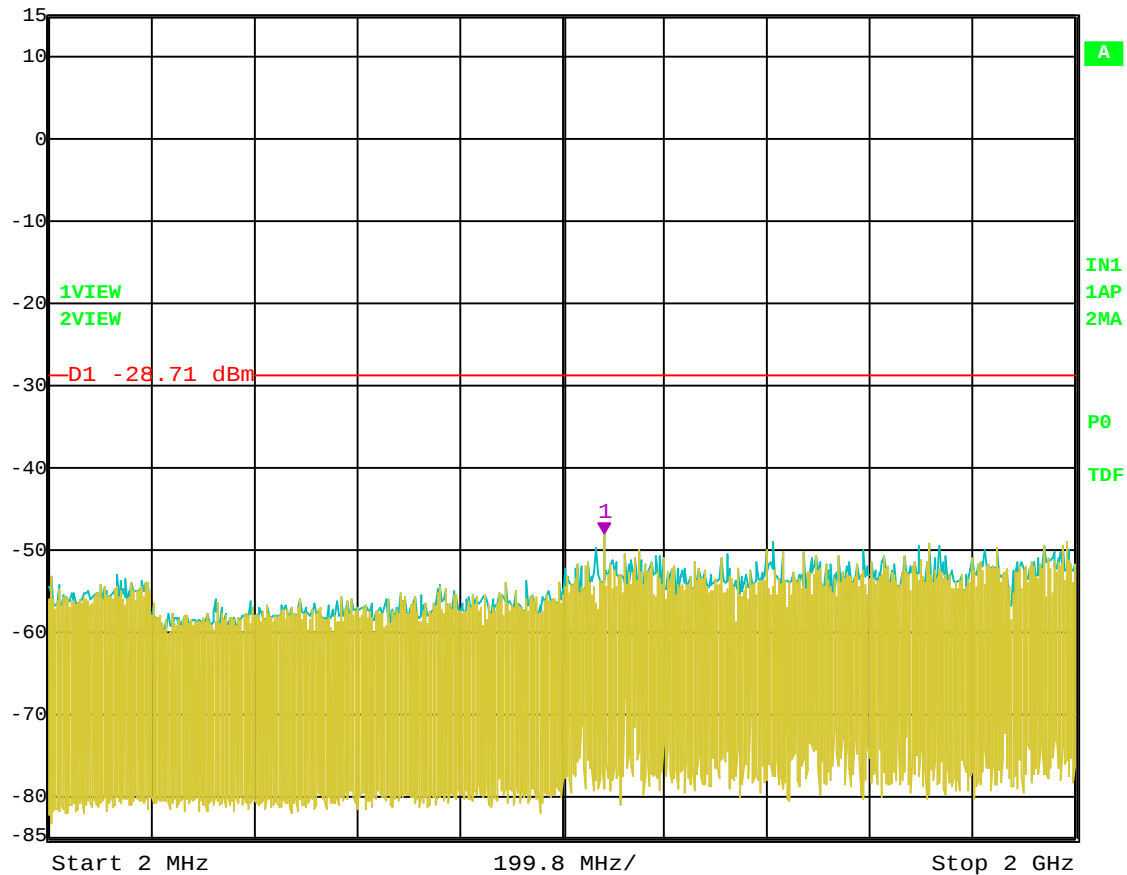


Date: 2.JUL.2004 07:23:37

RF Antenna Conducted Test – Channel 11 – 802.11 b Mode – 10 GHz to 25 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -48.01 dBm
1.08308216 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 700 ms Unit dBm

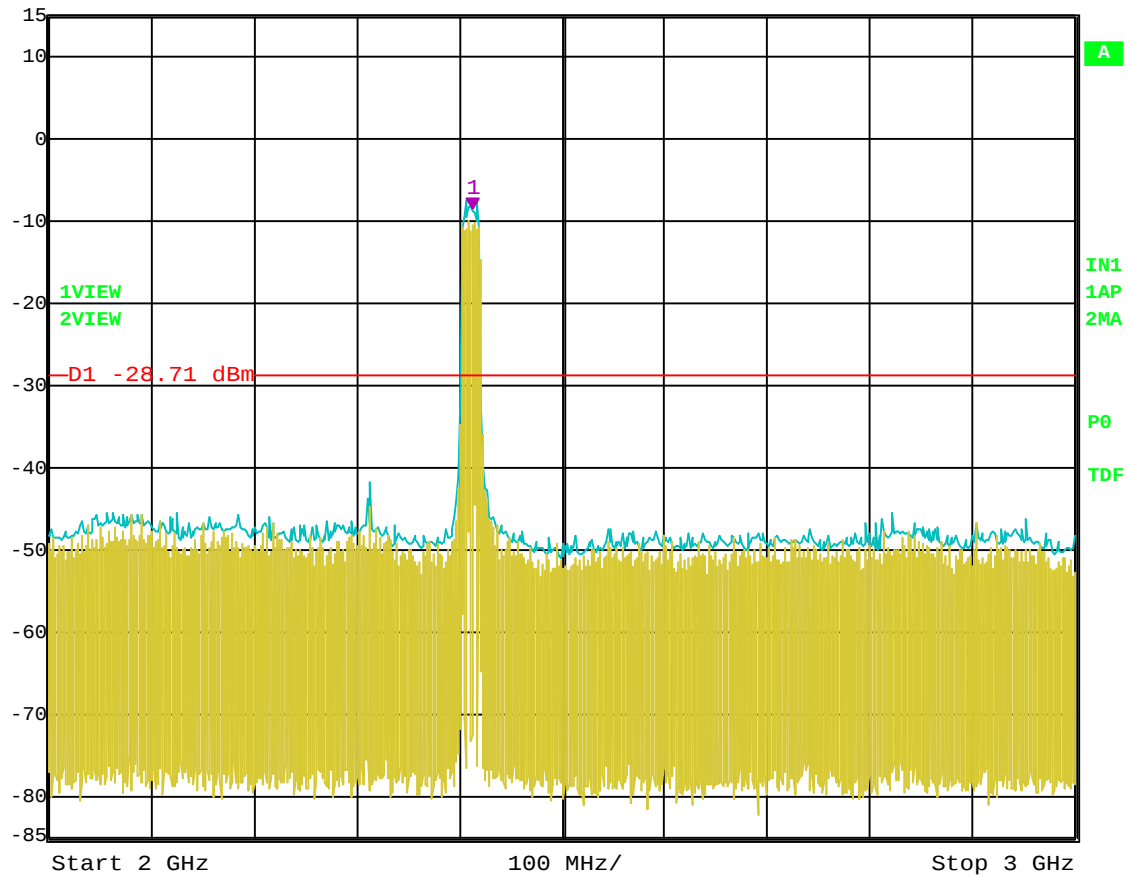


Date: 2.JUL.2004 07:04:52

RF Antenna Conducted Test – Channel 1 – 802.11 g Mode – 2 MHz to 2 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -8.71 dBm 2.41200000 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 250 ms Unit dBm

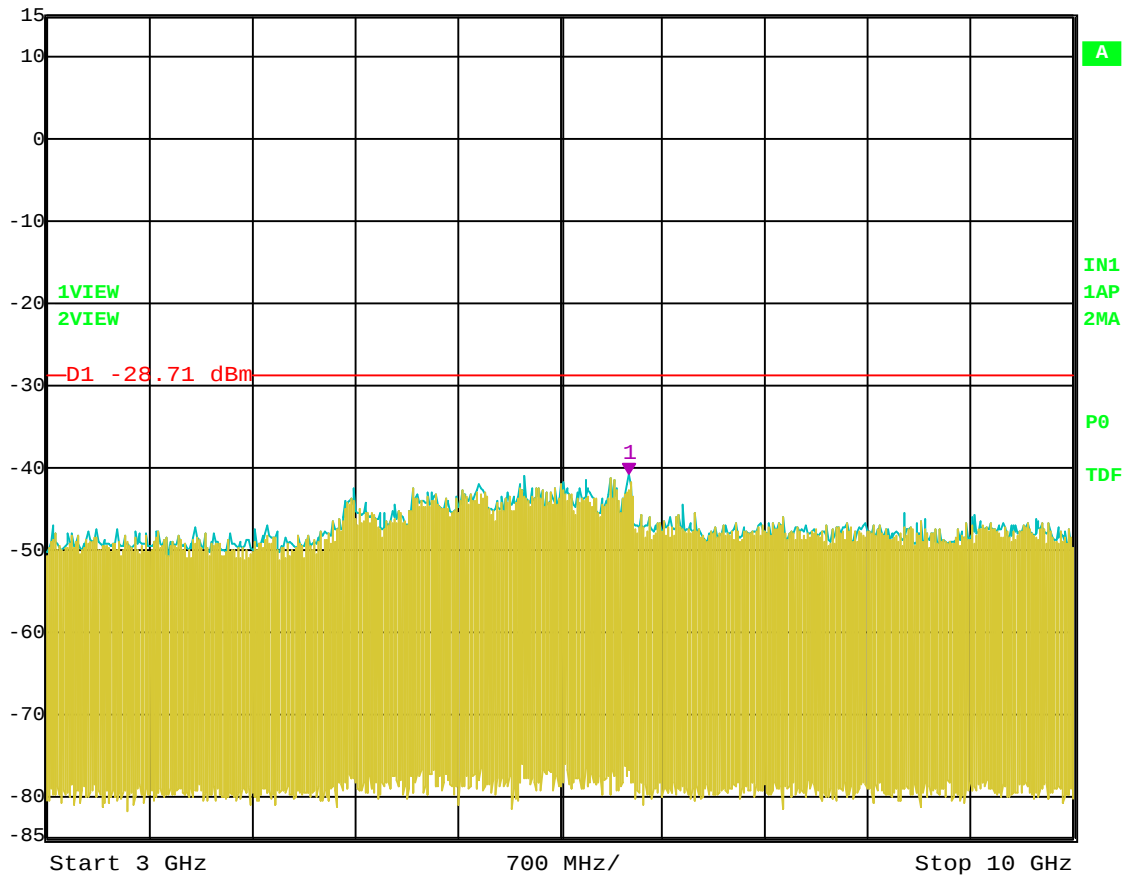


Date: 2.JUL.2004 07:03:51

RF Antenna Conducted Test – Channel 1 – 802.11 g Mode – 2 GHz to 3 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -40.99 dBm
6.96993988 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 1.75 s Unit dBm

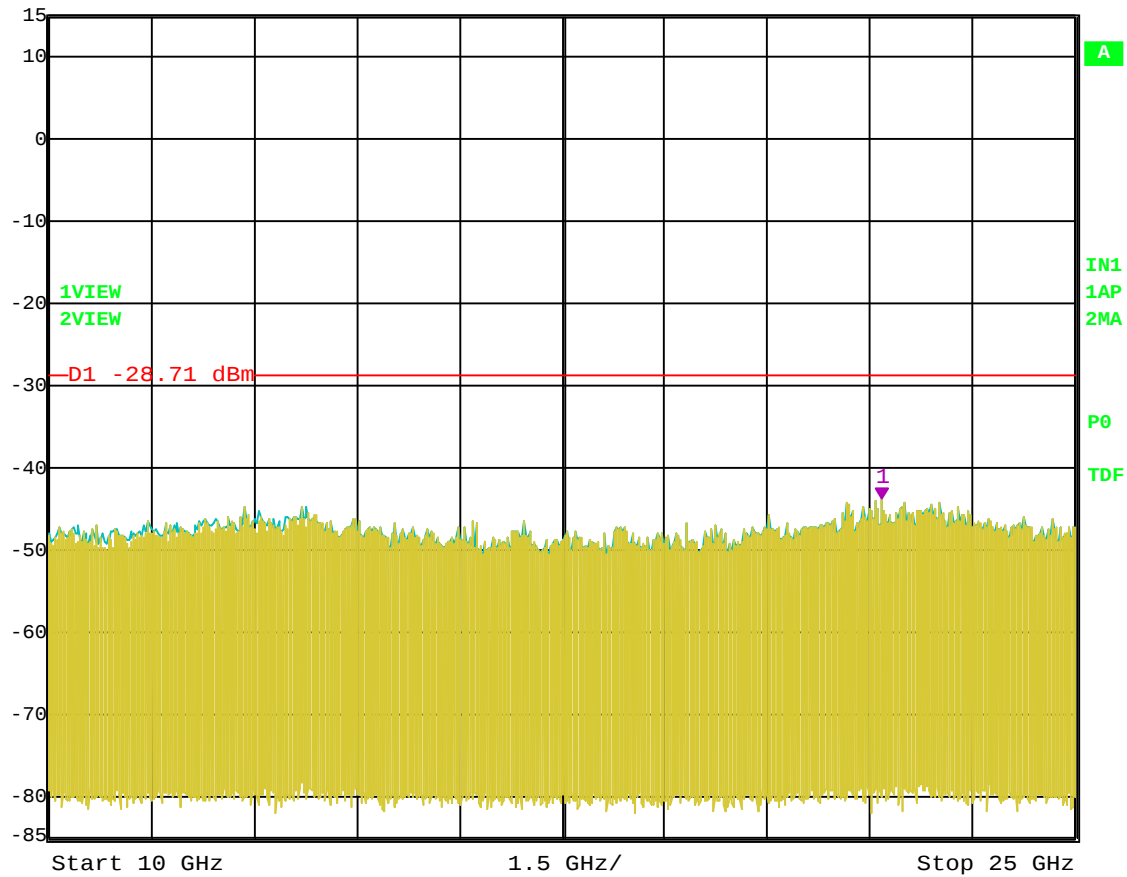


Date: 2.JUL.2004 07:05:36

RF Antenna Conducted Test – Channel 1 – 802.11 g Mode – 3 GHz to 10 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -43.86 dBm
22.17434870 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 3.8 s Unit dBm

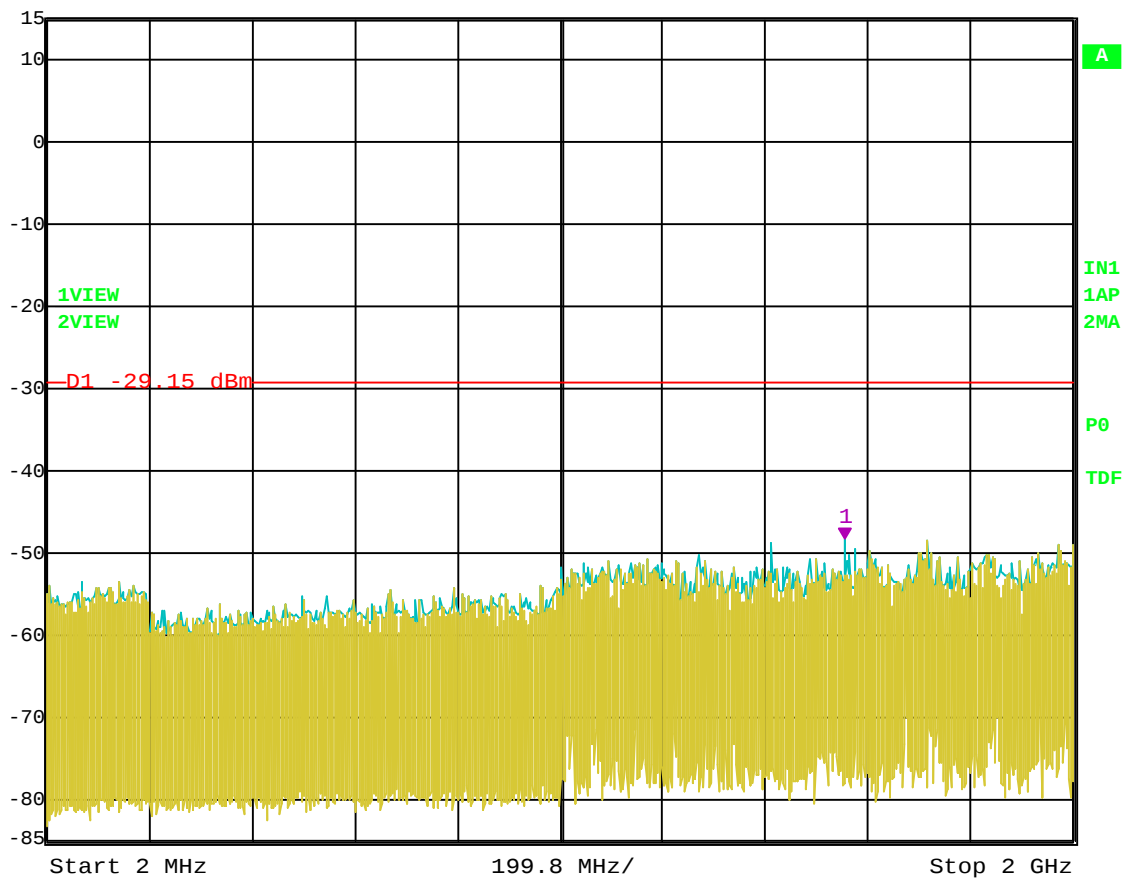


Date: 2.JUL.2004 07:06:11

RF Antenna Conducted Test – Channel 1 – 802.11 g Mode – 10 GHz to 25 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -48.46 dBm
1.55555511 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 700 ms Unit dBm

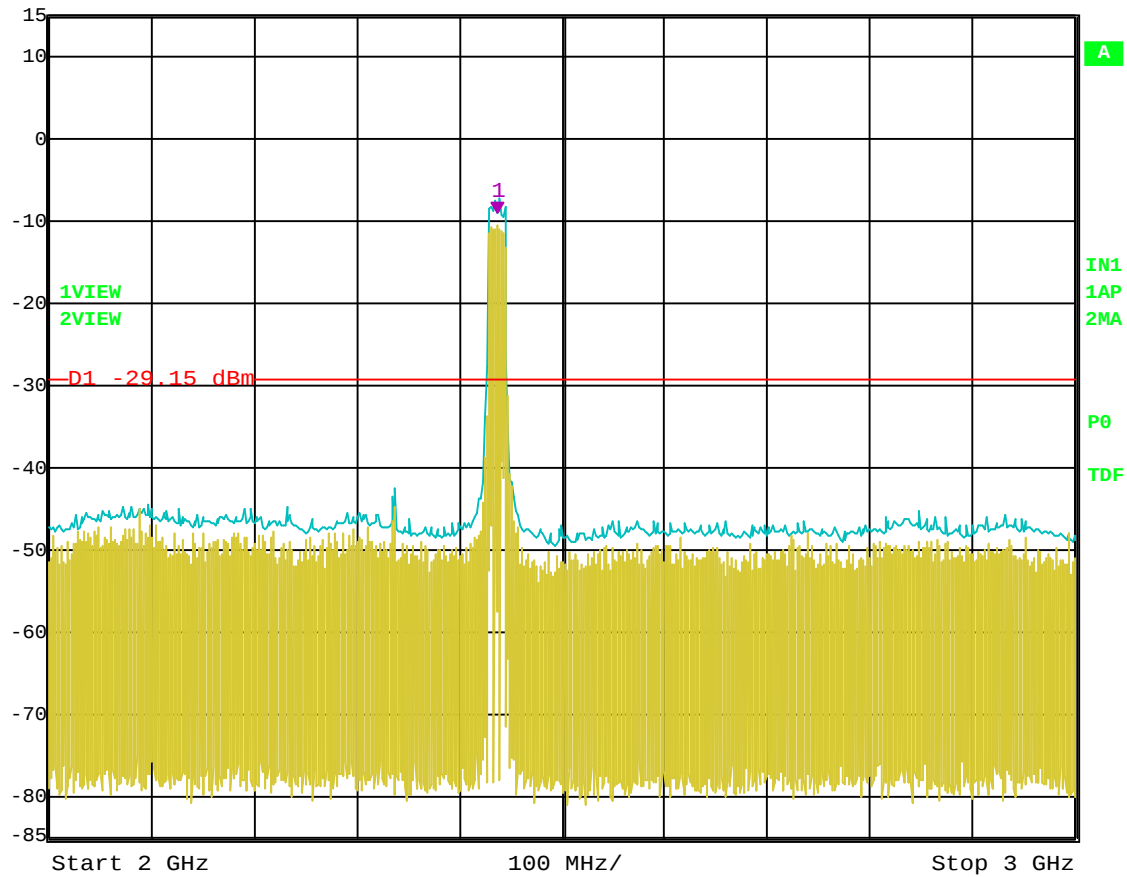


Date: 2.JUL.2004 06:58:15

RF Antenna Conducted Test – Channel 6 – 802.11 g Mode – 2 MHz to 2 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -9.15 dBm
2.43700000 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 250 ms Unit dBm

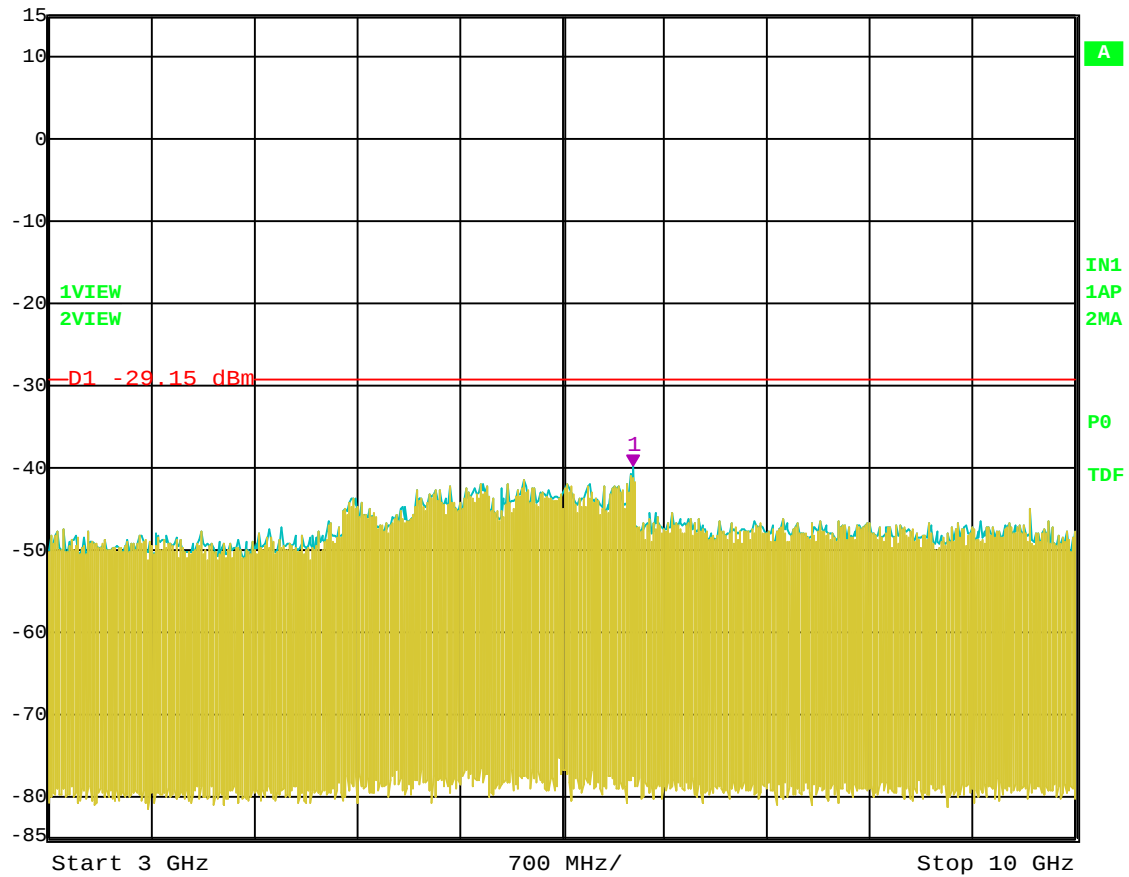


Date: 2.JUL.2004 06:57:22

RF Antenna Conducted Test – Channel 6 – 802.11 g Mode – 2 GHz to 3 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -39.82 dBm
6.98396794 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 1.75 s Unit dBm

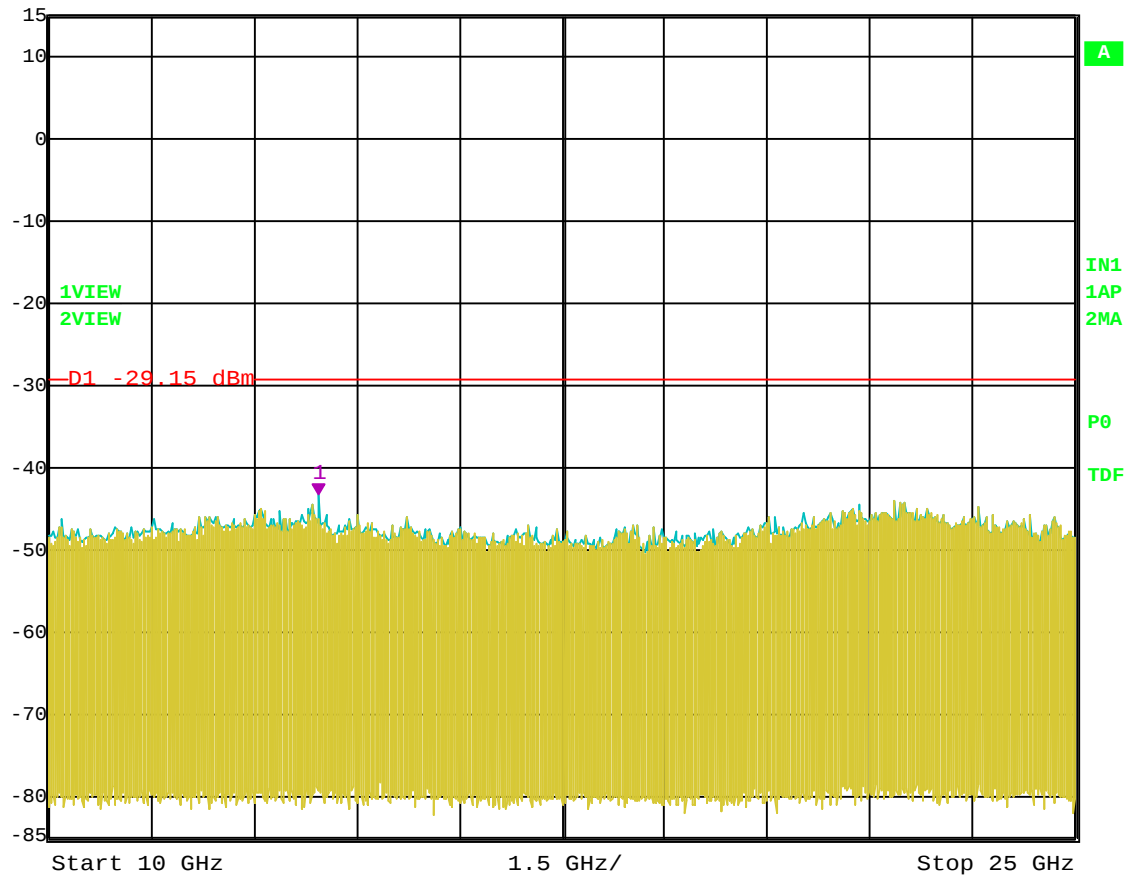


Date: 2.JUL.2004 06:58:46

RF Antenna Conducted Test – Channel 6 – 802.11 g Mode – 3 GHz to 10 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -43.41 dBm
13.93787575 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 3.8 s Unit dBm

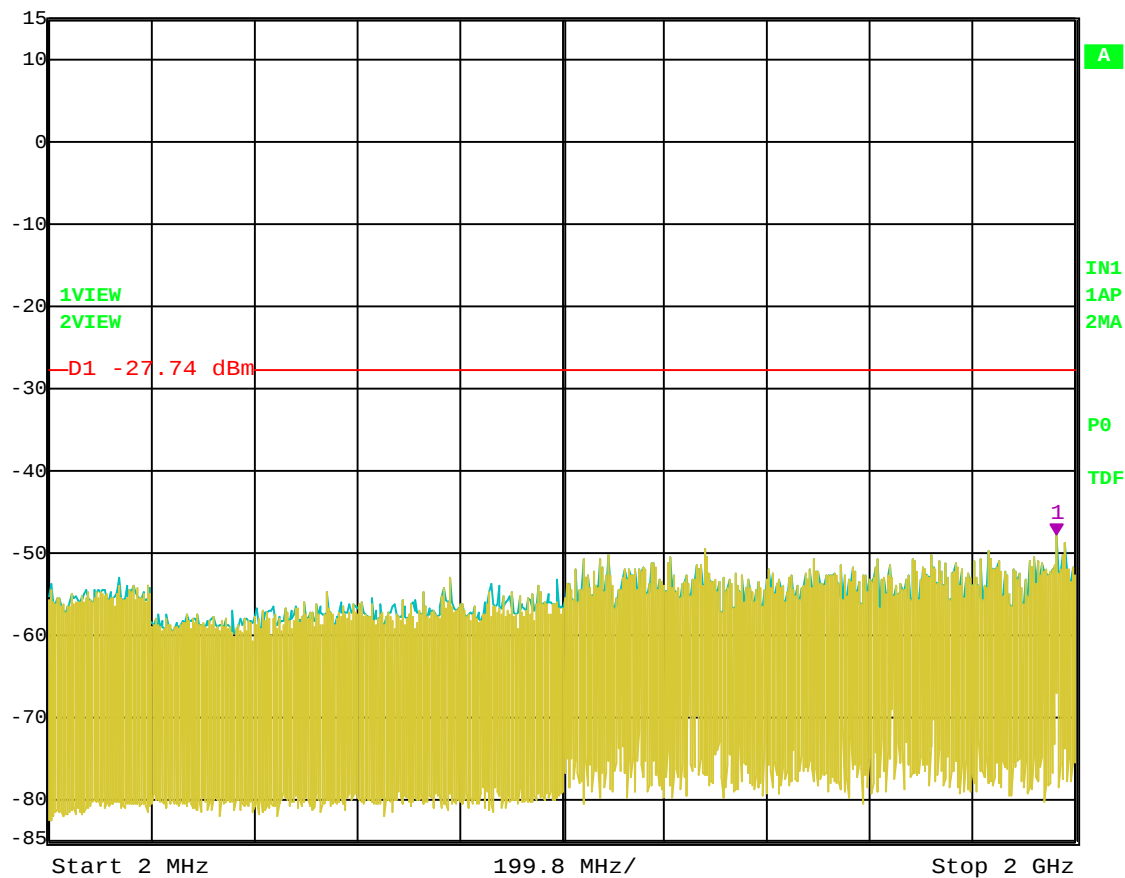


Date: 2.JUL.2004 06:59:30

RF Antenna Conducted Test – Channel 6 – 802.11 g Mode – 10 GHz to 25 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -47.83 dBm
1.96396393 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 700 ms Unit dBm

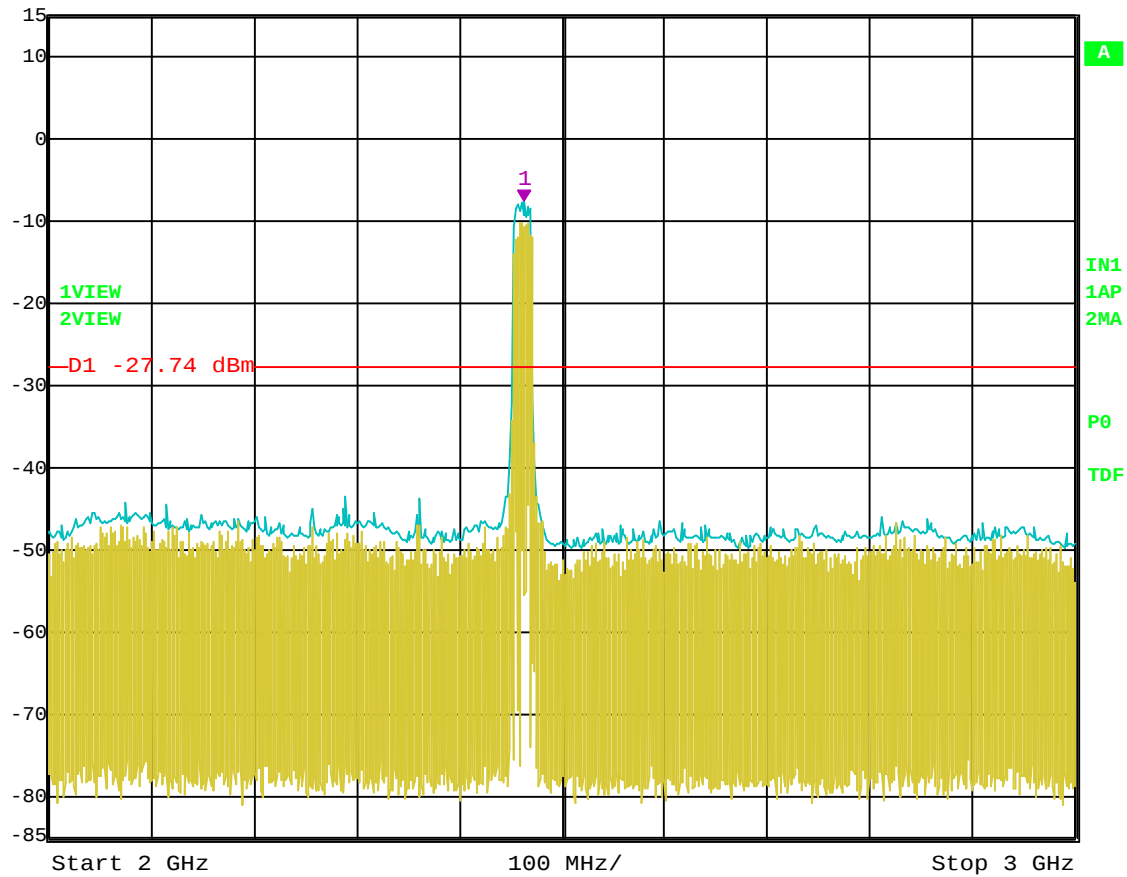


Date: 2.JUL.2004 06:53:10

RF Antenna Conducted Test – Channel 11 – 802.11 g Mode – 2 MHz to 2 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -7.74 dBm 2.46200000 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 250 ms Unit dBm

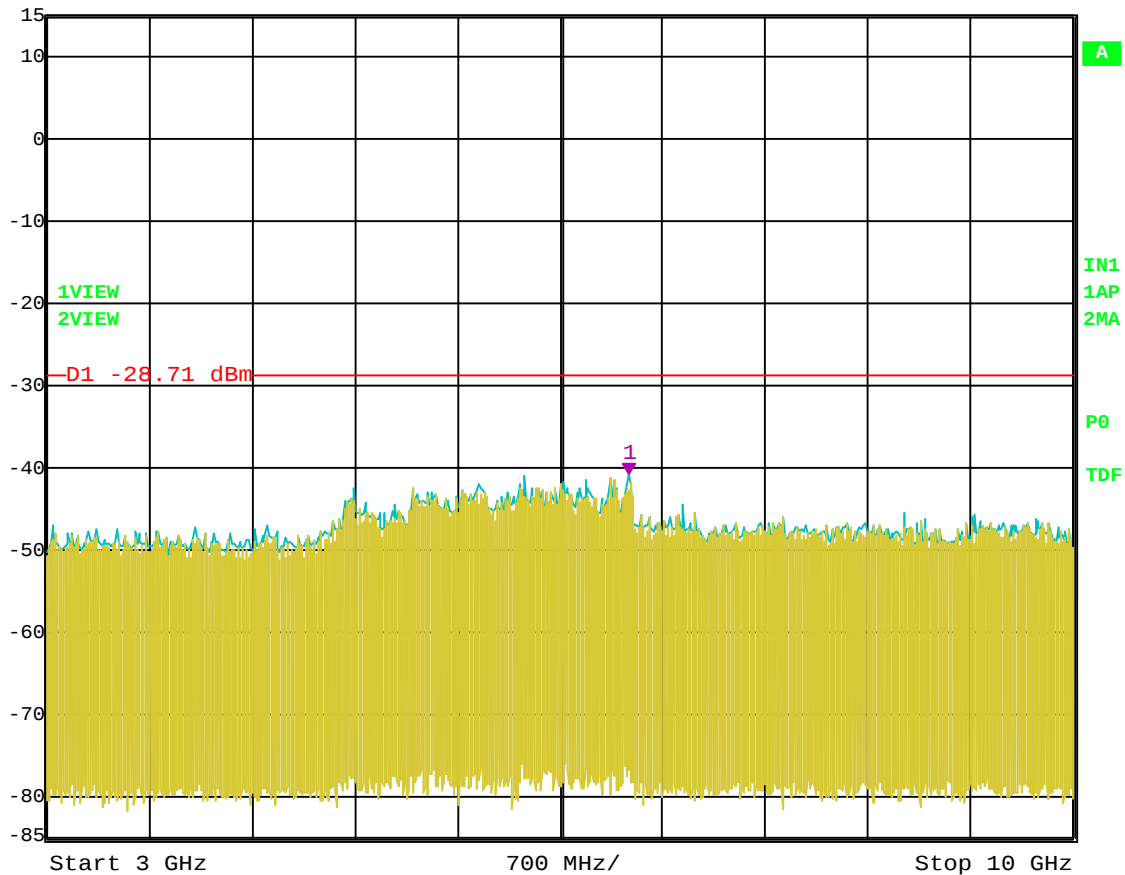


Date: 2.JUL.2004 06:52:36

RF Antenna Conducted Test – Channel 11 – 802.11 g Mode – 2 GHz to 3 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -40.99 dBm
6.96993988 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 1.75 s Unit dBm

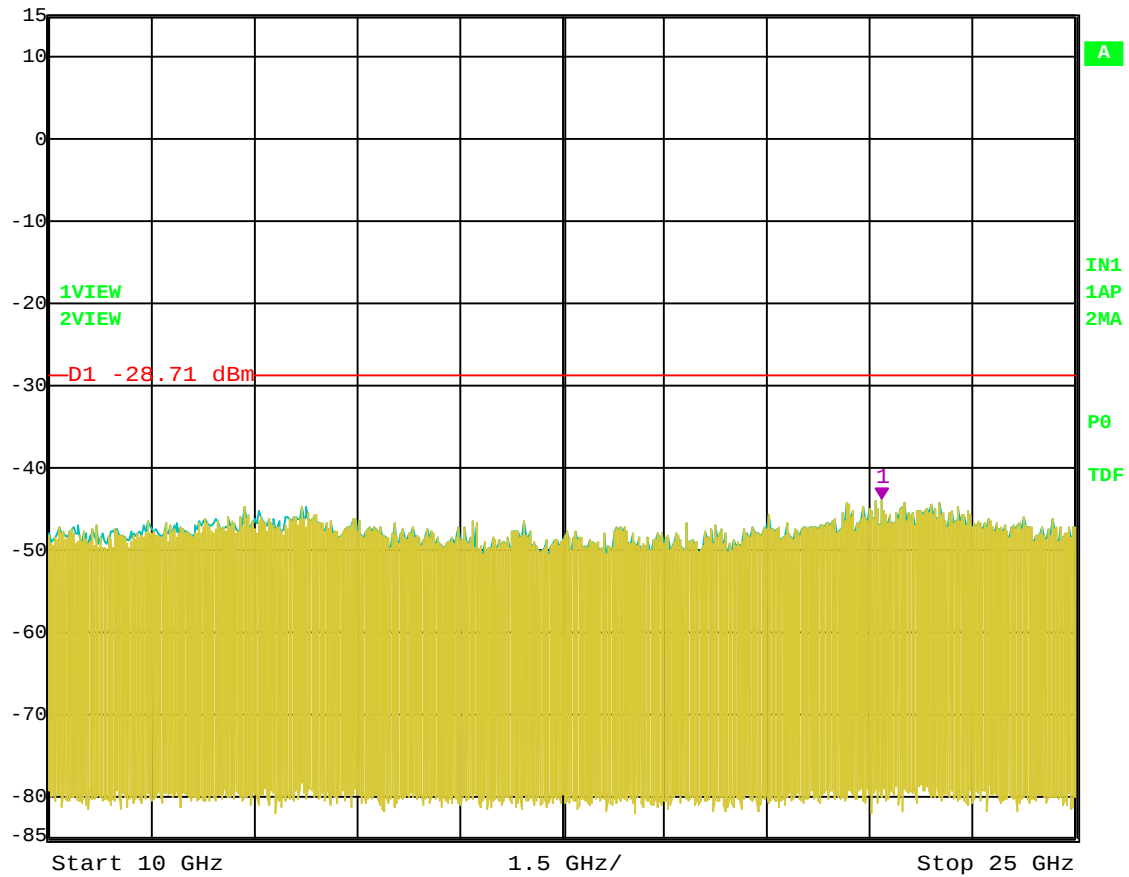


Date: 2.JUL.2004 07:05:36

RF Antenna Conducted Test – Channel 11 – 802.11 g Mode – 3 GHz to 10 GHz



Ref Lvl 15 dBm
Marker 1 [T2] -43.86 dBm
22.17434870 GHz
RBW 100 kHz RF Att 40 dB
VBW 300 kHz
SWT 3.8 s Unit dBm



Date: 2.JUL.2004 07:06:11

RF Antenna Conducted Test – Channel 11 – 802.11 g Mode – 10 GHz to 25 GHz

BAND EDGES

DATA SHEETS

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 b Mode**Transmit Mode**

Gain : 29.0 (99%) Pk. Pwr.: 17.27 dBm (100%) Pk. Pwr.: 17.53 dBm Avg. Power: 14.86 dBm

Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 29.5 (99%) Pk. Pwr.: 17.21 dBm (100%) Pk. Pwr.: 17.47 dBm Avg. Power: 14.82 dBm

Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 30.0 (99%) Pk. Pwr.: 17.42 dBm (100%) Pk. Pwr.: 17.66 dBm Avg. Power: 15.00 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2412	102.55	V	--	--	Peak	2.17	180	Fundamental of Channel 1
2412	96.3	V	--	--	Avg	2.17	180	@ 3 meters
2385.4	58.58	V	74	-15.42	Peak	2.17	180	No Marker Delta Method
2385.4	47.45	V	54	-6.55	Avg	2.17	180	Method Used
2437	103.25	V	--	--	Peak	2.1	180	Fundamental of Channel 6
2437	97.14	V	--	--	Avg	2.1	180	@ 3 meters
2462	102.98	V	--	--	Peak	1	180	Fundamental of Channel 11
2462	96.98	V	--	--	Avg	1	180	@ 3 meters
2488.5	58.15	V	74	-15.85	Peak	1	180	No Marker Delta Method
2491.1	45.17	V	54	-8.83	Peak	1	180	Method Used

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3B2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 b Mode**Transmit Mode**

Gain : 29.0 (99%) Pk. Pwr.: 17.27 dBm (100%) Pk. Pwr.: 17.53 dBm Avg. Power: 14.86 dBm

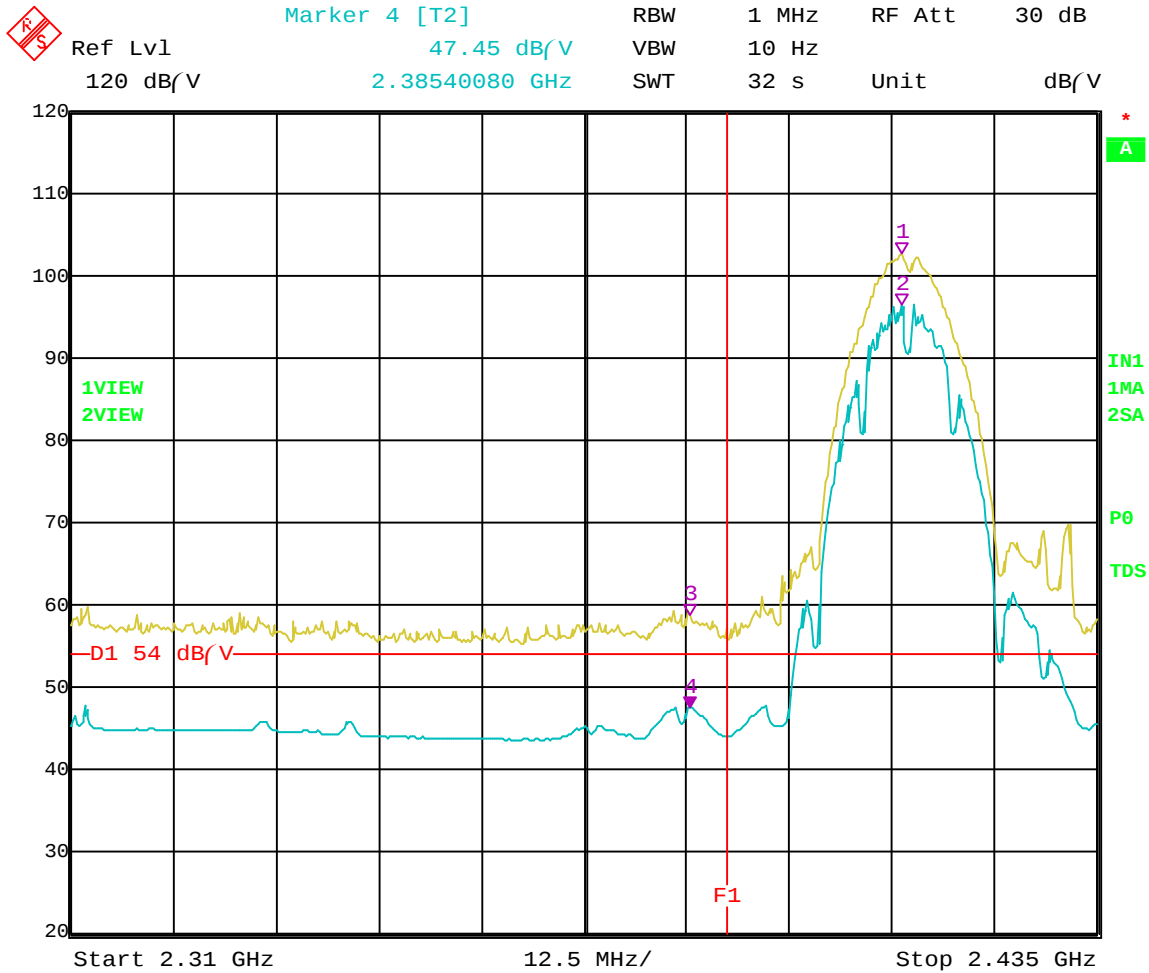
Channel 11 - 802.11 b Mode**Transmit Mode**

Gain : 29.5 (99%) Pk. Pwr.: 17.21 dBm (100%) Pk. Pwr.: 17.47 dBm Avg. Power: 14.82 dBm

Channel 11 - 802.11 b Mode**Transmit Mode**

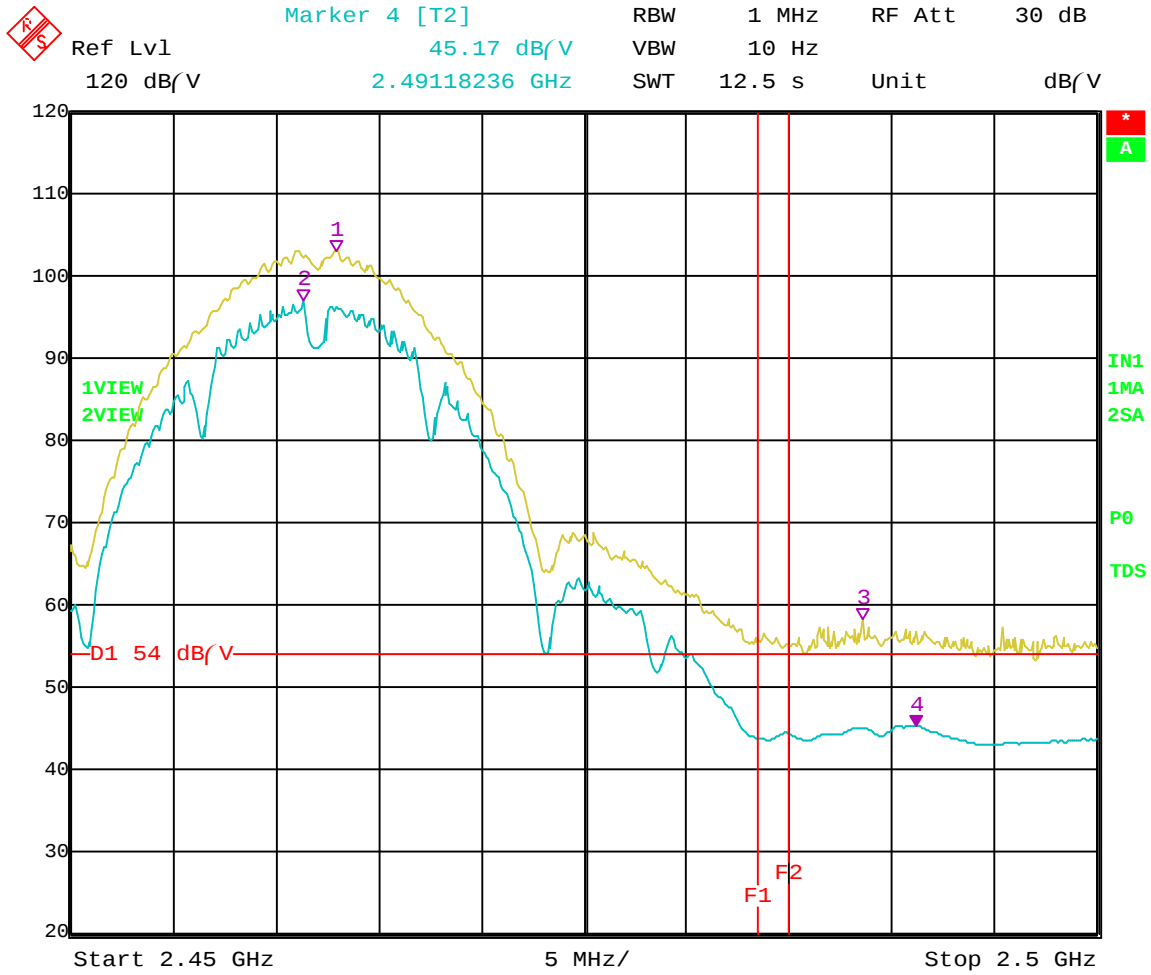
Gain : 30.0 (99%) Pk. Pwr.: 17.42 dBm (100%) Pk. Pwr.: 17.66 dBm Avg. Power: 15.00 dBm

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2412	98.56	H	--	--	Peak	2.62	315	Fundamental of Channel 1
2412	92.17	H	--	--	Avg	2.62	315	@ 3 meters
2383.2	57.13	H	74	-16.87	Peak	2.62	315	No Marker Delta Method
2385.4	45.03	H	54	-8.97	Avg	2.62	315	Method Used
2437	98.59	H	--	--	Peak	2.56	315	Fundamental of Channel 6
2437	92.45	H	--	--	Avg	2.56	315	@ 3 meters
2462	98.07	H	--	--	Peak	2.5	315	Fundamental of Channel 11
2462	92.18	H	--	--	Avg	2.5	315	@ 3 meters
2485.6	53.58	H	74	-20.42	Peak	2.5	315	No Marker Delta Method
2485.6	42.97	H	54	-11.03	Peak	2.5	315	Method Used



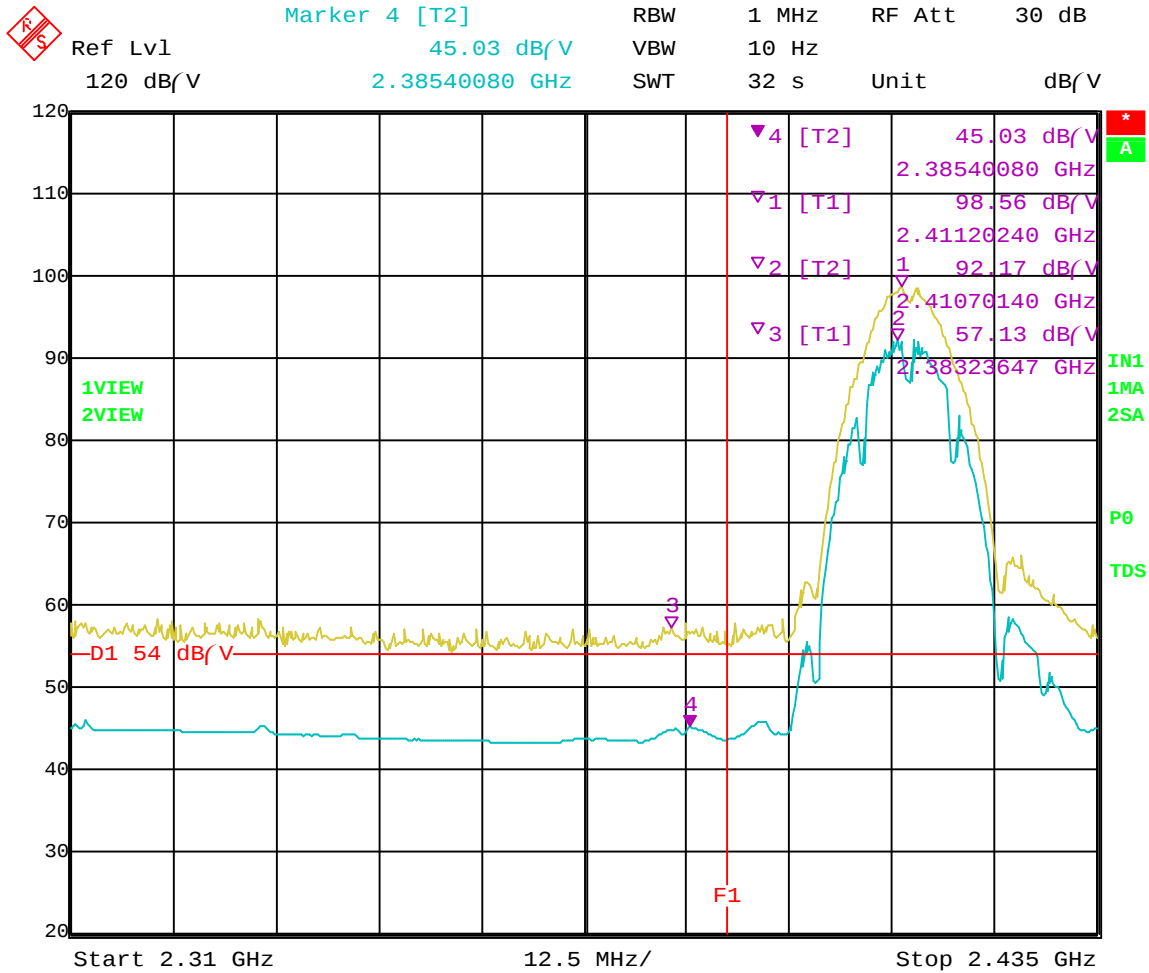
Date: 2.JUL.2004 10:38:21

Band Edge – Channel 1 – Vertical Polarization – 802.11 b Mode



Date: 2.JUL.2004 10:46:53

Band Edge – Channel 11 – Vertical Polarization – 802.11 b Mode

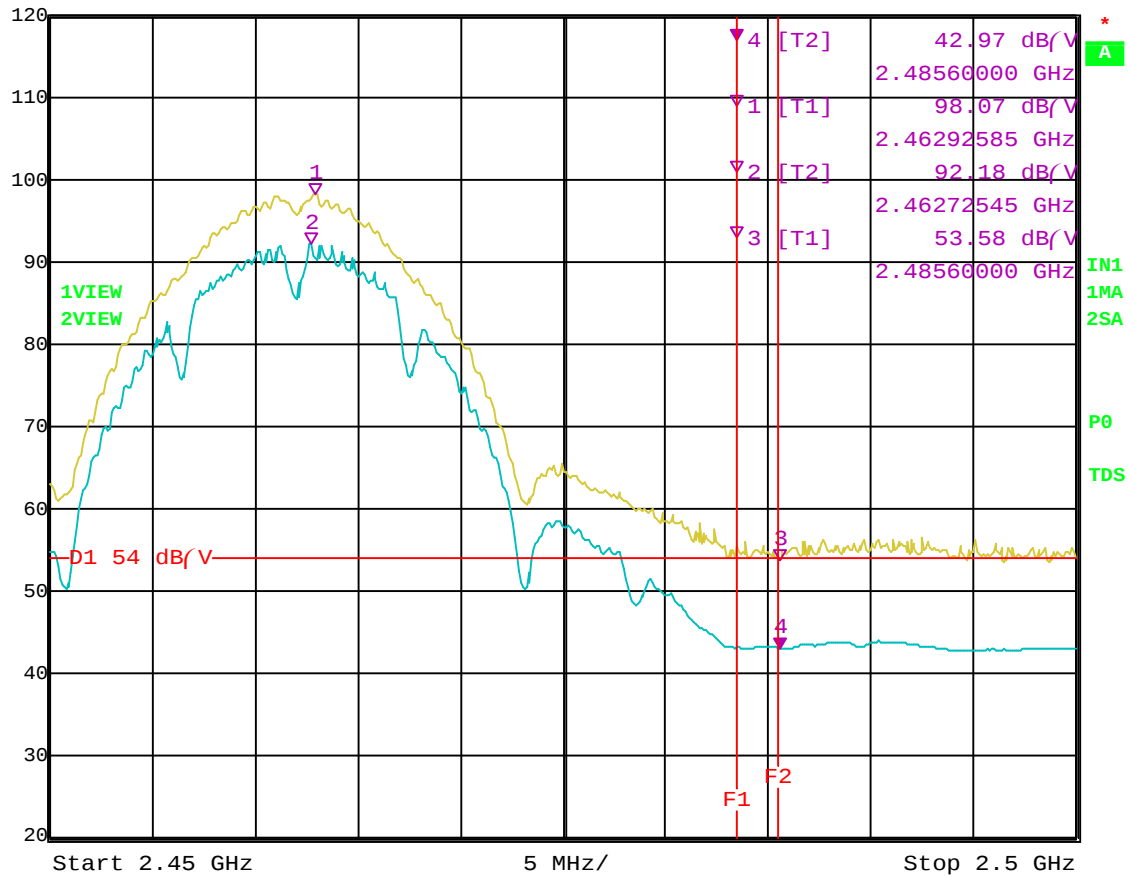


Date: 2.JUL.2004 11:40:45

Band Edge – Channel 1 – Horizontal Polarization – 802.11 b Mode



Ref Lvl 120 dB/V
Marker 4 [T2] 42.97 dB/V
2.48560000 GHz
RBW 1 MHz RF Att 30 dB
VBW 10 Hz
SWT 12.5 s Unit dB/V



Date: 2.JUL.2004 11:49:33

Band Edge – Channel 11 – Horizontal Polarization – 802.11 b Mode

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 g Mode**Transmit Mode**

Gain : 19.0 (99%) Pk. Pwr.: 11.83 dBm (100%) Pk. Pwr.: 16.36 dBm Avg. Power: 5.50 dBm

Channel 6 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.90 dBm (100%) Pk. Pwr.: 16.50 dBm Avg. Power: 5.57 dBm

Channel 11 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.60 dBm (100%) Pk. Pwr.: 16.28 dBm Avg. Power: 5.26 dBm

Freq. (MHz)		Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2412	96.64	V	--	--	Peak	1	225	Fundamental of Channel 1
2412	83.25	V	--	--	Avg	1	225	@ 3 meters
2389.6	56.16	V	74	-17.84	Peak	1	225	No Marker Delta Method
2387.4	43.93	V	54	-10.07	Avg	1	225	Method Used
2437	93.93	V	--	--	Peak	2.11	180	Fundamental of Channel 6
2437	81.34	V	--	--	Avg	2.11	180	@ 3 meters
2462	95.66	V	--	--	Peak	2.02	180	Fundamental of Channel 11
2462	81.27	V	--	--	Avg	2.02	180	@ 3 meters
2483.5	56.66	V	74	-17.34	Peak	2.02	180	No Marker Delta Method
2483.5	43.22	V	54	-10.78	Peak	2.02	180	Method Used

FCC 15.247

Intel Corporation

Date: 7/01/04

Intel Mini PCI Type 802.11BG Wireless LAN Adapter

Lab: X

Model: WM3A2200BG

Tested By: Benigno Chavez

Configuration: HP Laptop Agency Series #: HSTNN-Q09C

Channel 1 - 802.11 g Mode**Transmit Mode**

Gain : 19.0 (99%) Pk. Pwr.: 11.83 dBm (100%) Pk. Pwr.: 16.36 dBm Avg. Power: 5.50 dBm

Channel 6 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.90 dBm (100%) Pk. Pwr.: 16.50 dBm Avg. Power: 5.57 dBm

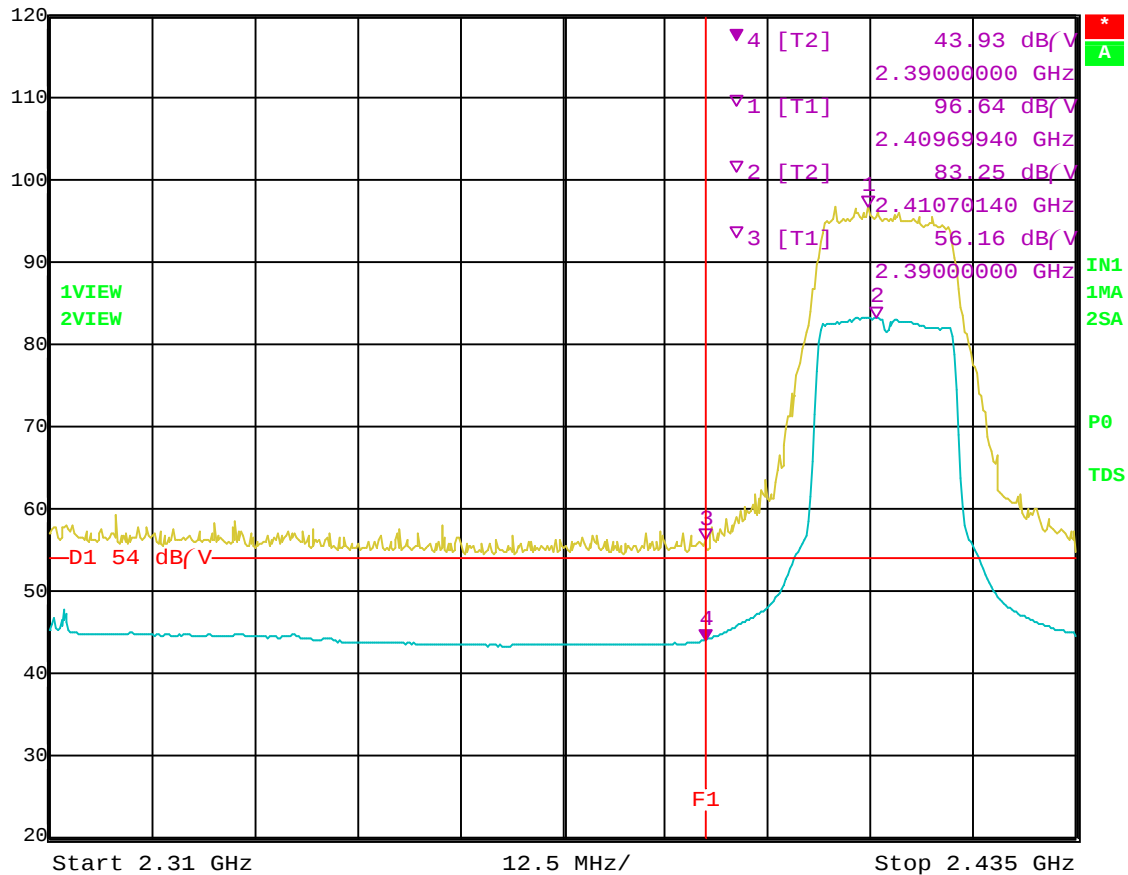
Channel 11 - 802.11 g Mode**Transmit Mode**

Gain : 19.5 (99%) Pk. Pwr.: 11.60 dBm (100%) Pk. Pwr.: 16.28 dBm Avg. Power: 5.26 dBm

Freq. (MHz)		Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
2412	91.37	H	--	--	Peak	2.62	315	Fundamental of Channel 1
2412	78.33	H	--	--	Avg	2.62	315	@ 3 meters
2390	55.43	H	74	-18.57	Peak	2.62	315	No Marker Delta Method
2390	43.4	H	54	-10.6	Avg	2.62	315	Method Used
2437	90.4	H	--	--	Peak	2.57	315	Fundamental of Channel 6
2437	78.01	H	--	--	Avg	2.57	315	@ 3 meters
2462	90.32	H	--	--	Peak	2.54	315	Fundamental of Channel 11
2462	77.02	H	--	--	Avg	2.54	315	@ 3 meters
2483.7	54.74	H	74	-19.26	Peak	2.54	315	No Marker Delta Method
2483.7	42.88	H	54	-11.12	Peak	2.54	315	Method Used

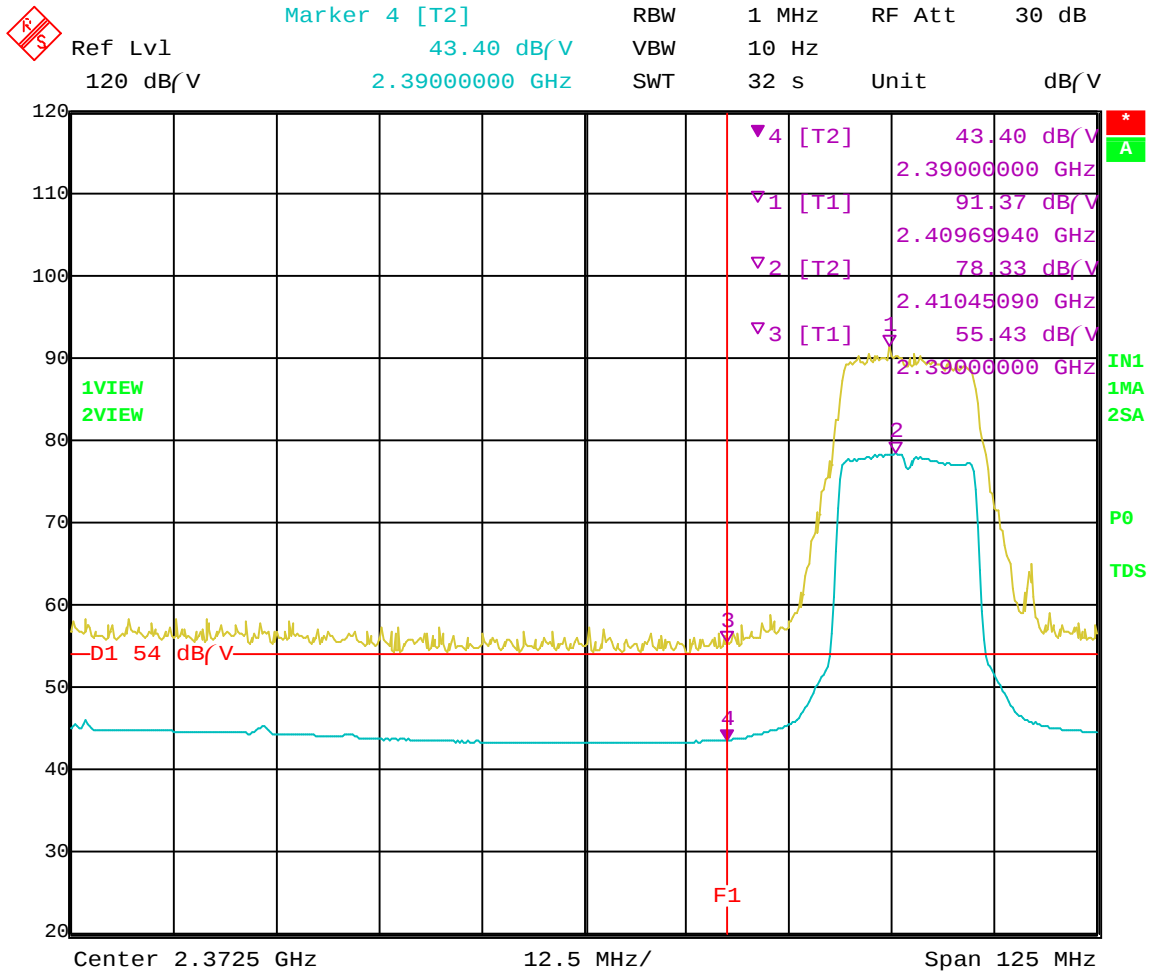


Ref Lvl 120 dB/V
Marker 4 [T2] 43.93 dB/V
2.39000000 GHz
RBW 1 MHz RF Att 30 dB
VBW 10 Hz
SWT 32 s Unit dB/V



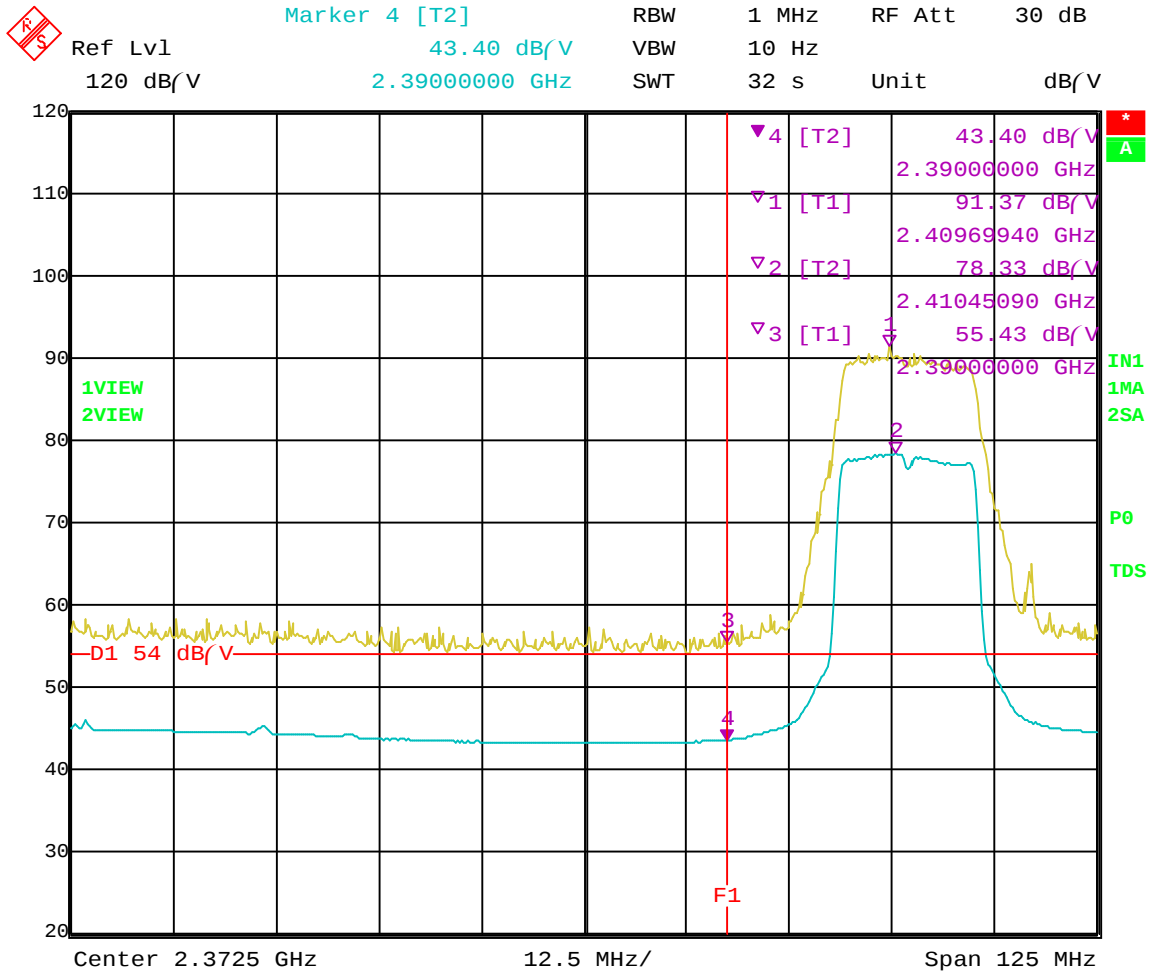
Date: 2.JUL.2004 11:12:21

Band Edge – Channel 1 – Vertical Polarization – 802.11 g Mode



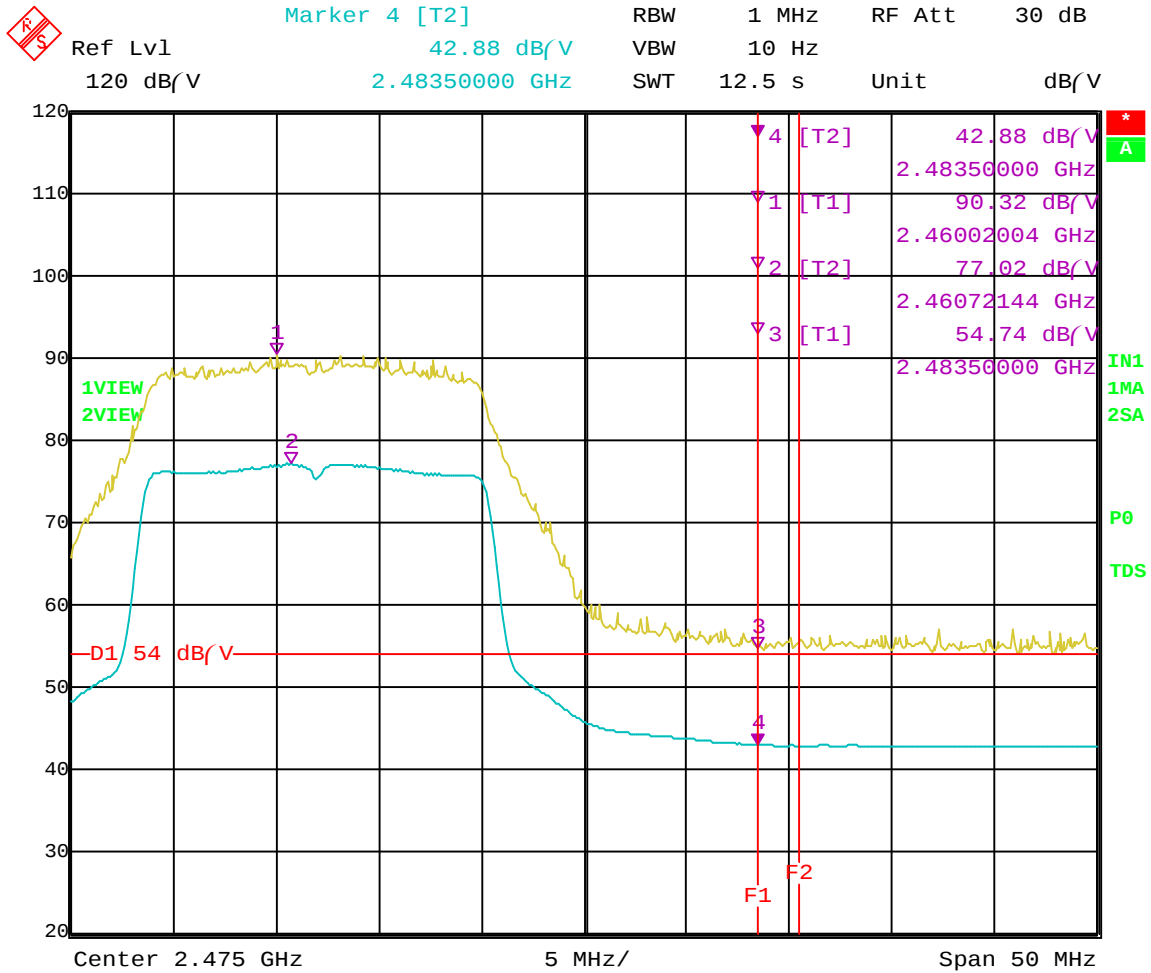
Date: 2.JUL.2004 11:20:07

Band Edge – Channel 11 – Vertical Polarization – 802.11 g Mode



Date: 2.JUL.2004 11:20:07

Band Edge – Channel 1 – Horizontal Polarization – 802.11 g Mode



Date: 2.JUL.2004 11:32:35

Band Edge – Channel 11 – Horizontal Polarization – 802.11 g Mode

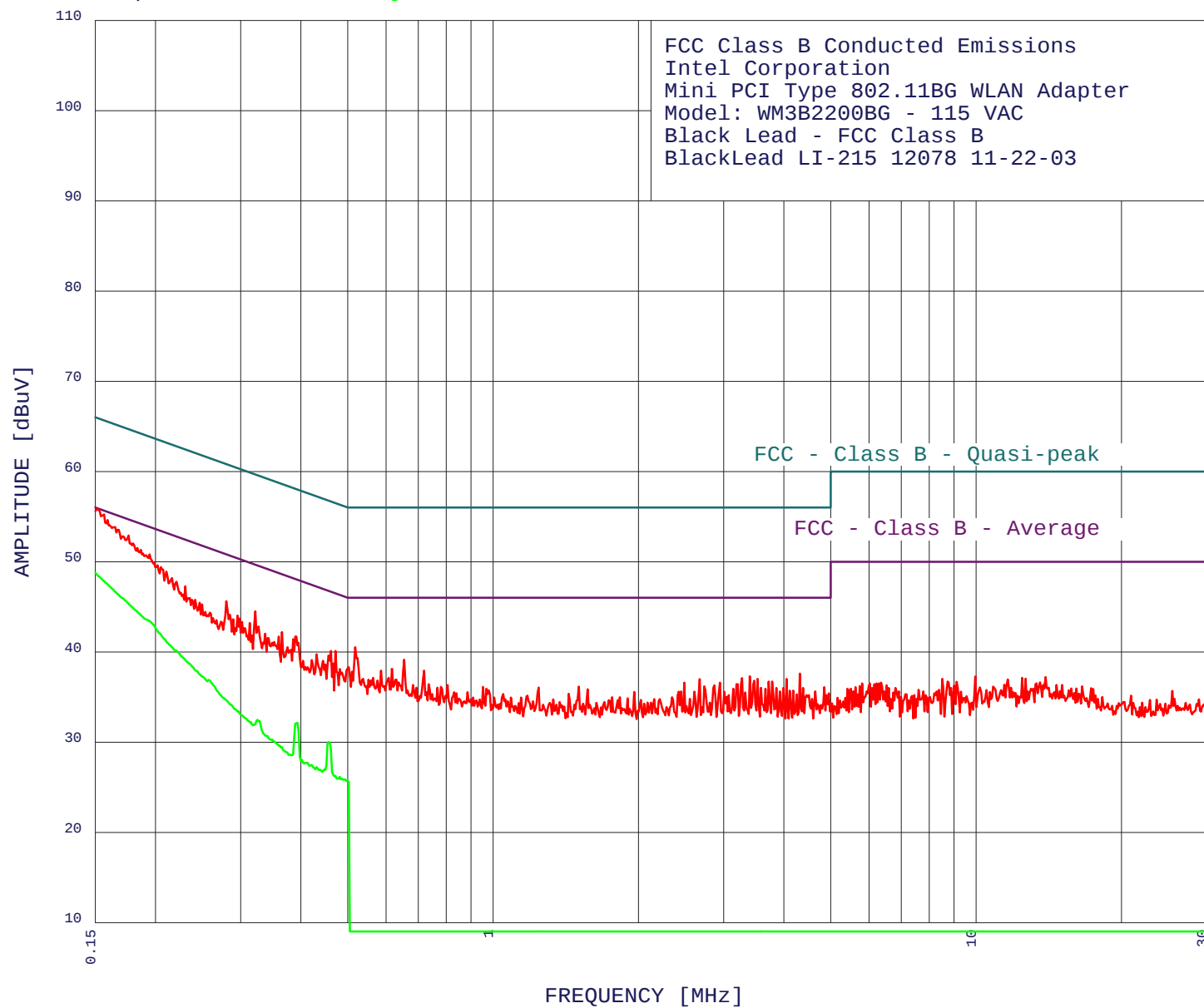
CONDUCTED EMISSIONS

DATA SHEETS

EMISSION LEVEL [dBuV] PEAK
Graph for Peak & Average

6/5/2004

9:59:35




**COMPATIBLE
ELECTRONICS**

6/5/2004

9:59:35

FCC Class B Conducted Emissions
 Intel Corporation
 Mini PCI Type 802.11BG WLAN Adapter
 Model: WM3B2200BG - 115 VAC
 Black Lead - FCC Class B
 Black Lead LI-215 12078 11-22-03
 TEST ENGINEER : Kyle Fujimoto

43 highest peaks above -50.00 dB of EN 55022 - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.322	44.51	49.66	-5.16**
2	0.230	47.27	52.43	-5.16**
3	0.280	45.63	50.81	-5.18**
4	0.518	40.51	46.00	-5.49
5	0.391	41.71	48.03	-6.33**
6	0.296	44.02	50.36	-6.35**
7	0.471	40.11	46.49	-6.38**
8	0.365	42.21	48.61	-6.40**
9	0.250	45.25	51.77	-6.52**
10	0.461	40.11	46.67	-6.56**
11	0.313	43.21	49.88	-6.67**
12	0.385	41.41	48.16	-6.75**
13	0.302	43.31	50.19	-6.88**
14	0.655	39.12	46.00	-6.88
15	0.290	43.62	50.54	-6.92**
16	0.360	41.71	48.73	-7.03**
17	0.338	42.01	49.26	-7.26**
18	0.431	39.71	47.24	-7.53**
19	0.343	41.51	49.13	-7.63**
20	0.502	38.31	46.00	-7.69**
21	0.466	38.71	46.58	-7.87**
22	0.375	40.51	48.38	-7.87**
23	0.618	38.12	46.00	-7.88
24	0.445	39.01	46.98	-7.96**
25	0.720	37.92	46.00	-8.08
26	0.586	37.92	46.00	-8.08
27	0.481	38.11	46.32	-8.21**
28	0.421	39.11	47.42	-8.31**
29	4.316	37.61	46.00	-8.39
30	3.401	37.31	46.00	-8.69
31	0.608	37.12	46.00	-8.88
32	0.564	37.11	46.00	-8.89
33	3.277	37.10	46.00	-8.90
34	4.050	37.01	46.00	-8.99
35	3.529	37.01	46.00	-8.99
36	2.679	36.99	46.00	-9.01
37	3.474	36.81	46.00	-9.19
38	3.781	36.71	46.00	-9.29
39	3.722	36.71	46.00	-9.29
40	2.948	36.60	46.00	-9.40
41	2.488	36.58	46.00	-9.42
42	0.735	36.42	46.00	-9.58
43	3.209	36.40	46.00	-9.60



**COMPATIBLE
ELECTRONICS**

6/5/2004

9:59:35

FCC Class B Conducted Emissions
Intel Corporation
Mini PCI Type 802.11BG WLAN Adapter
Model: WM3B2200BG - 115 VAC
Black Lead - FCC Class B
Black Lead LI-215 12078 11-22-03
TEST ENGINEER : Kyle Fujimoto

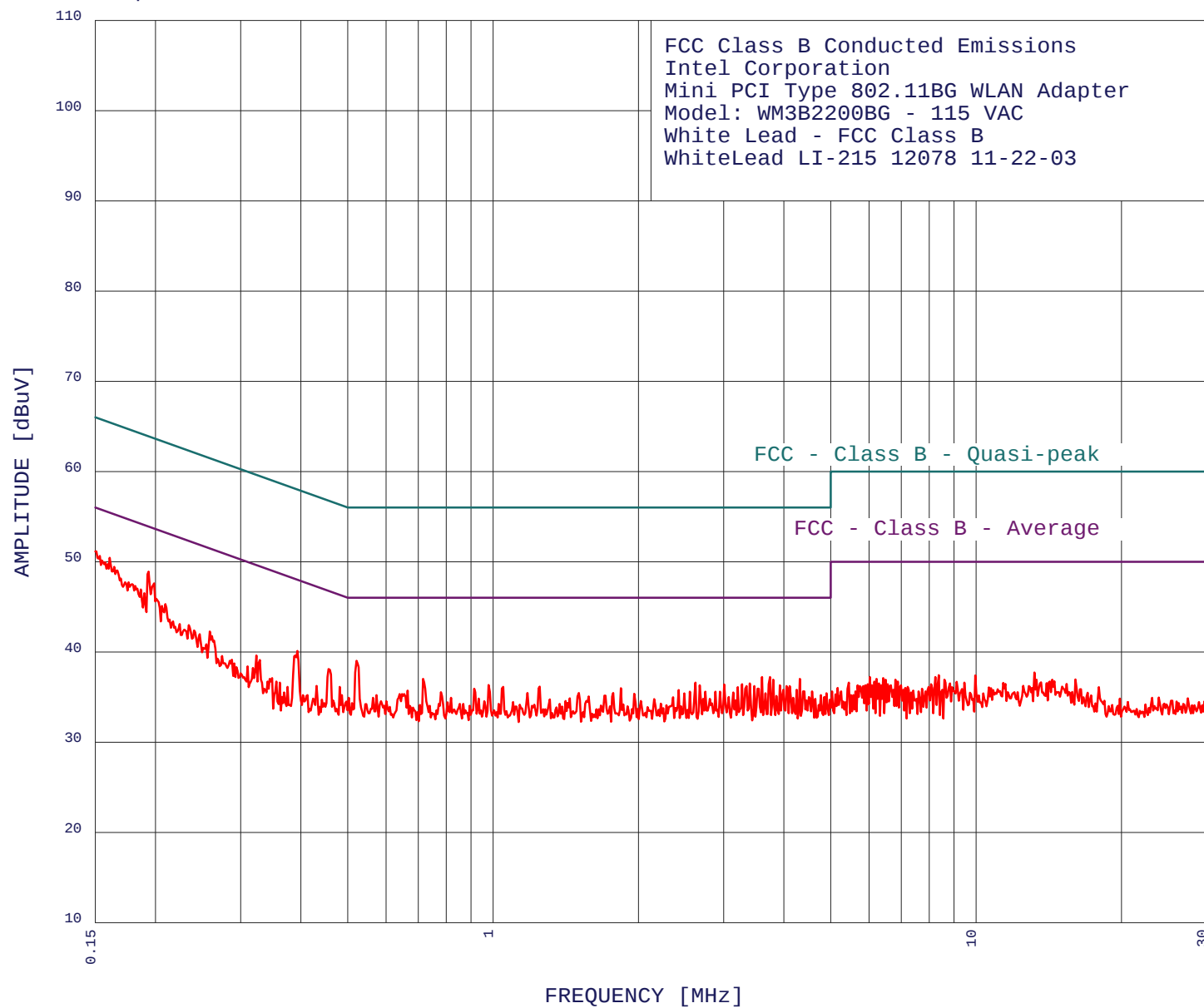
23 highest peaks above -50.00 dB of EN 55022 - Class B - Average limit line

Peak criteria : 0.00 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.221	40.15	52.78	-12.64
2	0.258	36.89	51.51	-14.62
3	0.393	32.14	47.99	-15.85
4	0.457	30.00	46.76	-16.76
5	0.325	32.48	49.57	-17.10
6	0.329	32.33	49.48	-17.16
7	0.315	32.22	49.84	-17.62
8	0.348	30.28	49.00	-18.72
9	0.362	29.61	48.69	-19.08
10	0.365	29.47	48.61	-19.14
11	0.379	28.62	48.29	-19.68
12	0.402	28.03	47.81	-19.78
13	0.413	27.72	47.59	-19.87
14	0.447	26.97	46.93	-19.96
15	0.421	27.45	47.42	-19.97
16	0.431	27.21	47.24	-20.03
17	0.440	26.92	47.06	-20.14
18	0.481	26.15	46.32	-20.17
19	0.471	26.25	46.49	-20.24
20	0.492	25.87	46.14	-20.27
21	0.486	25.93	46.23	-20.30
22	0.500	25.70	46.01	-20.30
23	0.476	25.98	46.40	-20.42

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

6/5/2004 10:04:19





6/5/2004

10:04:19

FCC Class B Conducted Emissions
 Intel Corporation
 Mini PCI Type 802.11BG WLAN Adapter
 Model: WM3B2200BG - 115 VAC
 White Lead - FCC Class B
 White Lead LI-215 12078 11-22-03
 TEST ENGINEER : Kyle Fujimoto

43 highest peaks above -50.00 dB of EN 55022 - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.194	48.90	53.88	-4.99
2	0.161	50.42	55.43	-5.00
3	0.199	47.59	53.67	-6.07
4	0.521	39.01	46.00	-6.99
5	0.189	46.50	54.06	-7.56
6	0.393	40.11	47.99	-7.88
7	0.210	45.28	53.23	-7.94
8	0.457	38.11	46.76	-8.65
9	3.741	37.21	46.00	-8.79
10	3.605	37.21	46.00	-8.79
11	0.716	37.02	46.00	-8.98
12	4.316	37.01	46.00	-8.99
13	3.800	36.91	46.00	-9.09
14	0.259	42.25	51.47	-9.22
15	0.234	42.97	52.30	-9.33
16	2.624	36.59	46.00	-9.41
17	3.401	36.51	46.00	-9.49
18	3.277	36.40	46.00	-9.60
19	3.011	36.40	46.00	-9.60
20	0.979	36.33	46.00	-9.67
21	3.924	36.31	46.00	-9.69
22	2.679	36.29	46.00	-9.71
23	4.114	36.21	46.00	-9.79
24	4.050	36.21	46.00	-9.79
25	3.474	36.21	46.00	-9.79
26	3.346	36.21	46.00	-9.79
27	1.249	36.14	46.00	-9.86
28	1.049	36.13	46.00	-9.87
29	3.209	36.10	46.00	-9.90
30	0.247	41.96	51.86	-9.90
31	0.324	39.61	49.62	-10.01
32	1.840	35.96	46.00	-10.04
33	0.914	35.93	46.00	-10.07
34	3.547	35.91	46.00	-10.09
35	4.249	35.81	46.00	-10.19
36	3.987	35.81	46.00	-10.19
37	0.481	36.11	46.32	-10.21
38	2.423	35.78	46.00	-10.22
39	0.665	35.72	46.00	-10.28
40	0.329	39.11	49.48	-10.38
41	4.576	35.61	46.00	-10.39
42	4.408	35.61	46.00	-10.39
43	2.948	35.60	46.00	-10.40