

*FCC PART 15, SUBPART B and SUBPART E
TEST REPORT**for*INTEL MINI PCI TYPE 3A802.11 ABG
WIRELESS LAN ADAPTER
FOR USE IN THE DELL LAPTOP AGENCY #: PP17L

MODEL: WM3A2915ABG

Prepared for

DELL COMPUTER CORPORATION
ONE DELL WAY
ROUND ROCK, TEXAS 78682

Prepared by: _____

KYLE FUJIMOTO

Approved by: _____

MICHAEL CHRISTENSEN

COMPATIBLE ELECTRONICS INC.
114 OLINDA DRIVE
BREA, CALIFORNIA 92823
(714) 579-0500

DATE: APRIL 7, 2005

	REPORT BODY	APPENDICES					TOTAL
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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 3A 802.11 ABG Wireless LAN Adapter
for use in the Dell Laptop Agency Series Number: PP17L
Model: WM3A2915ABG
S/N: N/A

Product Description: The product is a wireless Mini PCI card used for the Dell Computer Corporation Laptop Agency Series Number: PP17L.

Modifications: The EUT was not modified during the testing.

Manufacturer: Dell Computer Corporation
One Dell Way
Round Rock, Texas 78682

Test Dates: March 9, 10, and 11, 2005

Test Specifications: EMI requirements
Limits: CFR Title 47, Part 15, Subpart B, **Class B**; and CFR Title 47, Part 15, Subpart E

Test Procedure: ANSI C63.4: 2003

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 with the Class B limits of CFR Title 47, Part 15, Subpart B and the limits of CFR Title 47, Part 15, Subpart E
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 E
3	Spurious Radiated RF Emissions, 10 kHz – 30 MHz and 1000 MHz – 40000 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 E
4	Fundamental and Emissions produced by the intentional radiator in non-restricted bands, 10 kHz – 40 GHz	Complies with the limits of CFR Title 47, Part 15, Subpart E
5	Emissions produced by the intentional radiator in restricted bands, 10 kHz – 40 GHz	Complies with the Class B limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart E
6	Emission Bandwidth – 26 dB for UNII devices	Complies with the requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(1) and (a)(2)
7	Peak Power for UNII devices	Complies with the requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(1) and (a)(2)
8	Peak Power Spectral Density for UNII devices	Complies with the requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(1) and (a)(2)
9	Peak Excursion for UNII devices	Complies with the requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(6)
10	As the device operates in the 5.15 – 5.25 GHz band, the antenna must be integral to the device.	The antenna is integral to the laptop computer.

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the Intel Mini PCI Type 3A 802.11 ABG Wireless LAN Adapter (for use in the Dell Laptop Agency Series Number: PP17L) Model: WM3A2915ABG. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2003. 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 Class B specification limits defined by CFR Title 47, Part 15, Subpart B; and Subpart E.

Note: For the unintentional radiator portion of the test for radiated emissions from 30 MHz to 1000 MHz, the EUT was within the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart **B**.

Note: The 5.15–5.25 GHz and 5.25–5.35 GHz bands are applicable to this report; other bands of operation (2400 MHz to 2483.5 MHz and 5725 MHz to 5850 MHz) are documented in the Compatible Electronics, Inc. report number **B50326D3**.

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 locations

1) 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

Dell Computer Corporation

Jason Limoges Regulatory Engineer

Compatible Electronics, Inc.

Benigno Chavez	Test Engineer
Arnold Gaffud	Sr. Test Engineer
Kyle Fujimoto	Test Engineer
Michael Christensen	Lab Manager

2.4 Date Test Sample was Received

The test sample was received on March 7, 2005.

2.5 Disposition of the Test Sample

The sample has not been returned to Dell Computer Corporation as of April 7, 2005.

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 E	FCC Rules - Radio frequency devices (including digital devices) – Unlicensed National Information Infrastructure Devices
ANSI C63.4 2003	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 3A 802.11ABG Wireless LAN Adapter (for use in the Dell Laptop Agency Series Number: PP17L) Model: WM3A2915ABG was directly connected to the laptop's mini PCI port at the bottom of the laptop. The laptop was also connected to the printer, modem, and AC Adapter via its parallel, modem, and power ports, respectively. The EUT was either continuously transmitting or receiving depending on the test being performed. 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 1.5 meter braid and foil shielded cable connecting the laptop to the modem. It has a D-9 pin metallic connector at the laptop end and a D-25 pin metallic connector at the modem end. The cable was bundled to a length of 96 centimeters. The shield of the cable was grounded to the chassis via the connectors.
- Cable 2** This is a 1.4 meter braid and foil shielded cable connecting the laptop to the printer. It has a Centronics metallic type connector at the printer end and a D-25 pin metallic connector at the laptop end. The cable was bundled to a length of 75 centimeters. The shield of the cable was grounded to the chassis via the connectors.
- Cable 3** This is a 1.7 meter unshielded cable connecting the laptop to the AC Adapter. It has a 5.5 mm power connector at the laptop end and is hard wired into the laptop. The cable was bundled to a length of 1.1 meters. The cable had a molded ferrite at the laptop end.

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 3A 802.11 ABG Wireless LAN Adapter (EUT)	INTEL CORPORATION	WM3A2915ABG	N/A	E2K5HCKT
EUT Sub-Assemblies				
Main Antenna	HITACHI CABLE	HMT01-DL01	N/A	N/A
Auxiliary Antenna	HITACHI CABLE	HMT01-DL01	N/A	N/A
Host Equipment List				
Laptop	DELL COMPUTER CORPORATION	PP17L	N/A	DoC
Printer	CITIZEN	LSP-10	118439-72	DLK66TLSP-10
Modem	HAYES	231AA	A07031003480	BFJ9D9231AA
AC Adapter for Laptop	DELL COMPUTER CORPORATION	PA-1650-05D	N/A	N/A

5.2 EMI Test Equipment for Brea Facility – Part 1

EQUIPMENT TYPE	MANU- FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
Radiated Emissions Manual Test – Radiated	Compatible Electronics	N/A	N/A	N/A	N/A
Conducted Emissions Test Program	Compatible Electronics	N/A	N/A	N/A	N/A
Spectrum Analyzer – Main Section	Hewlett Packard	8566B	3638A08768	June 24, 2004	June 24, 2005
Spectrum Analyzer – Display Section	Hewlett Packard	85662A	3701A22262	June 24, 2004	June 24, 2005
Quasi-Peak Adapter	Hewlett Packard	85650A	2811A01363	June 24, 2004	June 24, 2005
Microwave Preamplifier	Com-Power	PA-122	25196	February 3, 2005	February 3, 2006
Biconical Antenna	Com Power	AB-900	15250	March 11, 2005	March 11, 2006
Log Periodic Antenna	Com Power	AL-100	16060	September 27, 2004	Sept. 27, 2005
Computer	Hewlett Packard	D5251A 888	US74458128	N/A	N/A
Monitor	Hewlett Packard	D5258A	DK74889705	N/A	N/A
LISN	Com Power	LI-215	12090	October 26, 2004	Oct. 26, 2005
LISN	Com Power	LI-215	12076	October 26, 2004	Oct. 26, 2005
Transient Limiter	Seaward	252A910	K39-0220	September 20, 2004	Sept. 20, 2005

5.3 EMI Test Equipment for Brea Facility – Part 2

EQUIPMENT TYPE	MANU- FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. DUE DATE
EMI Receiver	Rohde & Schwarz	ESIB40	100172	October 28, 2004	Oct. 28, 2005
Loop Antenna	Com-Power	AL-130	17089	September 3, 2004	Sept. 3, 2005
Horn Antenna	Com-Power	AH826	0071957	November 5, 2003	Nov. 5, 2005
Horn Antenna	Antenna Research	MWH-2640/B	1011	November 5, 2003	Nov. 5, 2005
Horn Antenna	Antenna Research	DRG-118/A	1053	January 16, 2004	Jan. 16, 2006
Microwave Preamplifier	Com Power	PA-122	25195	February 25, 2005	Feb. 25, 2006
Microwave Preamplifier	Com Power	PA-840	711013	February 25, 2005	Feb. 25, 2006
RF Peak Power Meter / Analyzer	Boonton Electronics Corp.	4500A-01-30	1282	February 23, 2004	Feb. 23, 2006
Peak Power Sensor	Boonton Electronics Corp.	57318	3723	February 23, 2004	Feb. 23, 2006
RF Attenuator	Weinschel Corporation	2	BJ6396	August 12, 2004	August 12, 2005

6. TEST SITE DESCRIPTION

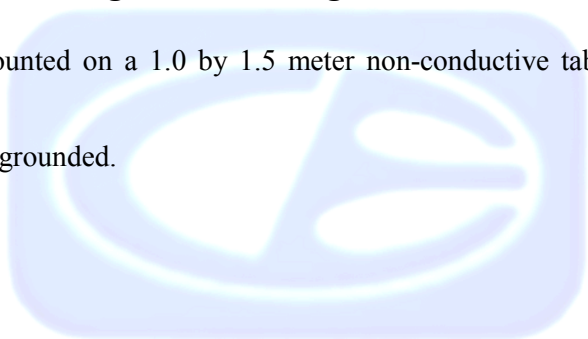
6.1 Test Facility Description

Please refer to section 2.1 and 8.1 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 main antenna has a gain of 3.9 dBi and the auxiliary antenna has a gain of 4.6 dBi..



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 transient limiter 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: 2003. 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 limits of CFR Title 47, Part 15, Subpart E for conducted emissions.

8.1.2 Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer 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-103 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 40 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer 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 manually by narrowing the video filter down to 10 Hz and putting the sweep time on AUTO on the EMI Receiver to keep the amplitude reading calibrated.

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 40 GHz	1 MHz	Horn Antenna

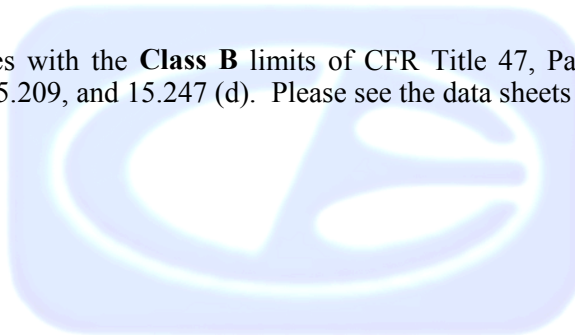
The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2003. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a 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 the final data.

Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.209, and 15.247 (d). Please see the data sheets located in Appendix E.



8.2 Emission Bandwidth – 20 and 26 dB for UNII Devices

The transmitter output is connected to the EMI Receiver. The RBW is set to 1% to 3% of the emission bandwidth. The VBW is set greater than the RBW. The sweep time is coupled. The view button was used to capture the emission. The widest width of the emission that is 20 or 26 dB down from the peak of the emission was measured.

Test Results:

The EUT complies with the requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(1) and (a)(2).

8.3 Peak Output Power for UNII Devices

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 requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(1) and (a)(2).

8.4 Peak Power Spectral Density for UNII Devices

The EUT is directly connected to the EMI Receiver.

For FCC: The RBW was set to 1 MHz. The VBW was set greater than the RBW. The video averaging was turned on. The Peak Power Spectral Density was the highest level found across the emission in any 1 MHz band after 100 sweeps of video averaging.

For RSS-210: The RBW and VBW was set to 1 MHz. The video averaging was turned off.

For FCC: The limit is +4 dBm / MHz for the 5150 MHz to 5250 MHz band, and +11 dBm / MHz for the 5250 MHz to 5350 MHz band.

For RSS-210: The limit is +10 dBm / MHz for the 5150 MHz to 5250 MHz band, and +11 dBm / MHz for the 5250 MHz to 5350 MHz band.

Test Results:

The EUT complies with the requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(1) and (a)(2).

8.5 Peak Excursion for UNII Devices

The EUT was directly connected to the EMI Receiver.

The first trace was established using an RBW and VBW of 1 MHz. The second trace was established using an RBW of 1 MHz and a VBW of 30 kHz. The delta marker function was used to determine that the difference between the two traces in any 1 MHz band on any frequency was not greater than 13 dB.

Test Results:

The EUT complies with the requirements of CFR Title 47, Part 15, Subpart E, section 15.407 (a)(6).

8.6 RF Band Edges

The RF band edges were taken at the 5150 MHz and 5350 MHz. The readings taken were also averaged manually by narrowing the video filter down to 10 Hz and putting the sweep time on AUTO on the spectrum analyzer to keep the amplitude reading calibrated. Data sheets are included in Appendix E, which compares the reading from the spectrum analyzer to the spec limit.

Test Results:

The EUT complies with the relevant requirements of FCC Title 47, Part 15, Subpart E. The RF power at the band edges at 5150 MHz and 5350 MHz meet the limits of section FCC Title 47, Part 15, Subpart C, Section 15.209. Please see the data sheets located in Appendix E.

9. CONCLUSIONS

The Intel Mini PCI Type 3A 802.11 ABG Wireless LAN Adapter (for use in the Dell Laptop Agency Series Number: PP17L) Model: WM3A2915ABG meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B and Subpart E.

Note: For the unintentional radiator portion of the test for radiated emissions from 30 MHz to 1000 MHz, the EUT was within the **Class B** specification limits defined in CFR Title 47, Part 15, Subpart B.

Note: The 5.15–5.25 GHz and 5.25–5.35 GHz bands are applicable to this report; other bands of operation (2400 MHz to 2483.5 MHz and 5725 MHz to 5850 MHz) are documented in the Compatible Electronics, Inc. report number **B50326D3**.

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

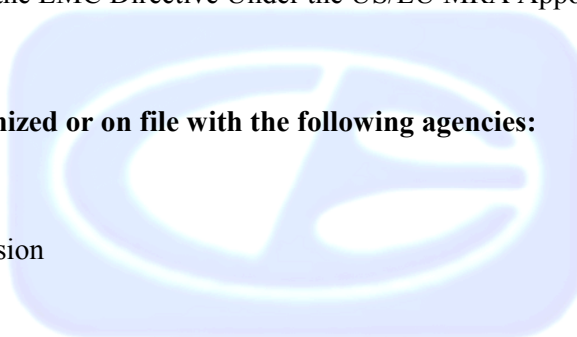
Conformity Assessment Body for the EMC Directive Under the US/EU MRA Appointed by NIST

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

Federal Communications Commission

Industry Canada

Radio-Frequency Technologies (Competent Body)



APPENDIX B

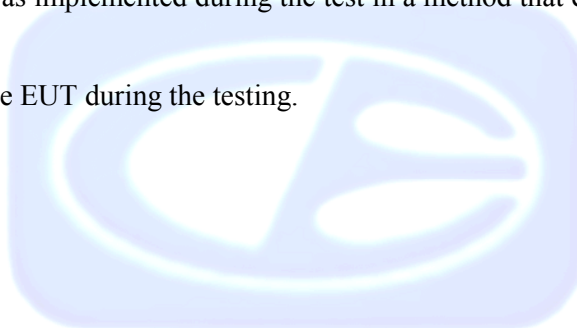
MODIFICATIONS TO THE EUT

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and Subpart E 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 3A 802.11 ABG Wireless LAN Adapter
(for use in the Dell Laptop Agency Series Number: PP17L)
Model: WM3A2915ABG
S/N: N/A

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

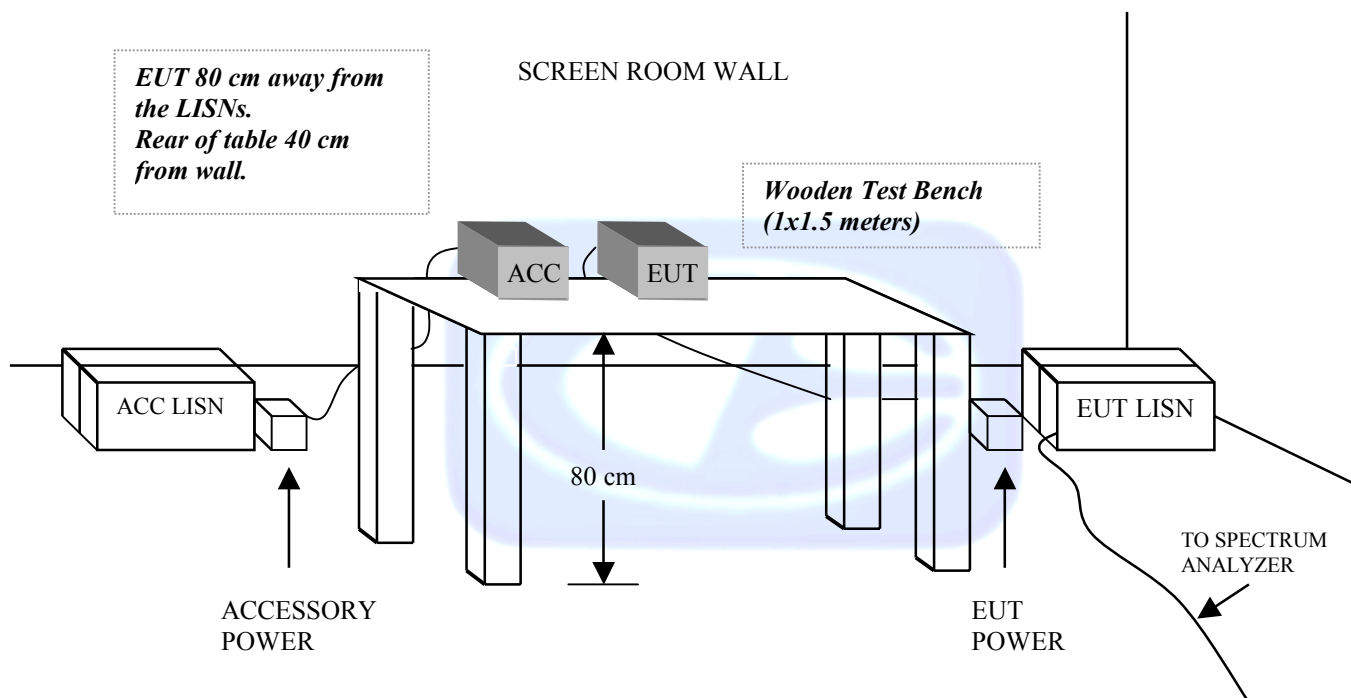
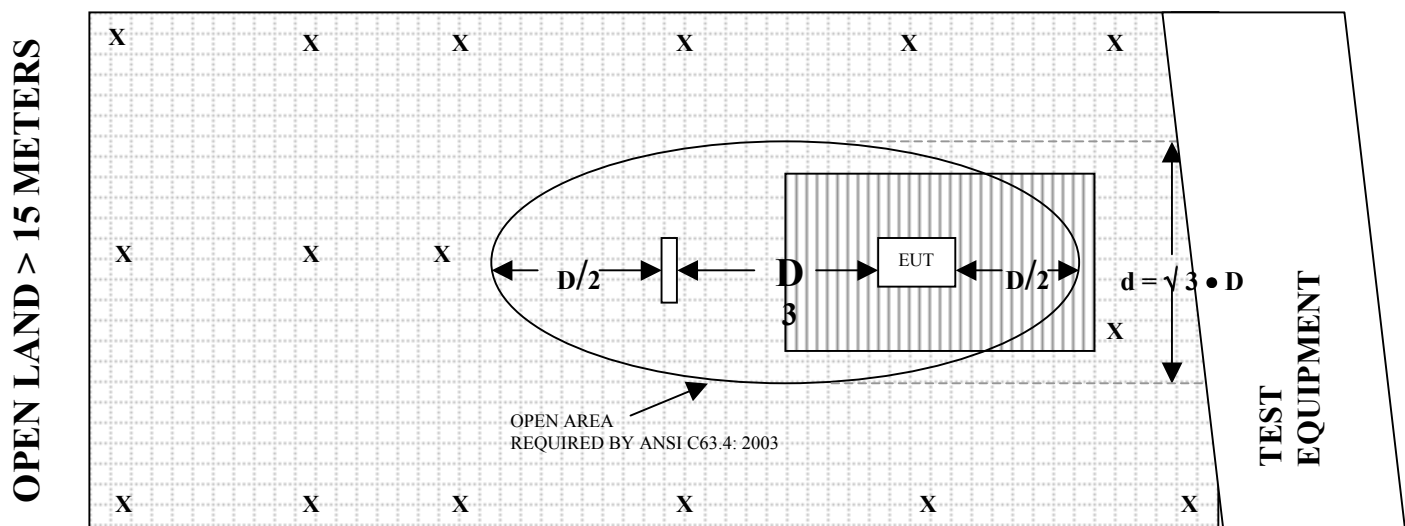
FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

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

COM-POWER AB-900**BICONICAL ANTENNA****S/N: 15250****CALIBRATION DATE: MARCH 11, 2005**

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	10.90	120	13.10
35	10.90	125	12.40
40	10.90	140	11.90
45	10.30	150	11.80
50	11.40	160	13.30
60	10.40	175	15.40
70	7.40	180	14.60
80	6.20	200	15.70
90	8.20	250	16.50
100	10.10	300	19.20

COM-POWER AL-100

LOG PERIODIC ANTENNA

S/N: 16060

CALIBRATION DATE: SEPTEMBER 27, 2004

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
300	12.30	700	19.20
400	14.10	800	21.30
500	15.20	900	21.90
600	15.90	1000	25.20

COM-POWER PA-103**PREAMPLIFIER**

S/N: 1582

CALIBRATION DATE: FEBRUARY 3, 2005

FREQUENCY (MHz)	FACTOR (dB)	FREQUENCY (MHz)	FACTOR (dB)
30	33.2	300	33.0
40	33.0	350	32.8
50	33.1	400	32.8
60	33.0	450	32.8
70	33.2	500	32.5
80	33.2	550	32.5
90	33.1	600	32.4
100	33.2	650	32.4
125	33.1	700	32.3
150	33.0	750	32.2
175	33.0	800	32.2
200	33.0	850	32.4
225	33.0	900	31.8
250	33.0	950	32.3
275	32.9	1000	32.0

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

S/N: 25195

CALIBRATION DATE: FEBRUARY 25, 2005

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	31.45	6.0	31.35
1.1	31.34	6.5	31.10
1.2	31.29	7.0	30.54
1.3	31.28	7.5	29.72
1.4	31.25	8.0	29.22
1.5	31.21	8.5	28.75
1.6	31.14	9.0	28.67
1.7	31.07	9.5	29.14
1.8	31.12	10.0	30.12
1.9	31.04	11.0	29.30
2.0	31.20	12.0	29.86
2.5	31.56	13.0	30.57
3.0	32.17	14.0	29.90
3.5	32.56	15.0	30.14
4.0	32.51	16.0	31.13
4.5	32.52	17.0	29.97
5.0	32.33	18.0	28.77
5.5	31.60		

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

S/N: 711013

CALIBRATION DATE: FEBRUARY 25, 2005

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	27.193	29.5	28.341
18.5	26.721	30.0	28.166
19.0	25.938	30.5	28.259
19.5	25.678	31.0	27.227
20.0	25.192	31.5	27.134
20.5	24.643	32.0	27.349
21.0	23.898	32.5	26.701
21.5	24.261	33.0	26.965
22.0	24.544	33.5	27.326
22.5	24.984	34.0	26.536
23.0	25.008	34.5	26.753
23.5	25.268	35.0	26.133
24.0	25.697	35.5	25.759
24.5	26.304	36.0	25.538
25.0	26.716	36.5	26.126
25.5	26.939	37.0	26.719
26.0	27.009	37.5	26.713
26.5	27.299	38.0	26.035
27.0	27.931	38.5	24.438
27.5	27.516	39.0	24.013
28.0	27.402	39.5	23.474
28.5	27.457	40.0	24.467
29.0	27.926		

ANTENNA RESEARCH DRG-118/A**HORN ANTENNA**

S/N: 1053

CALIBRATION DATE: JANUARY 16, 2004

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
1.0	24.4	10.0	38.7
1.5	25.2	10.5	39.0
2.0	28.2	11.0	38.9
2.5	28.5	11.5	41.3
3.0	30.1	12.0	40.5
3.5	31.0	12.5	40.0
4.0	31.2	13.0	40.2
4.5	31.9	13.5	40.5
5.0	33.2	14.0	41.6
5.5	33.7	14.5	44.8
6.0	34.3	15.0	41.4
6.5	35.0	15.5	39.2
7.0	36.7	16.0	39.4
7.5	37.3	16.5	40.9
8.0	37.1	17.0	42.6
8.5	37.3	17.5	45.1
9.0	37.7	18.0	41.7
9.5	38.6		

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

S/N: 17089

CALIBRATION DATE: SEPTEMBER 3, 2004

FREQUENCY (MHz)	MAGNETIC (dB/m)	ELECTRIC (dB/m)
0.009	-40.8	10.7
0.01	-40.9	10.6
0.02	-41.8	9.7
0.05	-42.0	9.5
0.07	-41.5	10.0
0.1	-41.7	9.8
0.2	-44.1	7.4
0.3	-41.6	9.9
0.5	-41.5	10.0
0.7	-41.4	10.1
1	-41.0	10.5
2	-40.6	10.9
3	-40.8	10.7
4	-41.0	10.5
5	-40.4	11.1
10	-40.7	10.8
15	-41.6	9.9
20	-41.3	10.2
25	-43.0	8.5
30	-42.6	8.9

COM-POWER AH826**HORN ANTENNA****S/N: 0071957****CALIBRATION DATE: NOVEMBER 05, 2003**

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
18.0	33.3	22.5	32.9
18.5	32.9	23.0	33.0
19.0	32.7	23.5	33.6
19.5	32.6	24.0	33.6
20.0	32.7	24.5	33.5
20.5	33.0	25.0	33.5
21.0	33.0	25.5	33.7
21.5	33.2	26.0	34.1
22.0	32.9	26.5	34.5

ANTENNA RESEARCH MWH-2640/B**HORN ANTENNA**

S/N: 1011

CALIBRATION DATE: NOVEMBER 05, 2003

FREQUENCY (GHz)	FACTOR (dB)	FREQUENCY (GHz)	FACTOR (dB)
26.5	36.0	33.5	36.0
27.0	36.0	34.0	36.8
27.5	35.6	34.5	37.3
28.0	35.9	35.0	37.7
28.5	35.8	35.5	37.8
29.0	36.0	36.0	38.2
29.5	35.9	36.5	38.3
30.0	36.4	37.0	38.2
30.5	36.4	37.5	38.6
31.0	36.8	38.0	38.6
31.5	36.5	38.5	39.1
32.0	36.5	39.0	38.8
32.5	36.2	39.5	39.0
33.0	36.4	40.0	39.5



FRONT VIEW

DELL COMPUTER CORPORATION
INTEL MINI PCI TYPE 3A 802.11 ABG WIRELESS LAN ADAPTER
FOR USE IN THE DELL LAPTOP AGENCY SERIES NUMBER: PP17L
MODEL: WM3A2915ABG
FCC SUBPART B AND E – RADIATED EMISSIONS

**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

DELL COMPUTER CORPORATION
INTEL MINI PCI TYPE 3A 802.11 ABG WIRELESS LAN ADAPTER
FOR USE IN THE DELL LAPTOP AGENCY SERIES NUMBER: PP17L
MODEL: WM3A2915ABG
FCC SUBPART B AND E – RADIATED EMISSIONS

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**FRONT VIEW**

DELL COMPUTER CORPORATION
INTEL MINI PCI TYPE 3A 802.11 ABG WIRELESS LAN ADAPTER
FOR USE IN THE DELL LAPTOP AGENCY SERIES NUMBER: PP17L
MODEL: WM3A2915ABG
FCC SUBPART B AND E – CONDUCTED EMISSIONS

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

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**REAR VIEW**

DELL COMPUTER CORPORATION
INTEL MINI PCI TYPE 3A 802.11 ABG WIRELESS LAN ADAPTER
FOR USE IN THE DELL LAPTOP AGENCY SERIES NUMBER: PP17L
MODEL: WM3A2915ABG
FCC SUBPART B AND E – CONDUCTED EMISSIONS

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APPENDIX E

DATA SHEETS

RADIATED EMISSIONS

DATA SHEETS

Intel Corporation

Model: WM3A2915ABG

With Hitachi Antenna

Gain : 1.5 Peak Power: 11.53 dBm Avg. Power: 5.18 dBm

Date: 3/09/05

Lab: B

Tested By: Kyle Fujimoto

[illegible]

Intel Corporation

Model: WM3A2915ABG

With Hitachi Antenna

Gain : 1.5 Peak Power: 11.53 dBm Avg. Power: 5.18 dBm

Date: 3/09/05

Lab: B

Tested By: Kyle Fujimoto

[illegible]

Intel Corporation

Intel Mini PCI Type 3A 802.11ABG Wireless LAN Adapter

Model: WM3A2915ABG

Configuration: Dell Latitude Laptop D510 Agency Series Number: PP17L -- Main Port

With Hitachi Antenna

Channel 48 - UNII Mode

Transmit Mode

Date: 3/09/05

Lab: B

Tested By: Kyle Fujimoto

Gain : 1.5 Peak Power: 11.10 dBm Avg. Power: 4.73 dBm

[illegible]

Intel Corporation

Model: WM3A2915ABG

With Hitachi Antenna

Transmit Mode

Lab: B

Tested By: Kyle Fujimoto

Gain : 1.5 Peak Power: 11.10 dBm Avg. Power: 4.73 dBm

[illegible]

Intel Corporation

Model: WM3A2915ABG

With Hitachi Antenna

Transmit Mode

Lab: B

Tested By: Kyle Fujimoto

Gain : 6.5 Peak Power: 16.02 dBm Avg. Power: 9.73 dBm

[illegible]

Intel Corporation

Intel Mini PCI Type 3A 802.11ABG Wireless LAN Adapter

Model: WM3A2915ABG

Configuration: Dell Latitude Laptop D510 Agency Series Number: PP17L -- Main Port

With Hitachi Antenna

Channel 64 - UNII Mode

Transmit Mode

Date: 3/09/05

Lab: B

Tested By: Kyle Fujimoto

PP17L -- Main Port

Gain : 6.5 Peak Power: 16.16 dBm Avg. Power: 9.73 dBm

[illegible]

Intel Corporation

Model: WM3A2915ABG

With Hitachi Antenna

Gain : 1.5 Peak Power: 11.53 dBm Avg. Power: 5.18 dBm

Date: 3/09/05

Lab: B

Tested By: Kyle Fujimoto

[illegible]

Gain : 1.5 Peak Power: 11.10 dBm Avg. Power: 4.73 dBm

[illegible]

Gain : 6.5 Peak Power: 16.02 dBm Avg. Power: 9.61 dBm

[illegible]

Intel Corporation

Model: WM3A2915ABG

With Hitachi Antenna

Gain : 6.5 Peak Power: 16.16 dBm Avg. Power: 9.73 dBm

Date: 3/09/05

Lab: B

Tested By: Kyle Fujimoto

[illegible]

RSS-210

Intel Corporation

Intel Mini PCI Type 3A 802.11ABG Wireless LAN Adapter

Model: WM3A2915ABG

Configuration: Dell Latitude Laptop D510 Agency Series Number: PP17L -- Main Port

With Hitachi Antenna

Channel 48 - UNII Mode

Receive Mode

Date: 3/09/05

Lab: B

Tested By: Kyle Fujimoto

[illegible]

Intel Corporation

Model: WM3A2915ABG

With Hitachi Antenna

Receive Mode

Lab: B

Tested By: Kyle Fujimoto

[illegible]

Test Location : Compatible Electronics
 Customer : Intel
 Manufacturer : Intel
 Eut name : Intel Mini PCI Type 3A 802.11abg Wi
 Model : WM3A2915ABG
 Serial # : N/A
 Specification : FCC B
 Distance correction factor ($20 * \log(\text{test}/\text{spec})$) : 0.00
 Test Mode : Scan Type: Qualification w/ Hitachi Antenna
 Scan Range: 10 kHz to 1000 MHz (Vertical & Horizontal)
 Mode of Operation (worst case): Transmit
 Test Engineer: Benigno Chavez

Page : 1/1
 Date : 3/11/2005
 Time : 22:13:05
 Lab : A
 Test Distance : 3.0 Meters

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
1H	136.680	50.40	2.84	11.73	32.30	32.67	43.50	-10.83
2H	139.394	51.00	2.90	11.97	32.28	33.59	43.50	-9.91
3V	140.099	49.70	2.91	12.02	32.27	32.35	43.50	-11.15
4V	144.371	50.50	3.00	11.88	32.24	33.13	43.50	-10.37
5H	151.838	55.50	3.08	12.05	32.22	38.42	43.50	-5.08
6H	151.839Qp	48.59	3.08	12.05	32.22	31.51	43.50	-11.99
7H	153.702	51.80	3.07	12.40	32.23	35.04	43.50	-8.46
8H	178.830	53.50	2.92	14.60	32.40	38.61	43.50	-4.89
9H	178.830Qp	50.00	2.92	14.60	32.40	35.11	43.50	-8.39
10H	180.408	54.20	2.92	14.68	32.40	39.40	43.50	-4.10
11H	180.410Qp	49.71	2.92	14.68	32.40	34.91	43.50	-8.59
12V	182.335	46.00	2.93	14.70	32.40	31.24	43.50	-12.26
13V	220.763	47.10	3.08	15.72	32.48	33.42	46.00	-12.58
14H	230.795	56.90	3.15	16.06	32.45	43.66	46.00	-2.34
15H	230.795Qp	53.38	3.15	16.06	32.45	40.14	46.00	-5.86
16V	314.724	44.80	3.66	12.60	32.27	28.79	46.00	-17.21
17H	314.733	50.10	3.66	12.60	32.27	34.09	46.00	-11.91
18H	333.801	43.40	3.74	12.97	32.23	27.88	46.00	-18.12
19V	334.791	42.90	3.74	12.99	32.23	27.40	46.00	-18.60
20H	338.194	47.20	3.76	13.05	32.22	31.78	46.00	-14.22
21H	366.109	49.70	3.97	13.55	32.20	35.01	46.00	-10.99
22V	400.058	48.60	4.30	14.10	32.20	34.80	46.00	-11.20
23H	405.570	46.30	4.36	14.17	32.18	32.65	46.00	-13.35
24H	429.613	46.10	4.60	14.45	32.08	33.08	46.00	-12.92
25H	474.395	49.20	5.00	14.94	32.00	37.14	46.00	-8.86

Intel Corporation

Model: WM3A2915ABG

Date: 3/10/05

Lab: B

Tested By: Kyle Fujimoto

Digital Portion - 1 GHz to 40 GHz

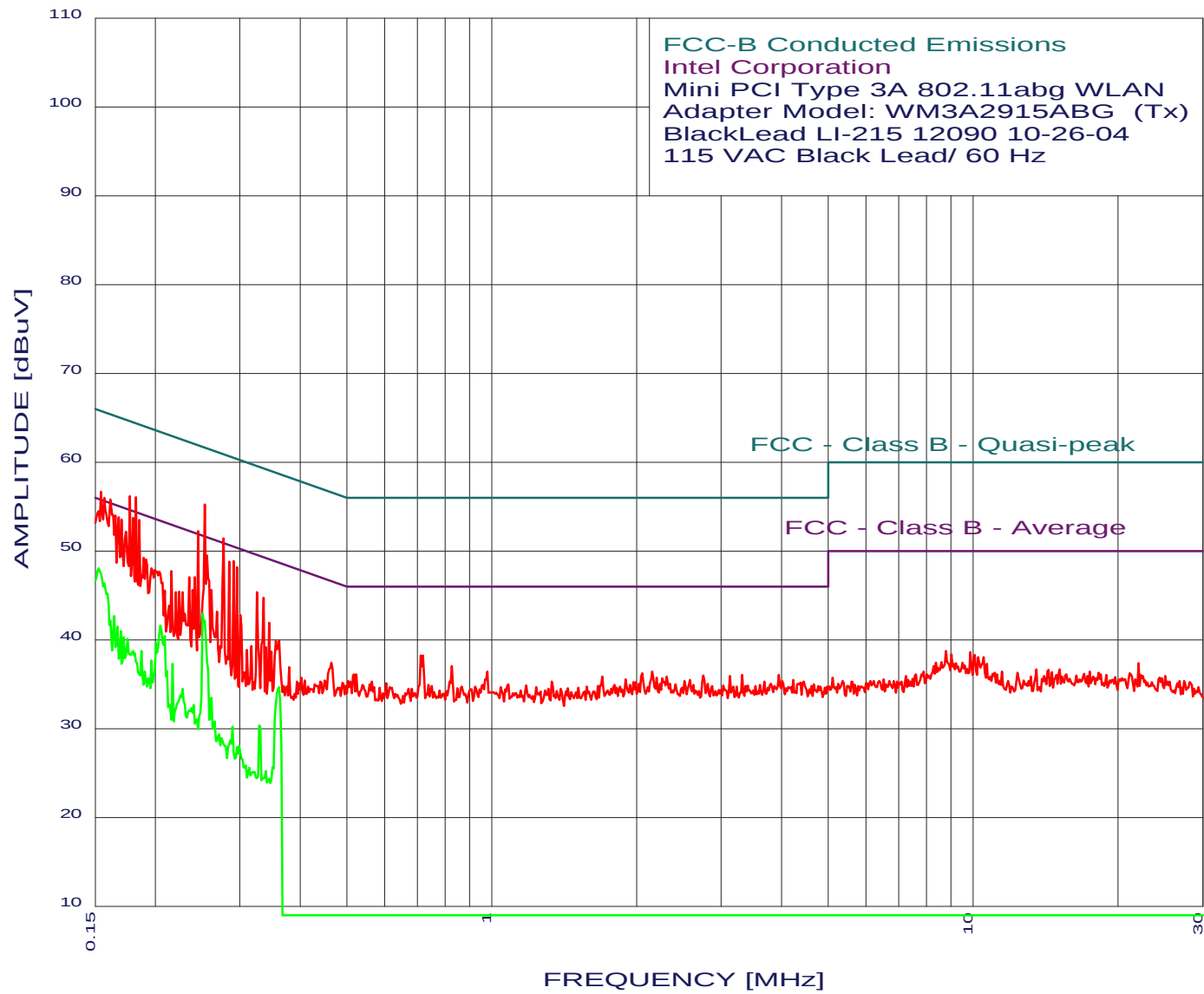
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CONDUCTED EMISSIONS

DATA SHEETS

EMISSION LEVEL [dBuV] PEAK
Graph for Peak & Average

3/15/2005 21:55:20





Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
Model: WM3A2915ABG (Transmit Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

40 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.254	55.20	51.64	3.56*
2	0.183	56.05	54.37	1.68*
3	0.177	56.15	54.63	1.52*
4	0.154	56.66	55.78	0.88*
5	0.277	51.38	50.89	0.49*
6	0.162	55.76	55.38	0.37*
7	0.157	55.96	55.64	0.32*
8	0.246	52.21	51.90	0.30*
9	0.180	53.75	54.50	-0.75*
10	0.185	53.45	54.24	-0.79*
11	0.165	53.96	55.20	-1.25*
12	0.168	53.75	55.07	-1.32*
13	0.170	53.55	54.94	-1.39*
14	0.152	54.46	55.86	-1.40*
15	0.291	48.87	50.49	-1.62*
16	0.285	48.78	50.67	-1.90*
17	0.256	49.50	51.55	-2.05*
18	0.296	48.17	50.36	-2.20*
19	0.174	52.15	54.77	-2.61*
20	0.150	53.16	56.00	-2.84*
21	0.325	45.34	49.57	-4.23*
22	0.336	44.74	49.31	-4.57*
23	0.189	49.24	54.06	-4.81*
24	0.192	49.04	53.97	-4.93*
25	0.242	47.01	52.04	-5.03*
26	0.216	47.73	52.96	-5.23*
27	0.235	47.01	52.25	-5.24*
28	0.197	48.04	53.75	-5.71*
29	0.262	45.59	51.38	-5.78*
30	0.239	45.61	52.12	-6.51*
31	0.345	41.93	49.09	-7.16*
32	0.228	45.32	52.52	-7.20*
33	0.224	45.42	52.65	-7.23*
34	0.221	45.32	52.78	-7.46*
35	0.300	42.76	50.23	-7.47*
36	0.210	45.53	53.23	-7.69*
37	0.720	38.19	46.00	-7.81
38	0.713	38.19	46.00	-7.81
39	0.269	43.19	51.15	-7.97*
40	0.362	39.92	48.69	-8.78*

* Please See the Average Readings on the Next Page and on the Plot



3/15/2005 21:55:20

Intel Corporation
 Mini PCI Type 3A 802.11abg Wireless LAN
 Model: WM3A2915ABG (Transmit Mode)
 With Phycomp Antenna
 TEST ENGINEER : Benigno Chavez

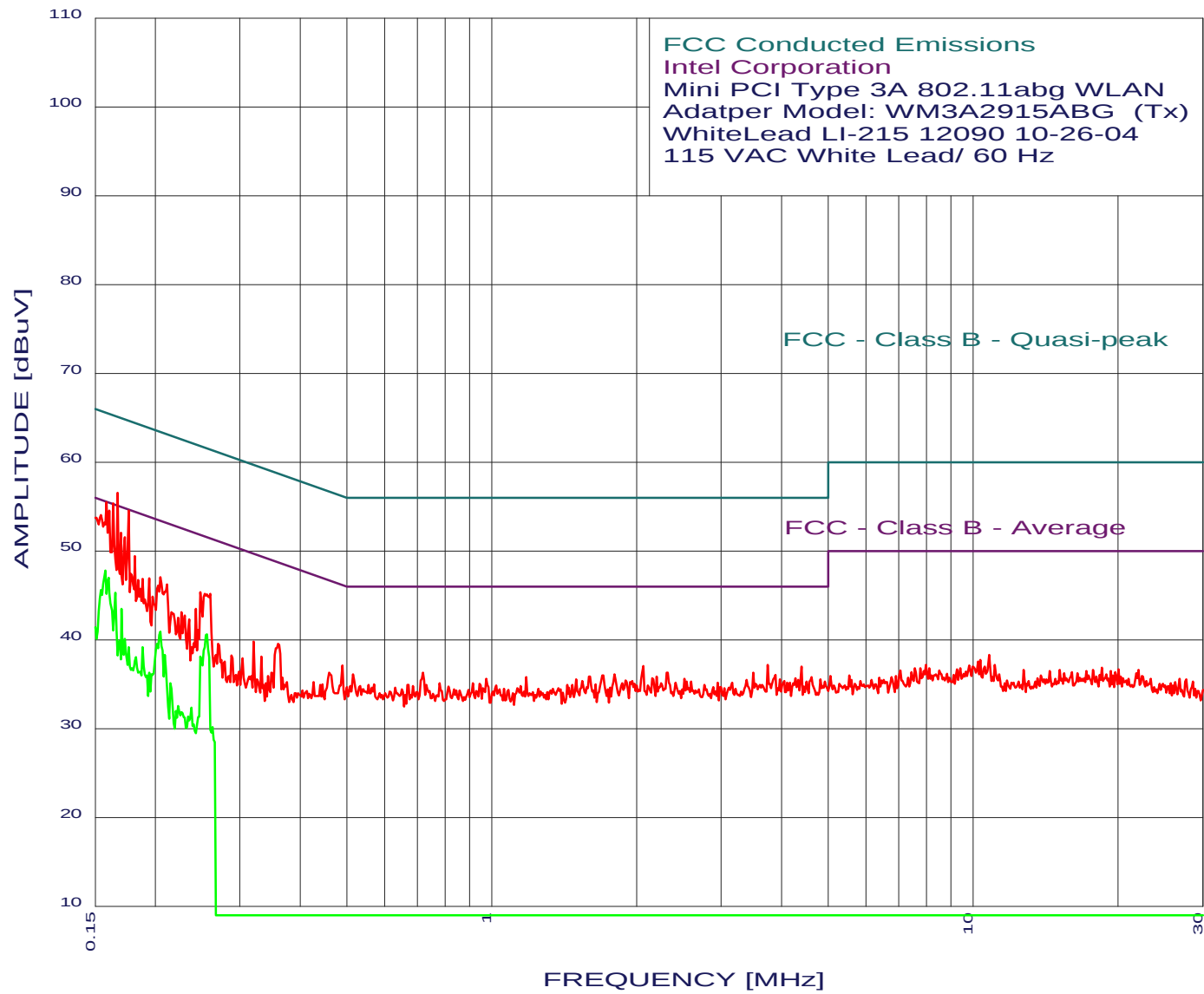
 41 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 0.10 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.152	48.04	55.86	-7.82
2	0.251	42.94	51.73	-8.79
3	0.157	46.36	55.64	-9.28
4	0.150	46.63	56.00	-9.37
5	0.254	42.18	51.64	-9.46
6	0.205	41.61	53.40	-11.79
7	0.164	42.64	55.25	-12.61
8	0.210	40.42	53.23	-12.80
9	0.162	42.17	55.38	-13.22
10	0.167	41.46	55.11	-13.65
11	0.201	39.63	53.58	-13.95
12	0.170	40.96	54.98	-14.02
13	0.362	34.65	48.69	-14.05
14	0.172	40.30	54.86	-14.55
15	0.175	40.11	54.72	-14.61
16	0.187	38.75	54.15	-15.40
17	0.217	37.29	52.91	-15.63
18	0.180	38.75	54.50	-15.75
19	0.182	38.48	54.41	-15.93
20	0.197	37.67	53.75	-16.08
21	0.212	36.44	53.14	-16.70
22	0.190	36.40	54.01	-17.61
23	0.262	33.44	51.38	-17.93
24	0.228	34.46	52.52	-18.06
25	0.194	35.66	53.88	-18.22
26	0.226	33.69	52.61	-18.92
27	0.329	30.34	49.48	-19.14
28	0.240	32.64	52.08	-19.44
29	0.238	32.27	52.17	-19.90
30	0.290	30.23	50.54	-20.31
31	0.214	32.70	53.05	-20.35
32	0.266	30.80	51.24	-20.44
33	0.244	31.04	51.95	-20.91
34	0.272	29.35	51.07	-21.72
35	0.286	28.66	50.63	-21.96
36	0.275	28.91	50.98	-22.07
37	0.299	28.05	50.28	-22.22
38	0.296	27.88	50.36	-22.49
39	0.350	25.64	48.95	-23.31
40	0.339	25.24	49.22	-23.98
41	0.309	25.86	50.01	-24.15

EMISSION LEVEL [dBuV] PEAK
Graph for Peak & Average

3/15/2005 22:08:55





Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
WM3A2915ABG (Transmit Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

40 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.167	56.54	55.11	1.42*
2	0.163	55.34	55.29	0.05*
3	0.158	55.44	55.56	-0.11*
4	0.176	54.53	54.68	-0.14*
5	0.161	54.54	55.43	-0.89*
6	0.154	54.05	55.78	-1.73*
7	0.150	53.75	56.00	-2.25*
8	0.170	52.04	54.98	-2.95*
9	0.173	51.53	54.81	-3.28*
10	0.182	49.43	54.41	-4.98*
11	0.205	47.01	53.40	-6.39*
12	0.248	45.37	51.82	-6.44*
13	0.254	45.17	51.64	-6.47*
14	0.195	46.92	53.84	-6.92*
15	0.212	46.21	53.14	-6.93*
16	0.178	47.43	54.59	-7.16*
17	0.188	46.82	54.10	-7.28*
18	0.184	46.73	54.28	-7.56*
19	0.243	43.48	52.00	-8.52*
20	3.741	37.13	46.00	-8.87
21	0.198	44.82	53.71	-8.89*
22	2.066	37.05	46.00	-8.95
23	4.408	36.99	46.00	-9.01
24	0.489	37.07	46.18	-9.11
25	0.360	39.50	48.73	-9.23
26	0.227	43.09	52.57	-9.48*
27	3.492	36.31	46.00	-9.69
28	0.720	36.30	46.00	-9.70
29	2.322	36.28	46.00	-9.72
30	0.230	42.69	52.43	-9.74*
31	0.216	43.10	52.96	-9.86*
32	0.320	39.81	49.71	-9.90
33	1.800	36.10	46.00	-9.90
34	0.516	36.07	46.00	-9.93
35	3.882	36.05	46.00	-9.95
36	0.235	42.28	52.25	-9.97*
37	1.708	35.98	46.00	-10.02
38	2.201	35.86	46.00	-10.14
39	1.603	35.86	46.00	-10.14
40	0.223	42.50	52.70	-10.20*

* Please See the Average Readings on the Next Page and on the Plot



Intel Corporation
 Mini PCI Type 3A 802.11abg Wireless LAN
 WM3A2915ABG (Transmit Mode)
 With Phycomp Antenna
 TEST ENGINEER : Benigno Chavez

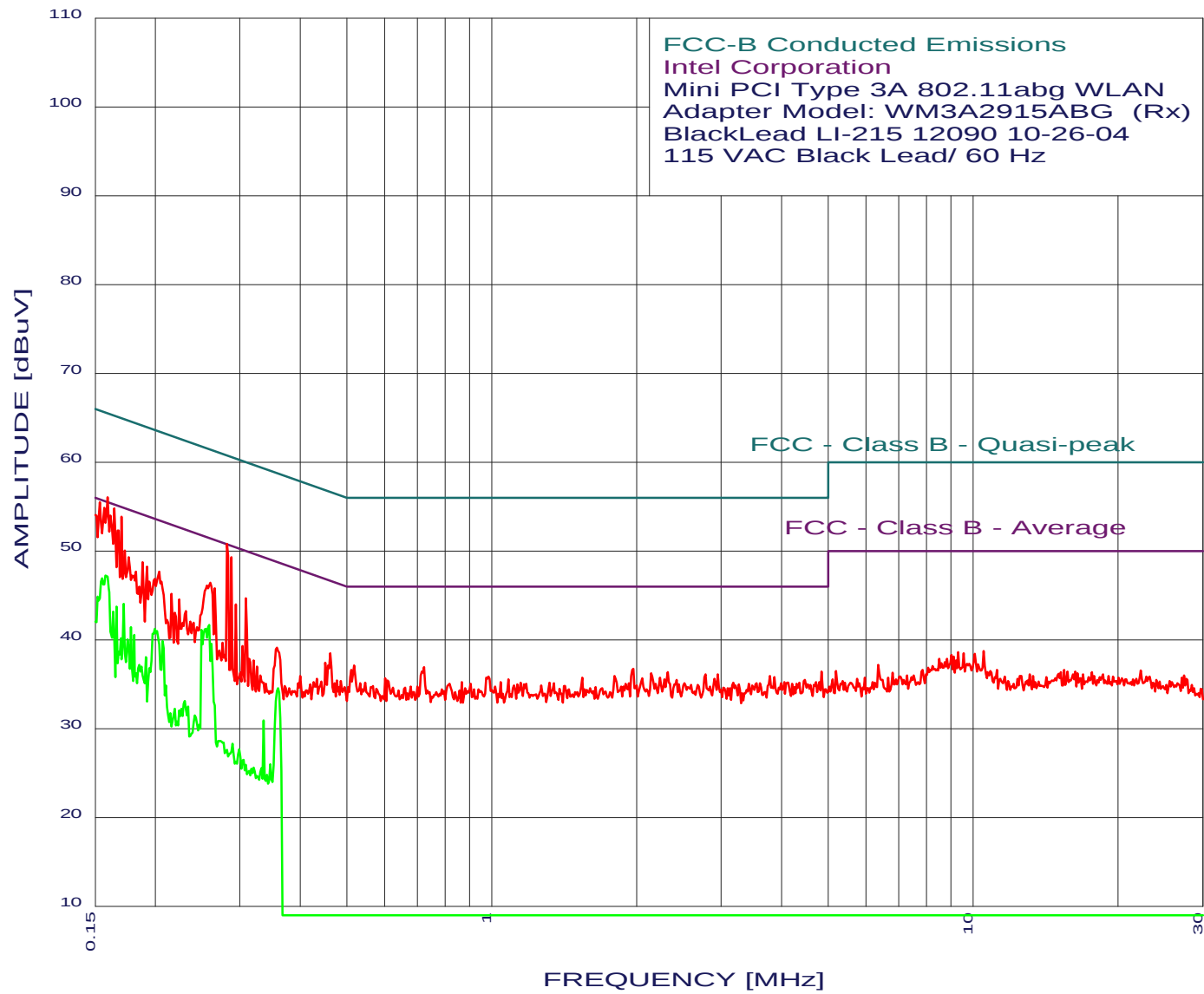
 28 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 0.10 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.157	47.78	55.60	-7.82
2	0.160	46.94	55.47	-8.53
3	0.165	45.29	55.20	-9.91
4	0.154	45.59	55.78	-10.19
5	0.256	40.56	51.55	-10.99
6	0.170	43.48	54.94	-11.47
7	0.205	40.93	53.40	-12.47
8	0.248	38.12	51.82	-13.69
9	0.202	39.52	53.53	-14.02
10	0.150	41.41	56.00	-14.59
11	0.173	40.10	54.81	-14.71
12	0.210	38.28	53.23	-14.95
13	0.188	39.15	54.10	-14.95
14	0.169	39.89	55.03	-15.14
15	0.176	39.16	54.68	-15.51
16	0.183	38.03	54.37	-16.34
17	0.195	36.31	53.84	-17.53
18	0.179	36.80	54.54	-17.74
19	0.186	36.43	54.19	-17.77
20	0.215	35.09	53.00	-17.91
21	0.193	35.97	53.93	-17.95
22	0.238	32.34	52.17	-19.83
23	0.223	32.56	52.70	-20.14
24	0.227	31.87	52.57	-20.70
25	0.221	31.95	52.78	-20.84
26	0.234	31.36	52.30	-20.94
27	0.263	30.17	51.33	-21.16
28	0.240	30.45	52.08	-21.63

EMISSION LEVEL [dBuV] PEAK
Graph for Peak & Average

3/15/2005 22:00:10





**COMPATIBLE
ELECTRONICS**

3/15/2005 22:00:10

Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
Model: WM3A2915ABG (Receive Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

40 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.159	56.06	55.51	0.54*
2	0.282	50.78	50.76	0.02*
3	0.153	55.46	55.82	-0.36*
4	0.164	54.76	55.25	-0.49*
5	0.157	54.86	55.64	-0.78*
6	0.170	53.85	54.94	-1.09*
7	0.288	49.27	50.58	-1.31*
8	0.162	53.96	55.38	-1.43*
9	0.150	54.06	56.00	-1.94*
10	0.167	52.25	55.11	-2.86*
11	0.173	50.05	54.81	-4.76*
12	0.260	46.39	51.42	-5.03*
13	0.309	44.66	50.01	-5.35*
14	0.188	48.75	54.10	-5.36*
15	0.176	49.25	54.68	-5.42*
16	0.266	45.79	51.24	-5.45*
17	0.193	48.24	53.93	-5.68*
18	0.204	47.64	53.44	-5.81*
19	0.294	43.97	50.41	-6.44*
20	0.195	46.54	53.84	-7.30*
21	0.216	45.13	52.96	-7.83*
22	0.224	44.52	52.65	-8.13*
23	0.461	38.48	46.67	-8.19
24	0.518	37.07	46.00	-8.93
25	0.724	36.89	46.00	-9.11
26	0.232	43.22	52.39	-9.17*
27	1.971	36.71	46.00	-9.29
28	0.510	36.57	46.00	-9.43
29	0.452	37.38	46.85	-9.46
30	4.851	36.40	46.00	-9.60
31	2.322	36.35	46.00	-9.65
32	0.358	39.12	48.78	-9.66*
33	2.145	36.24	46.00	-9.76
34	0.220	43.02	52.83	-9.80*
35	2.948	36.12	46.00	-9.88
36	2.781	36.10	46.00	-9.90
37	3.781	35.90	46.00	-10.10
38	1.800	35.88	46.00	-10.12
39	0.240	41.91	52.08	-10.17*
40	0.984	35.82	46.00	-10.18

* Please See the Average Readings on the Next Page and on the Plot



3/15/2005 22:00:10

Intel Corporation
 Mini PCI Type 3A 802.11abg Wireless LAN
 Model: WM3A2915ABG (Receive Mode)
 With Phycomp Antenna
 TEST ENGINEER : Benigno Chavez

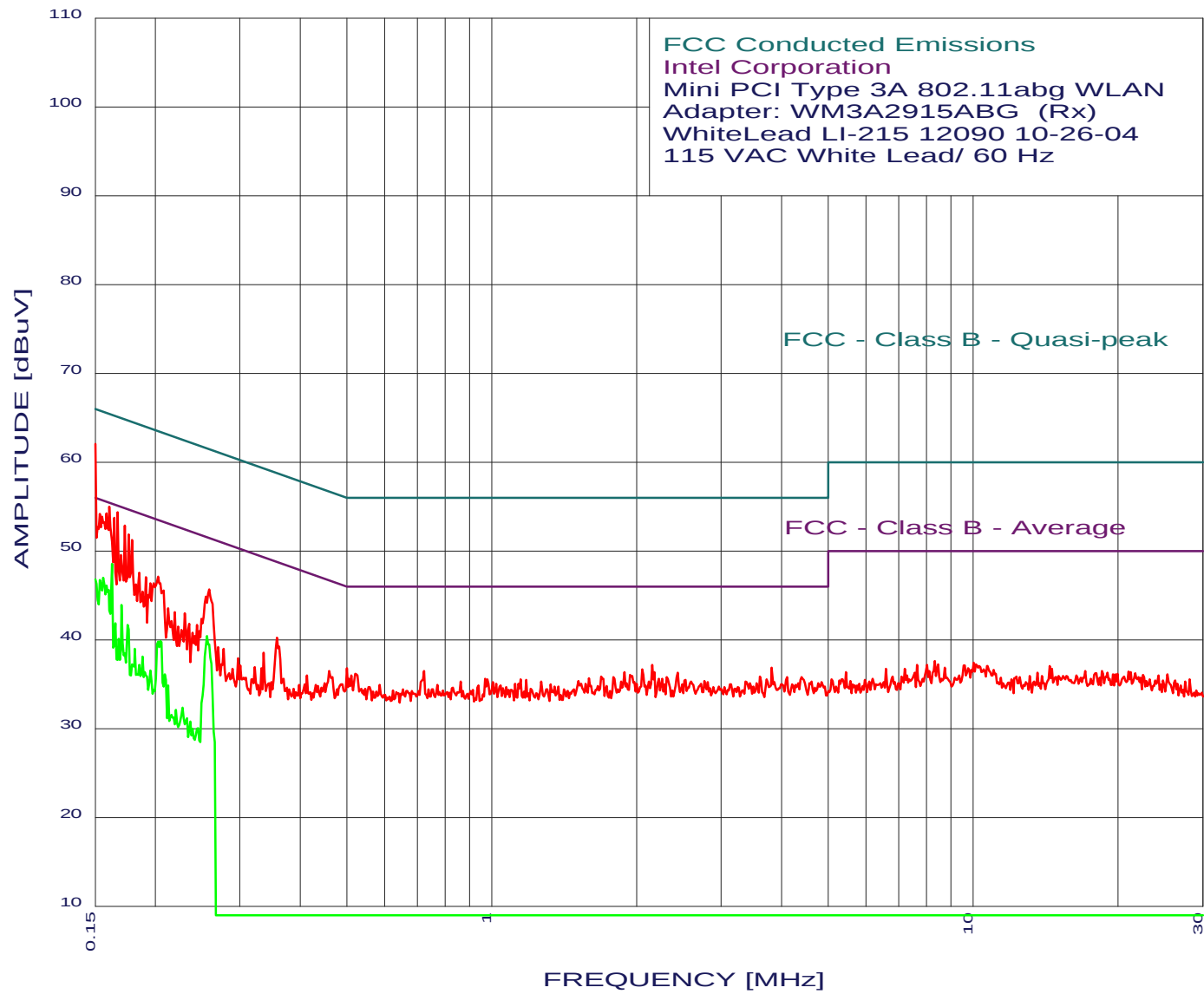
 41 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 0.10 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.157	47.20	55.60	-8.40
2	0.155	46.91	55.73	-8.82
3	0.259	41.63	51.47	-9.83
4	0.255	41.19	51.60	-10.41
5	0.250	41.12	51.77	-10.65
6	0.172	44.04	54.86	-10.81
7	0.152	44.84	55.91	-11.07
8	0.166	43.74	55.16	-11.41
9	0.262	39.55	51.38	-11.82
10	0.163	43.16	55.29	-12.14
11	0.200	41.23	53.62	-12.39
12	0.202	40.97	53.53	-12.56
13	0.178	41.42	54.59	-13.17
14	0.207	39.86	53.31	-13.45
15	0.181	40.52	54.46	-13.94
16	0.150	42.05	56.00	-13.95
17	0.360	34.52	48.73	-14.22
18	0.175	40.00	54.72	-14.72
19	0.170	40.13	54.98	-14.85
20	0.192	38.05	53.97	-15.92
21	0.168	38.68	55.07	-16.39
22	0.195	36.79	53.84	-17.05
23	0.185	37.17	54.24	-17.07
24	0.187	36.98	54.15	-17.17
25	0.183	36.19	54.37	-18.18
26	0.211	34.83	53.18	-18.35
27	0.336	30.93	49.31	-18.38
28	0.230	33.12	52.43	-19.32
29	0.234	32.48	52.30	-19.81
30	0.227	32.25	52.57	-20.32
31	0.242	31.46	52.04	-20.58
32	0.224	32.04	52.65	-20.61
33	0.220	32.21	52.83	-20.61
34	0.215	31.75	53.00	-21.26
35	0.247	30.38	51.86	-21.48
36	0.222	30.77	52.74	-21.97
37	0.290	28.28	50.54	-22.26
38	0.270	28.59	51.11	-22.52
39	0.299	27.64	50.28	-22.63
40	0.347	25.99	49.04	-23.06
41	0.282	27.57	50.76	-23.19

EMISSION LEVEL [dBuV] PEAK
Graph for Peak & Average

3/15/2005 22:12:04





3/15/2005 22:12:04

Intel Corporation
 Mini PCI Type 3A 802.11abg Wireless LAN
 Model: WM3A2915ABG (Receive Mode)
 With Phycomp Antenna
 TEST ENGINEER : Benigno Chavez

 41 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.150	62.05	56.00	6.05*
2	0.161	54.94	55.43	-0.49*
3	0.167	54.34	55.11	-0.78*
4	0.158	54.24	55.56	-1.31*
5	0.164	53.74	55.25	-1.51*
6	0.153	54.15	55.82	-1.67*
7	0.155	53.85	55.73	-1.89*
8	0.173	52.83	54.81	-1.98*
9	0.176	51.83	54.68	-2.84*
10	0.179	51.23	54.54	-3.31*
11	0.170	49.54	54.98	-5.45*
12	0.259	45.66	51.47	-5.80
13	0.203	47.11	53.49	-6.37*
14	0.185	47.53	54.24	-6.71*
15	0.192	47.02	53.97	-6.95*
16	0.196	46.32	53.80	-7.48*
17	0.183	46.23	54.37	-8.14*
18	0.358	40.20	48.78	-8.58
19	0.188	45.42	54.10	-8.68*
20	2.156	37.16	46.00	-8.84
21	3.820	36.84	46.00	-9.16
22	0.500	36.77	46.01	-9.23
23	2.055	36.65	46.00	-9.35
24	0.230	42.99	52.43	-9.44*
25	0.724	36.50	46.00	-9.50
26	0.213	43.51	53.09	-9.59*
27	1.889	36.32	46.00	-9.68
28	2.436	36.29	46.00	-9.71
29	0.220	43.10	52.83	-9.73*
30	0.521	36.17	46.00	-9.83
31	1.939	36.03	46.00	-9.97
32	0.510	35.97	46.00	-10.03
33	1.690	35.87	46.00	-10.13
34	3.605	35.82	46.00	-10.18
35	1.790	35.79	46.00	-10.21
36	4.408	35.79	46.00	-10.21
37	4.114	35.78	46.00	-10.22
38	2.310	35.77	46.00	-10.23
39	0.459	36.48	46.71	-10.23
40	0.244	41.68	51.95	-10.27*

 * Please See the Average Readings on the Next Page and on the Plot



Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
Model: WM3A2915ABG (Receive Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

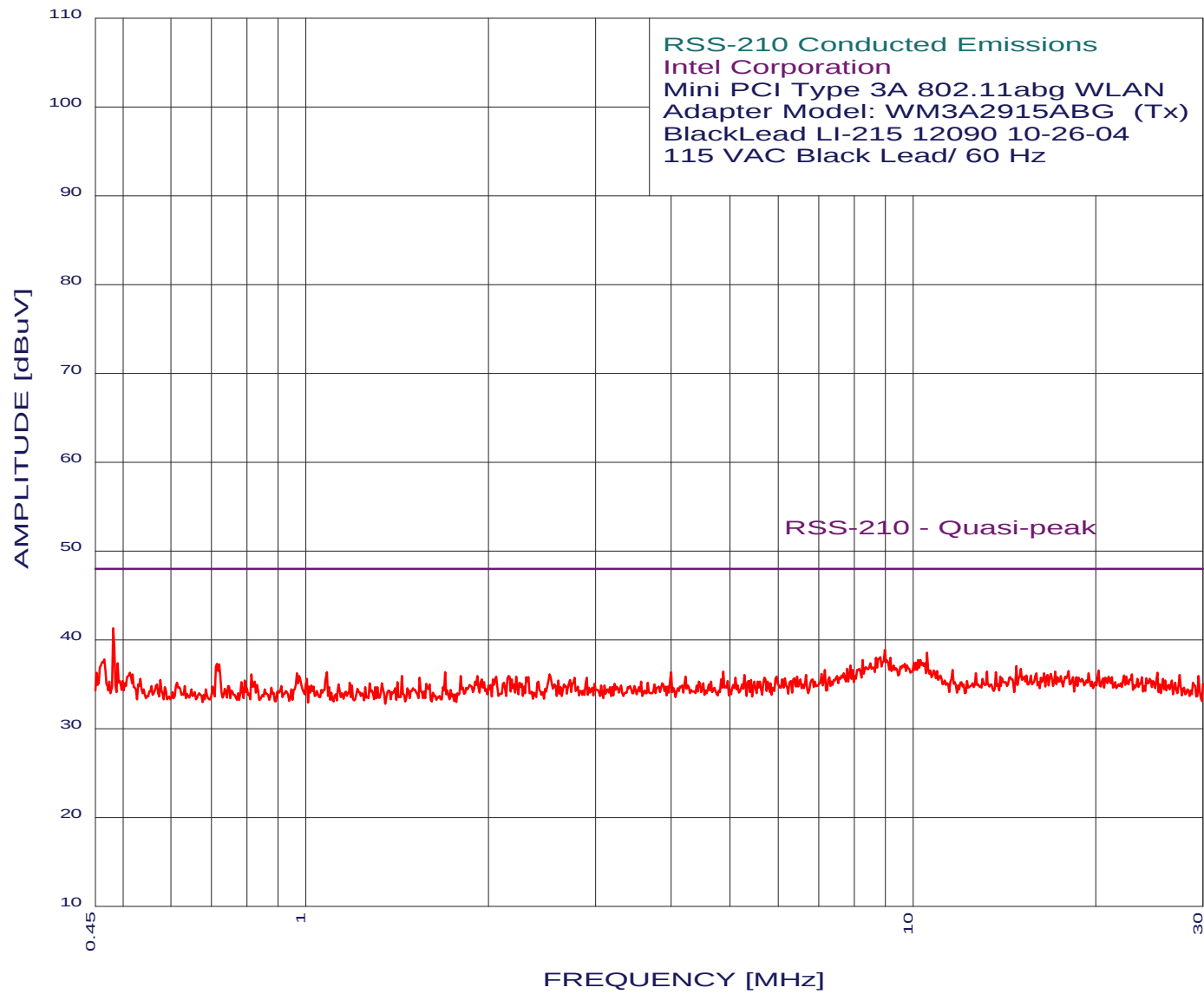
30 highest peaks above -50.00 dB of FCC - Class B - Average limit line

Peak criteria : 0.10 dB, Curve : Average

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.162	48.52	55.34	-6.82
2	0.156	46.99	55.69	-8.69
3	0.153	46.74	55.82	-9.08
4	0.150	46.80	56.00	-9.20
5	0.158	46.09	55.56	-9.46
6	0.160	45.60	55.47	-9.87
7	0.170	43.94	54.94	-11.01
8	0.256	40.41	51.55	-11.14
9	0.175	41.68	54.72	-13.04
10	0.165	41.87	55.20	-13.33
11	0.205	39.84	53.40	-13.56
12	0.203	39.76	53.49	-13.72
13	0.168	40.12	55.07	-14.95
14	0.182	39.00	54.41	-15.41
15	0.188	38.12	54.10	-15.98
16	0.173	38.49	54.81	-16.32
17	0.185	37.15	54.24	-17.09
18	0.210	36.11	53.23	-17.12
19	0.196	36.55	53.80	-17.25
20	0.179	37.19	54.54	-17.35
21	0.190	36.37	54.01	-17.64
22	0.213	34.84	53.09	-18.26
23	0.199	34.32	53.67	-19.35
24	0.228	32.35	52.52	-20.17
25	0.221	32.11	52.78	-20.68
26	0.233	31.16	52.34	-21.19
27	0.216	31.56	52.96	-21.40
28	0.237	30.77	52.21	-21.44
29	0.246	30.00	51.90	-21.90
30	0.239	29.97	52.12	-22.15

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

3/15/2005 22:04:19





Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
Model: WM3A2915ABG (Transmit Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

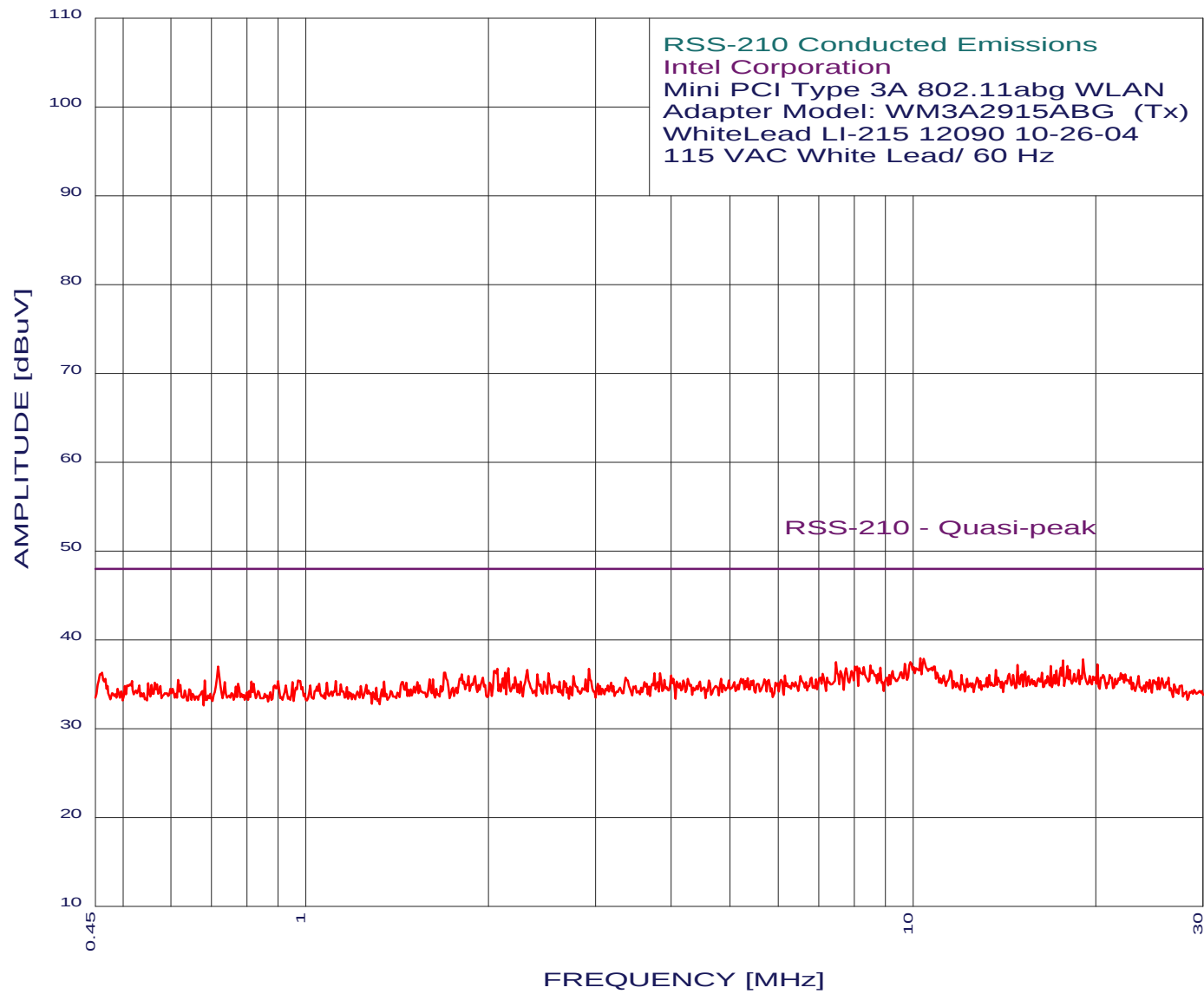
41 highest peaks above -50.00 dB of RSS-210 - Quasi-peak limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	0.481	41.28	48.00	-6.72
2	8.990	38.86	48.00	-9.14
3	10.546	38.54	48.00	-9.46
4	8.841	38.05	48.00	-9.95
5	9.181	37.97	48.00	-10.03
6	8.693	37.95	48.00	-10.05
7	0.466	37.78	48.00	-10.22
8	10.284	37.73	48.00	-10.27
9	8.266	37.73	48.00	-10.27
10	0.490	37.37	48.00	-10.63
11	0.715	37.29	48.00	-10.71
12	7.894	37.11	48.00	-10.89
13	14.815	37.03	48.00	-10.97
14	15.071	36.75	48.00	-11.25
15	7.794	36.70	48.00	-11.30
16	11.617	36.62	48.00	-11.38
17	7.960	36.61	48.00	-11.39
18	7.166	36.57	48.00	-11.43
19	20.221	36.53	48.00	-11.47
20	18.054	36.45	48.00	-11.55
21	13.228	36.42	48.00	-11.58
22	4.870	36.41	48.00	-11.59
23	17.166	36.39	48.00	-11.61
24	1.697	36.36	48.00	-11.64
25	13.684	36.35	48.00	-11.65
26	1.083	36.34	48.00	-11.66
27	3.996	36.32	48.00	-11.68
28	25.261	36.31	48.00	-11.69
29	0.452	36.28	48.00	-11.72
30	0.513	36.27	48.00	-11.73
31	19.465	36.24	48.00	-11.76
32	16.457	36.24	48.00	-11.76
33	0.966	36.22	48.00	-11.78
34	15.984	36.21	48.00	-11.79
35	12.685	36.19	48.00	-11.81
36	16.881	36.17	48.00	-11.83
37	7.077	36.17	48.00	-11.83
38	22.929	36.12	48.00	-11.88
39	0.814	36.10	48.00	-11.90
40	0.519	36.07	48.00	-11.93
41	0.450	34.28	48.00	-13.72

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

3/15/2005 22:15:13





Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
WM3A2915ABG (Transmit Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

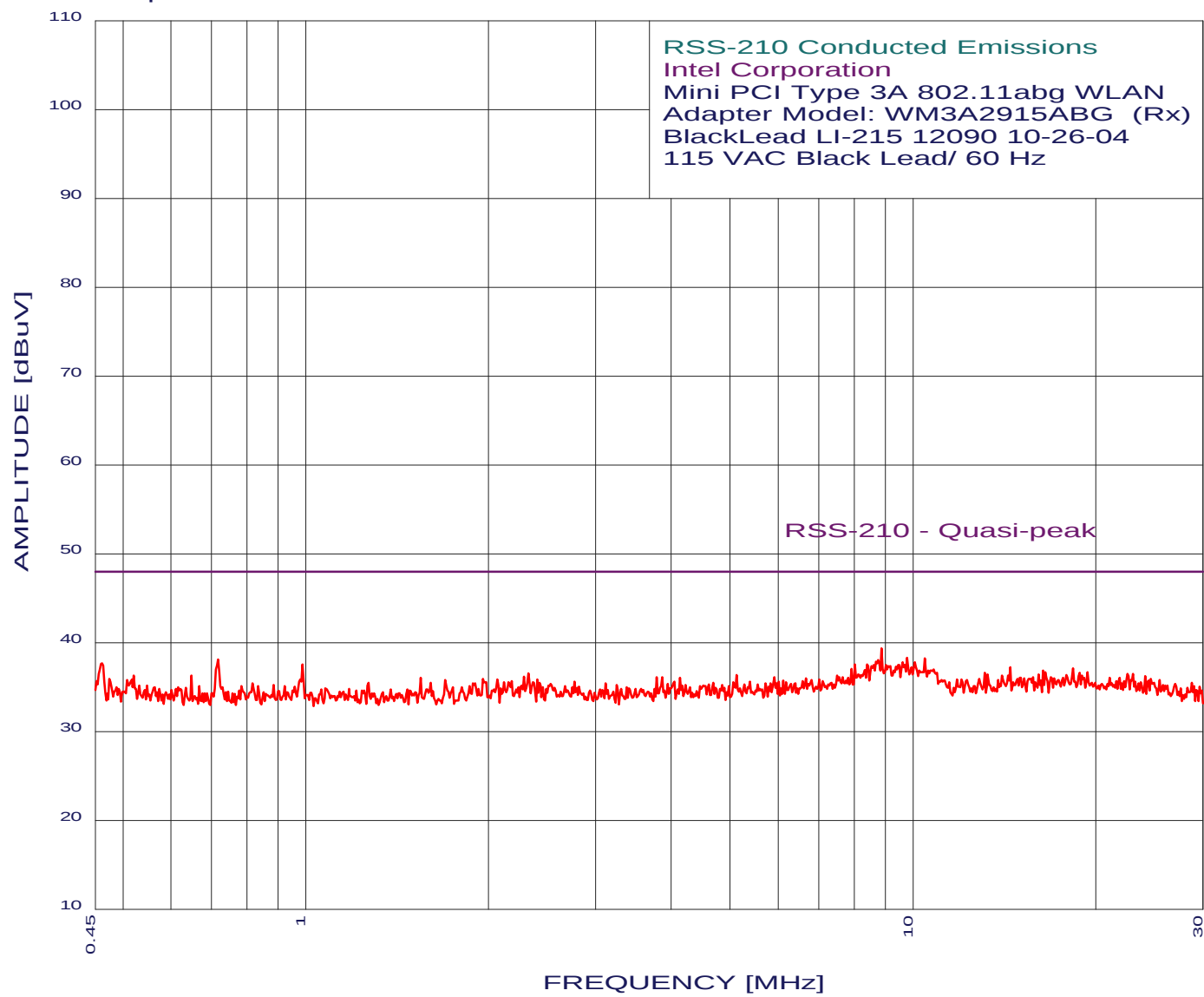
41 highest peaks above -50.00 dB of RSS-210 - Quasi-peak limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	10.284	37.92	48.00	-10.08
2	10.415	37.83	48.00	-10.17
3	19.067	37.79	48.00	-10.21
4	17.678	37.69	48.00	-10.31
5	9.903	37.49	48.00	-10.51
6	7.474	37.45	48.00	-10.55
7	9.696	37.28	48.00	-10.72
8	20.137	37.25	48.00	-10.75
9	14.879	37.17	48.00	-10.83
10	8.512	37.11	48.00	-10.89
11	16.881	37.02	48.00	-10.98
12	17.979	37.01	48.00	-10.99
13	0.718	37.00	48.00	-11.00
14	8.093	36.99	48.00	-11.01
15	8.302	36.90	48.00	-11.10
16	8.841	36.83	48.00	-11.17
17	7.761	36.77	48.00	-11.23
18	2.156	36.76	48.00	-11.24
19	2.067	36.75	48.00	-11.25
20	2.930	36.74	48.00	-11.26
21	18.130	36.62	48.00	-11.38
22	13.684	36.58	48.00	-11.42
23	2.315	36.57	48.00	-11.43
24	18.749	36.57	48.00	-11.43
25	17.238	36.55	48.00	-11.45
26	11.519	36.51	48.00	-11.49
27	7.927	36.48	48.00	-11.52
28	7.600	36.46	48.00	-11.54
29	9.259	36.45	48.00	-11.55
30	15.327	36.41	48.00	-11.59
31	16.322	36.28	48.00	-11.72
32	0.462	36.28	48.00	-11.72
33	1.697	36.28	48.00	-11.72
34	2.129	36.25	48.00	-11.75
35	3.833	36.24	48.00	-11.76
36	3.753	36.24	48.00	-11.76
37	21.992	36.23	48.00	-11.77
38	2.508	36.20	48.00	-11.80
39	14.391	36.13	48.00	-11.87
40	7.107	36.13	48.00	-11.87
41	0.450	33.48	48.00	-14.52

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

3/15/2005 22:02:26





3/15/2005 22:02:26

Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
WM3A2915ABG (Receive Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

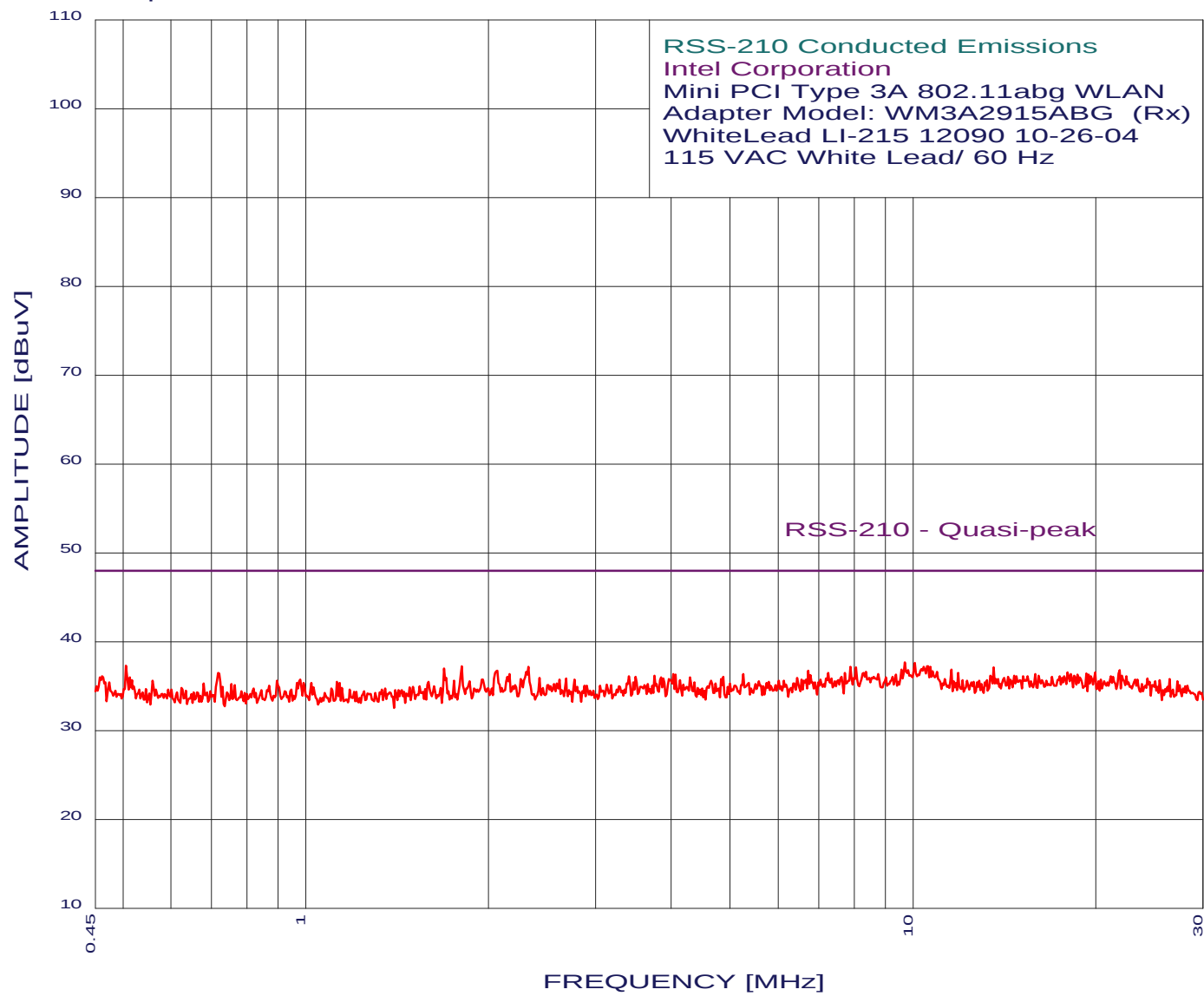
41 highest peaks above -50.00 dB of RSS-210 - Quasi-peak limit line

Peak criteria : 1.00 dB, Curve : Peak

Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	8.879	39.35	48.00	-8.65
2	9.779	38.30	48.00	-9.70
3	10.459	38.24	48.00	-9.76
4	0.718	38.09	48.00	-9.91
5	8.767	38.05	48.00	-9.95
6	10.068	37.81	48.00	-10.19
7	9.614	37.79	48.00	-10.21
8	0.462	37.68	48.00	-10.32
9	8.407	37.53	48.00	-10.47
10	0.987	37.52	48.00	-10.48
11	8.027	37.51	48.00	-10.49
12	9.494	37.48	48.00	-10.52
13	14.452	37.21	48.00	-10.79
14	18.356	37.07	48.00	-10.93
15	7.927	37.01	48.00	-10.99
16	16.389	36.84	48.00	-11.16
17	16.524	36.65	48.00	-11.35
18	19.386	36.64	48.00	-11.36
19	13.120	36.62	48.00	-11.38
20	18.829	36.60	48.00	-11.40
21	2.325	36.55	48.00	-11.45
22	22.554	36.49	48.00	-11.51
23	23.028	36.47	48.00	-11.53
24	13.283	36.43	48.00	-11.57
25	16.119	36.42	48.00	-11.58
26	17.904	36.34	48.00	-11.66
27	5.122	36.33	48.00	-11.67
28	18.988	36.31	48.00	-11.69
29	0.649	36.29	48.00	-11.71
30	14.028	36.28	48.00	-11.72
31	0.521	36.27	48.00	-11.73
32	24.117	36.24	48.00	-11.76
33	2.287	36.15	48.00	-11.85
34	5.907	36.11	48.00	-11.89
35	3.866	36.11	48.00	-11.89
36	3.784	36.10	48.00	-11.90
37	15.782	36.10	48.00	-11.90
38	16.881	36.07	48.00	-11.93
39	15.071	36.05	48.00	-11.95
40	4.134	36.03	48.00	-11.97
41	0.450	34.68	48.00	-13.32

EMISSION LEVEL [dBuV] PEAK
Graph for Peak

3/15/2005 22:13:10





Intel Corporation
Mini PCI Type 3A 802.11abg Wireless LAN
WM3A2915ABG (Receive Mode)
With Phycomp Antenna
TEST ENGINEER : Benigno Chavez

41 highest peaks above -50.00 dB of RSS-210 - Quasi-peak limit line

Peak criteria : 1.00 dB, Curve : Peak

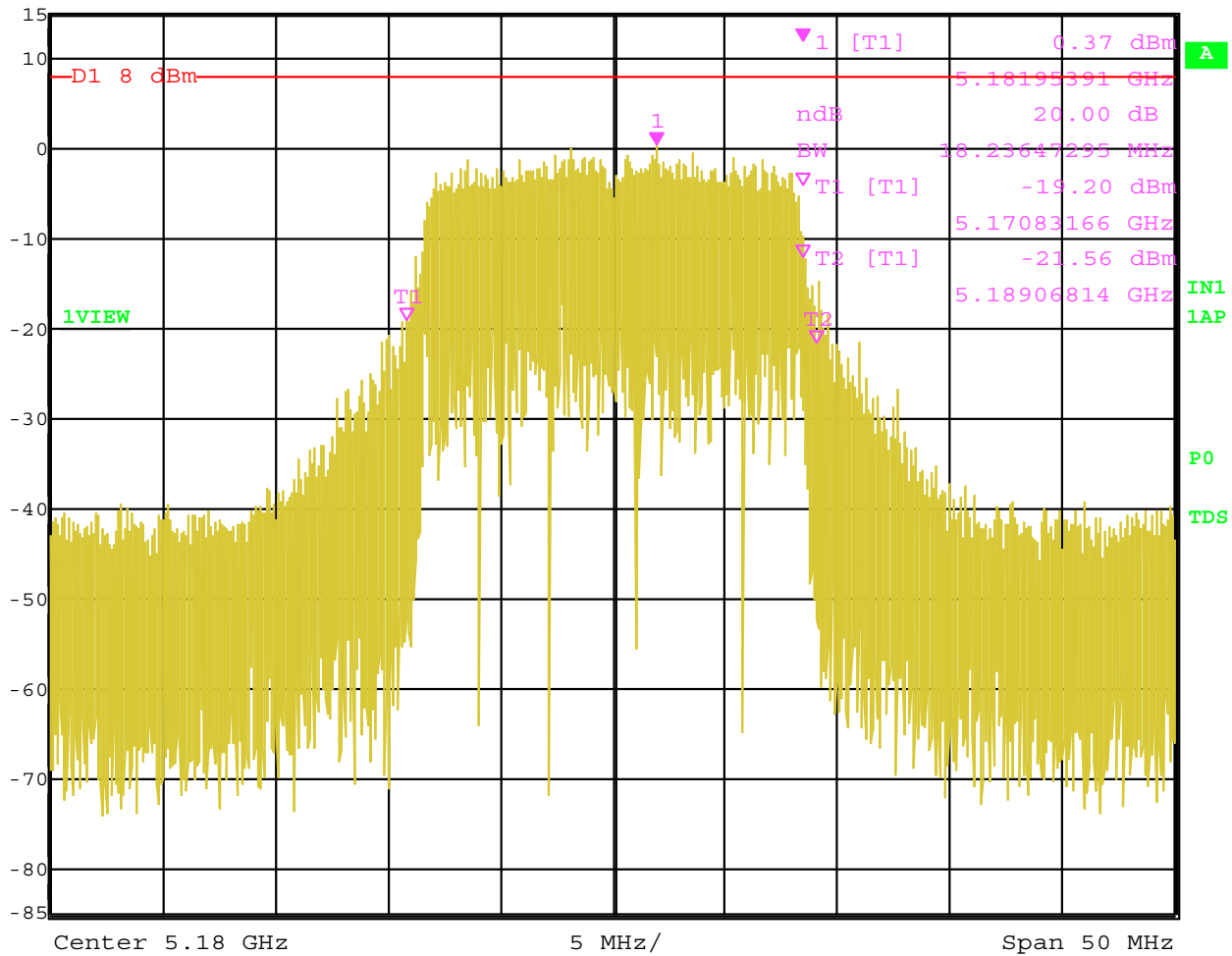
Peak#	Freq(MHz)	Amp(dBuV)	Limit(dB)	Delta(dB)
1	9.696	37.68	48.00	-10.32
2	10.068	37.60	48.00	-10.40
3	0.506	37.27	48.00	-10.73
4	10.589	37.24	48.00	-10.76
5	1.808	37.20	48.00	-10.80
6	2.325	37.18	48.00	-10.82
7	7.894	37.18	48.00	-10.82
8	10.677	37.15	48.00	-10.85
9	8.060	37.08	48.00	-10.92
10	13.569	37.07	48.00	-10.93
11	1.690	36.97	48.00	-11.03
12	11.568	36.82	48.00	-11.18
13	21.898	36.79	48.00	-11.21
14	2.067	36.75	48.00	-11.25
15	6.729	36.71	48.00	-11.29
16	8.372	36.60	48.00	-11.40
17	19.969	36.55	48.00	-11.45
18	17.979	36.51	48.00	-11.49
19	0.718	36.50	48.00	-11.50
20	7.728	36.47	48.00	-11.53
21	7.256	36.44	48.00	-11.56
22	11.860	36.44	48.00	-11.56
23	19.306	36.39	48.00	-11.61
24	4.031	36.37	48.00	-11.63
25	2.165	36.36	48.00	-11.64
26	15.917	36.35	48.00	-11.65
27	5.250	36.32	48.00	-11.68
28	19.465	36.28	48.00	-11.72
29	4.065	36.27	48.00	-11.73
30	18.670	36.26	48.00	-11.74
31	9.377	36.26	48.00	-11.74
32	6.786	36.21	48.00	-11.79
33	22.086	36.17	48.00	-11.83
34	16.119	36.17	48.00	-11.83
35	14.694	36.16	48.00	-11.84
36	3.753	36.14	48.00	-11.86
37	21.179	36.12	48.00	-11.88
38	15.455	36.12	48.00	-11.88
39	22.461	36.11	48.00	-11.89
40	3.407	36.10	48.00	-11.90
41	0.450	34.38	48.00	-13.62

-20 dB BANDWIDTH

DATA SHEETS



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 20.00 dB	VBW	1 MHz		
	BW 18.23647295 MHz	SWT	5 ms	Unit	dBm

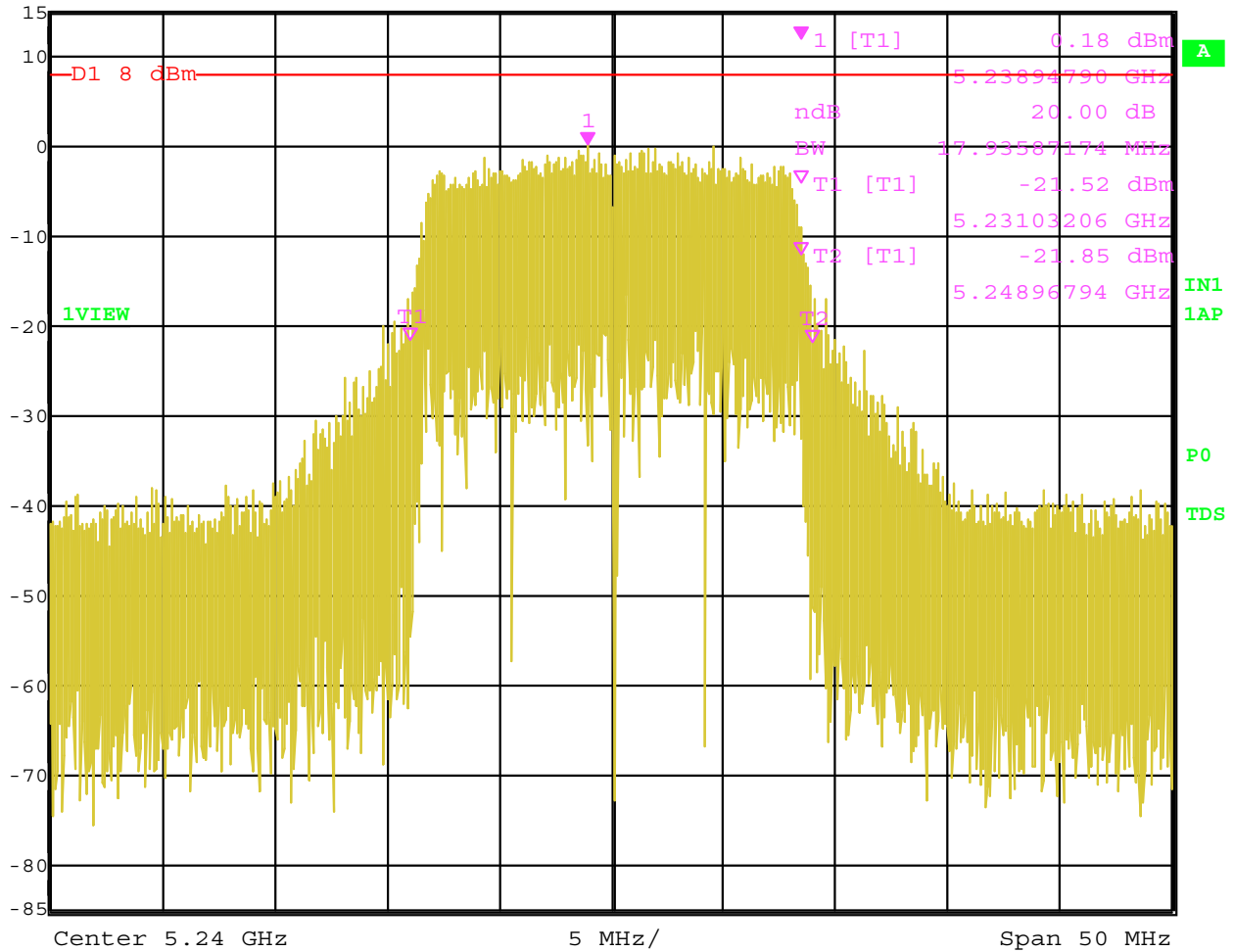


Date: 15.MAR.2005 08:54:40

Bandwidth 20 dB – Channel 36 – UNII Mode – Phycomp Antenna



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 20.00 dB	VBW	1 MHz		
	BW 17.93587174 MHz	SWT	5 ms	Unit	dBm

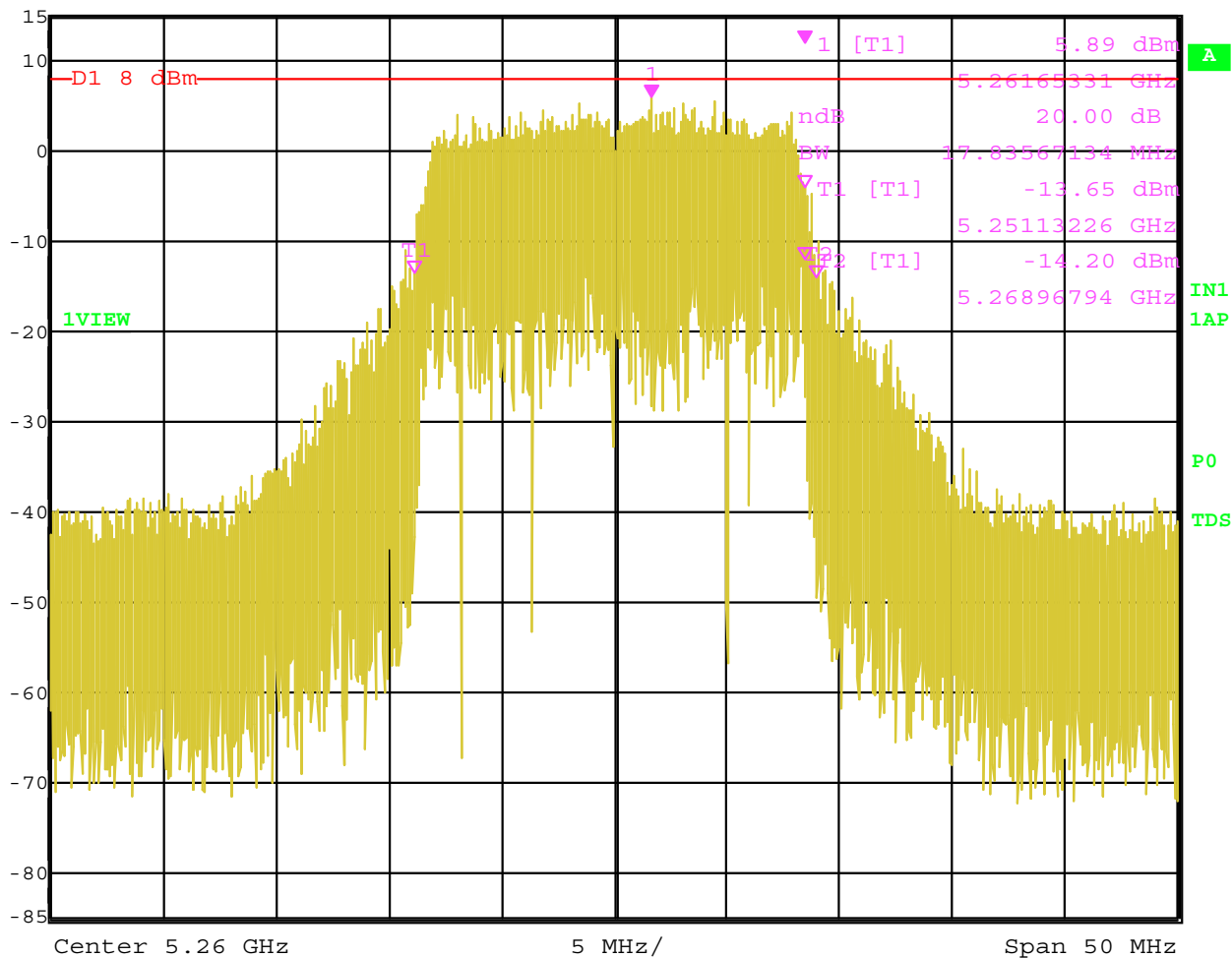


Date: 15.MAR.2005 08:56:07

Bandwidth 20 dB – Channel 48 – UNII Mode – Phycomp Antenna



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 20.00 dB	VBW	1 MHz		
	BW 17.83567134 MHz	SWT	5 ms	Unit	dBm

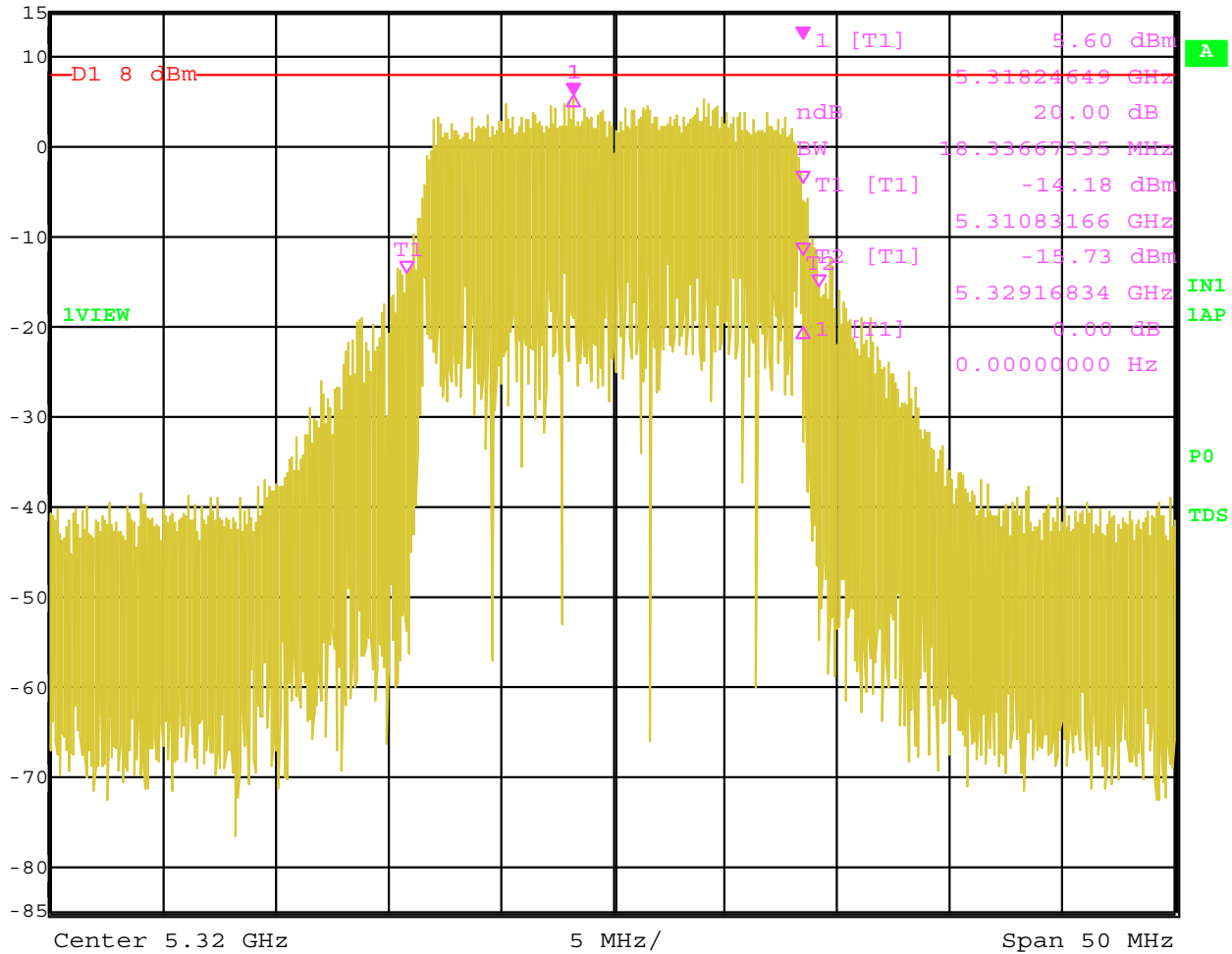


Date: 15.MAR.2005 09:02:25

Bandwidth 20 dB – Channel 52 – UNII Mode – Phycomp Antenna



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 20.00 dB	VBW	1 MHz		
	BW 18.33667335 MHz	SWT	5 ms	Unit	dBm



Date: 15.MAR.2005 09:04:12

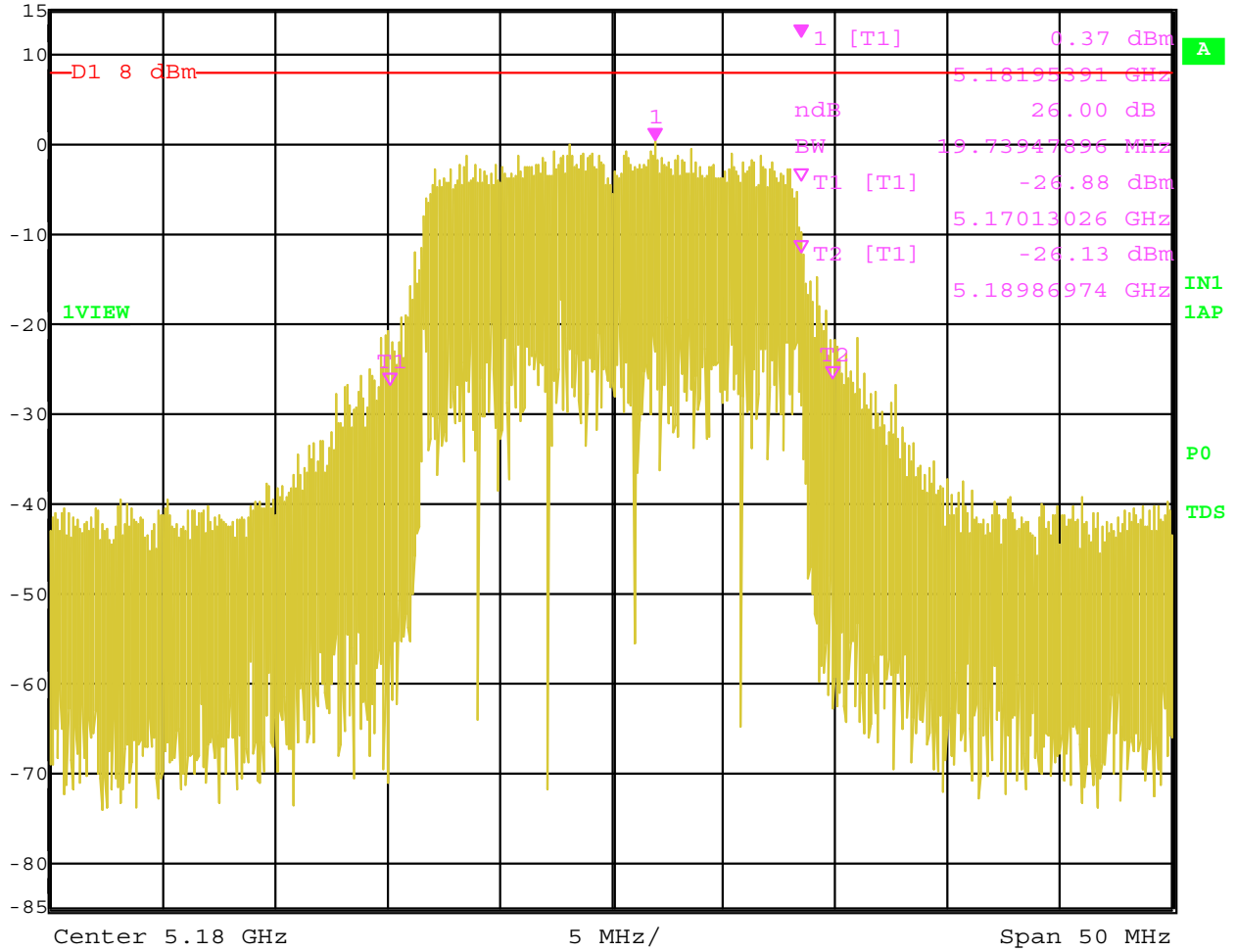
Bandwidth 20 dB – Channel 64 – UNII Mode – Phycomp Antenna

-26 dB BANDWIDTH

DATA SHEETS



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 26.00 dB	VBW	1 MHz		
	BW 19.73947896 MHz	SWT	5 ms	Unit	dBm

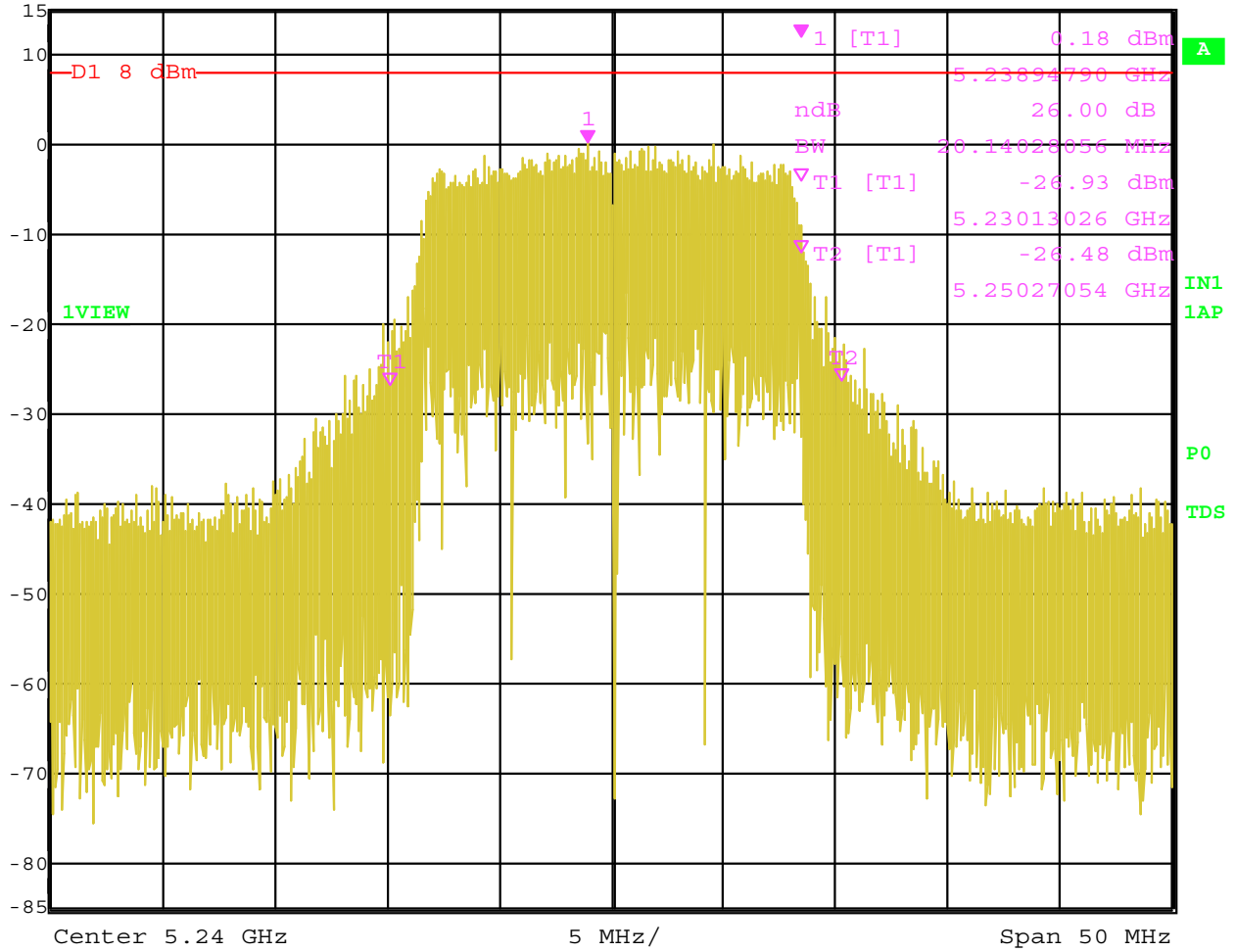


Date: 15.MAR.2005 08:53:30

Bandwidth 26 dB – Channel 36 – UNII Mode – Phycomp Antenna



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 26.00 dB	VBW	1 MHz		
	BW 20.14028056 MHz	SWT	5 ms	Unit	dBm

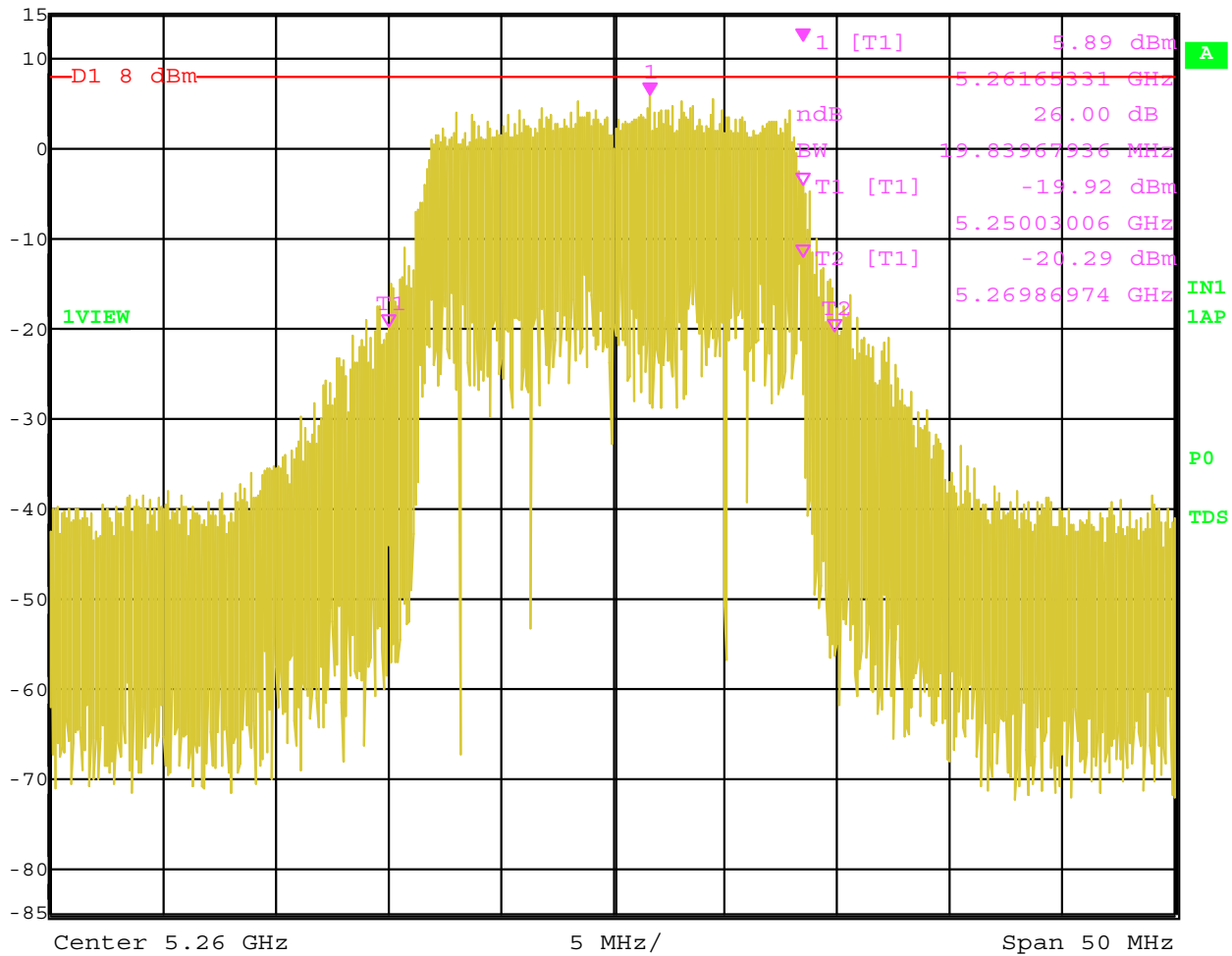


Date: 15.MAR.2005 08:56:40

Bandwidth 26 dB – Channel 48 – UNII Mode – Phycomp Antenna



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 26.00 dB	VBW	1 MHz		
	BW 19.83967936 MHz	SWT	5 ms	Unit	dBm

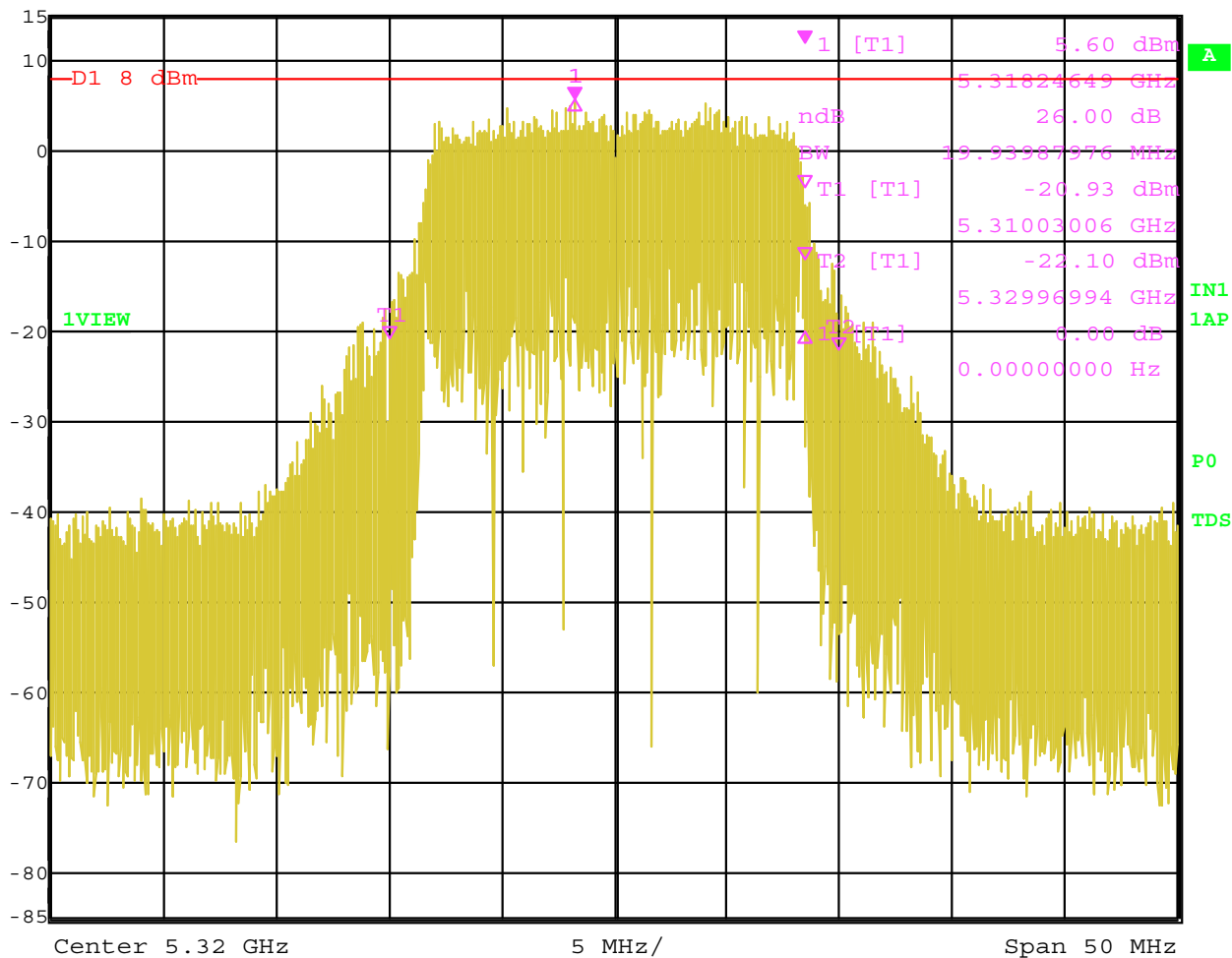


Date: 15.MAR.2005 09:02:55

Bandwidth 26 dB – Channel 52 – UNII Mode – Phycomp Antenna



Ref Lvl	Marker 1 [T1 ndB]	RBW	500 kHz	RF Att	40 dB
15 dBm	ndB 26.00 dB	VBW	1 MHz		
	BW 19.93987976 MHz	SWT	5 ms	Unit	dBm



Date: 15.MAR.2005 09:04:42

Bandwidth 26 dB – Channel 64 – UNII Mode – Phycomp Antenna

PEAK TRANSMIT POWER

DATA SHEETS

PEAK OUTPUT POWER

Intel Corporation

Intel Mini PCI Type 3A 802.11 ABG Wireless LAN
Adapter

MODEL: WM3A2915ABG

With Hitachi Antenna

For use in the Dell Agency Series #: PP17L

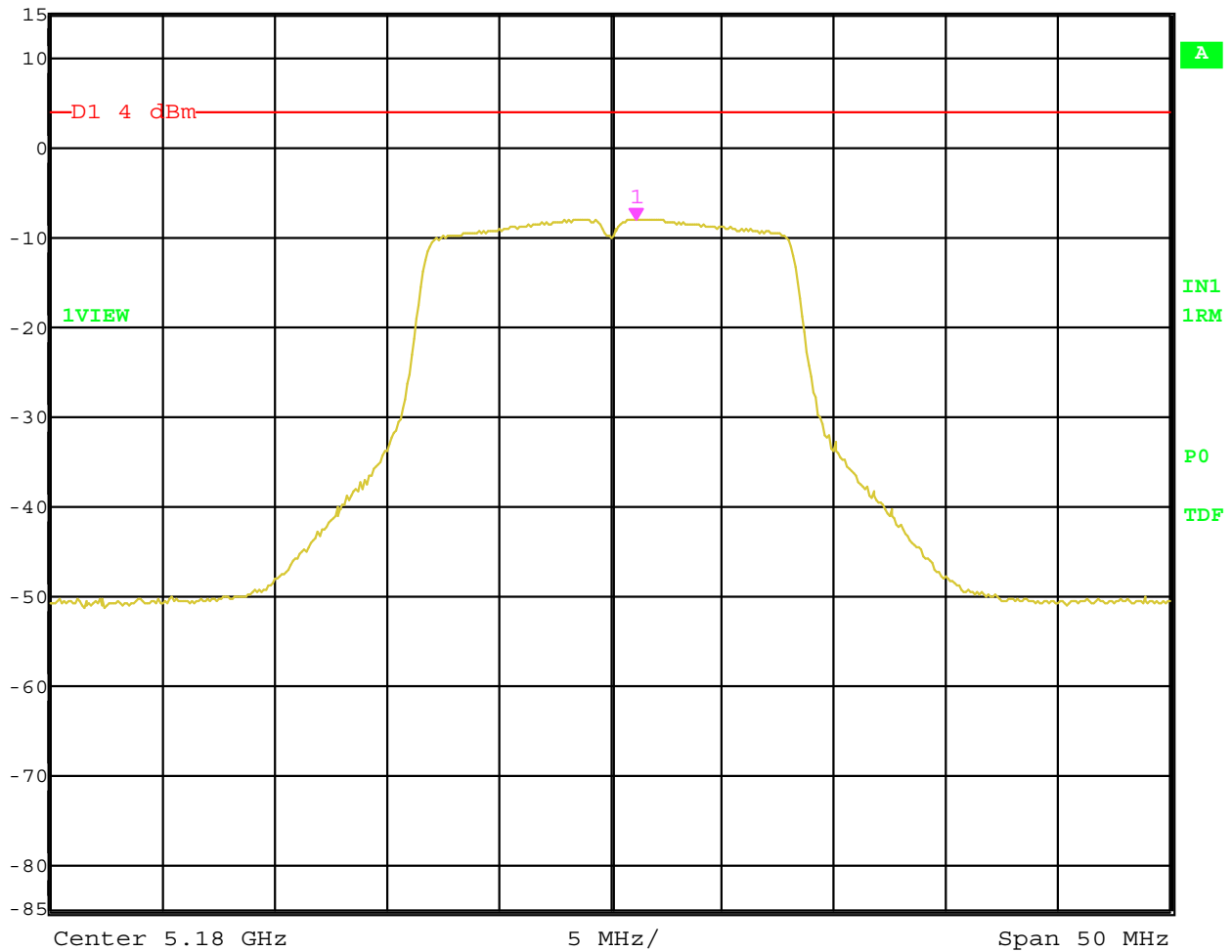
UNII Mode (Worst Case Rate is 6 Mbps)

CHANNEL	GAIN	PEAK POWER OUTPUT (dBm)
36 (5180 MHz)	1.5	11.53
48 (5240 MHz)	1.5	11.10
52 (5260 MHz)	6.5	16.02
64 (5320 MHz)	6.5	16.16

PEAK POWER SPECTRAL DENSITY
DATA SHEETS



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	40 dB
15 dBm	-8.04 dBm	VBW	3 MHz		
	5.18115230 GHz	SWT	5 ms	Unit	dBm

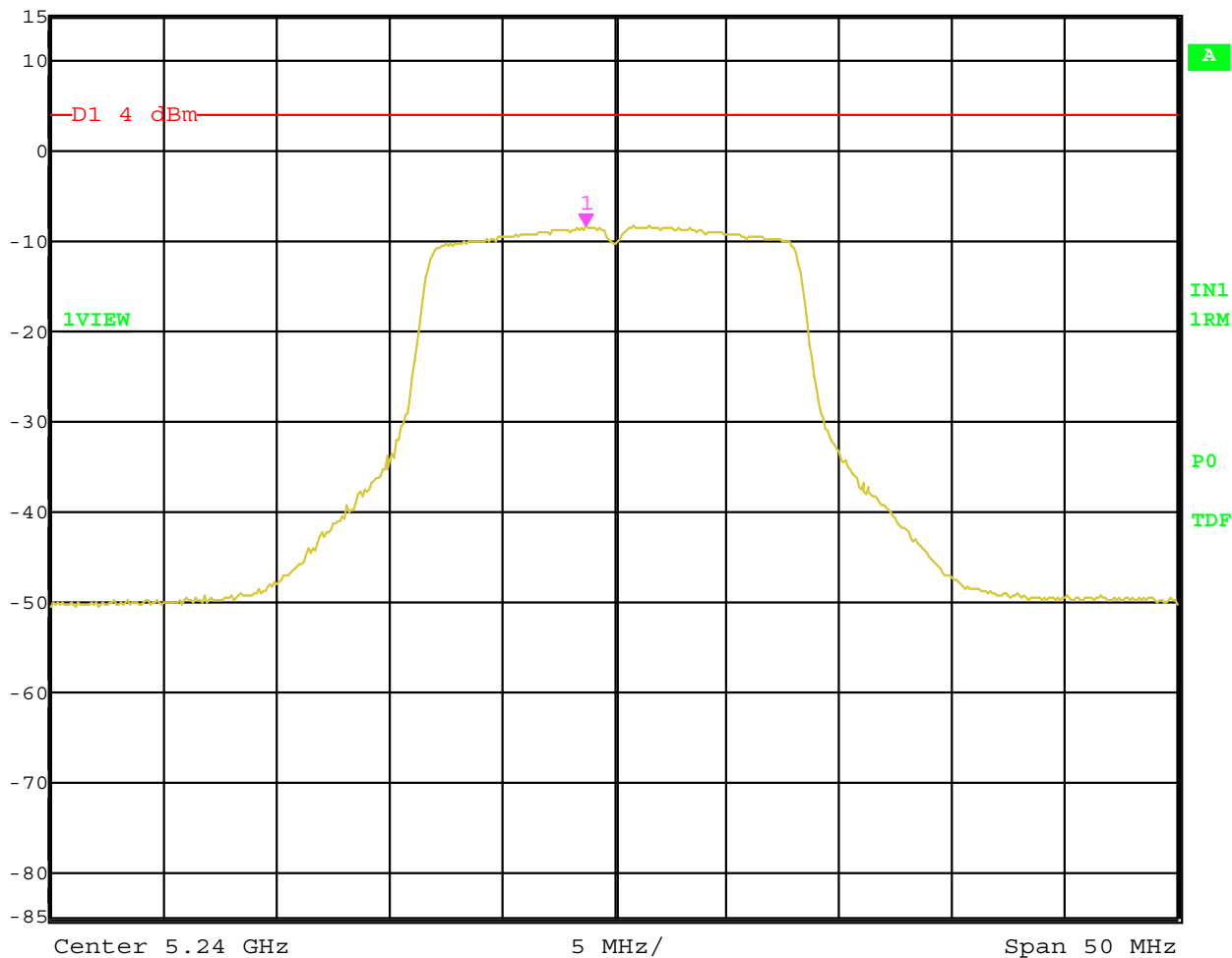


Date: 11.MAR.2005 02:41:45

Peak Power Spectral Density – Channel 36 – UNII Mode – Hitachi Antenna – FCC Method



Ref Lvl	Marker 1 [T1]	RBW	1 MHz	RF Att	40 dB
15 dBm	-8.45 dBm	VBW	3 MHz		
	5.23874749 GHz	SWT	5 ms	Unit	dBm

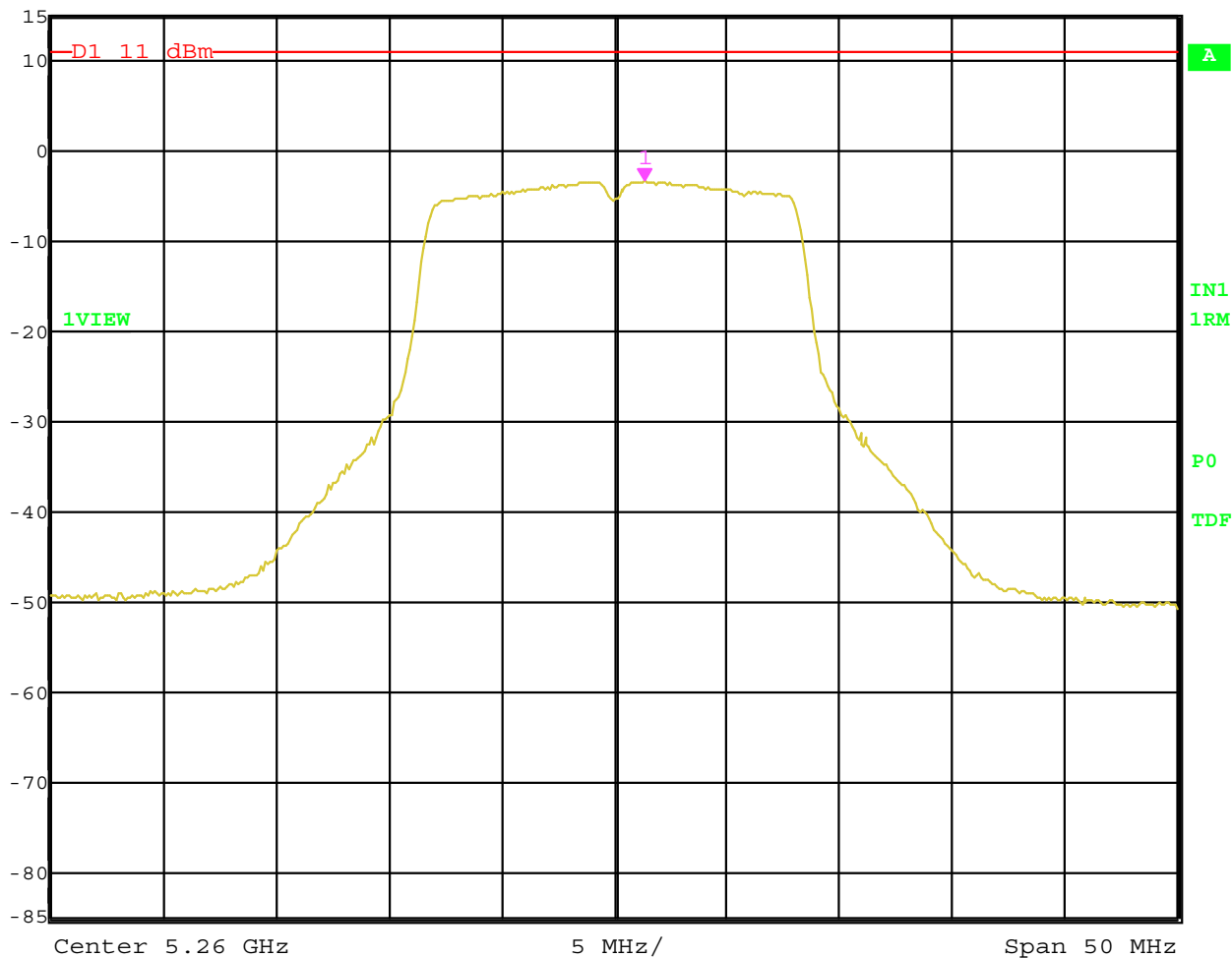


Date: 11.MAR.2005 02:41:07

Peak Power Spectral Density – Channel 48 – UNII Mode – Hitachi Antenna – FCC Method



Ref Lvl 15 dBm
Marker 1 [T1] -3.49 dBm
5.26135271 GHz
RBW 1 MHz
VBW 3 MHz
SWT 5 ms
RF Att 40 dB
Unit dBm

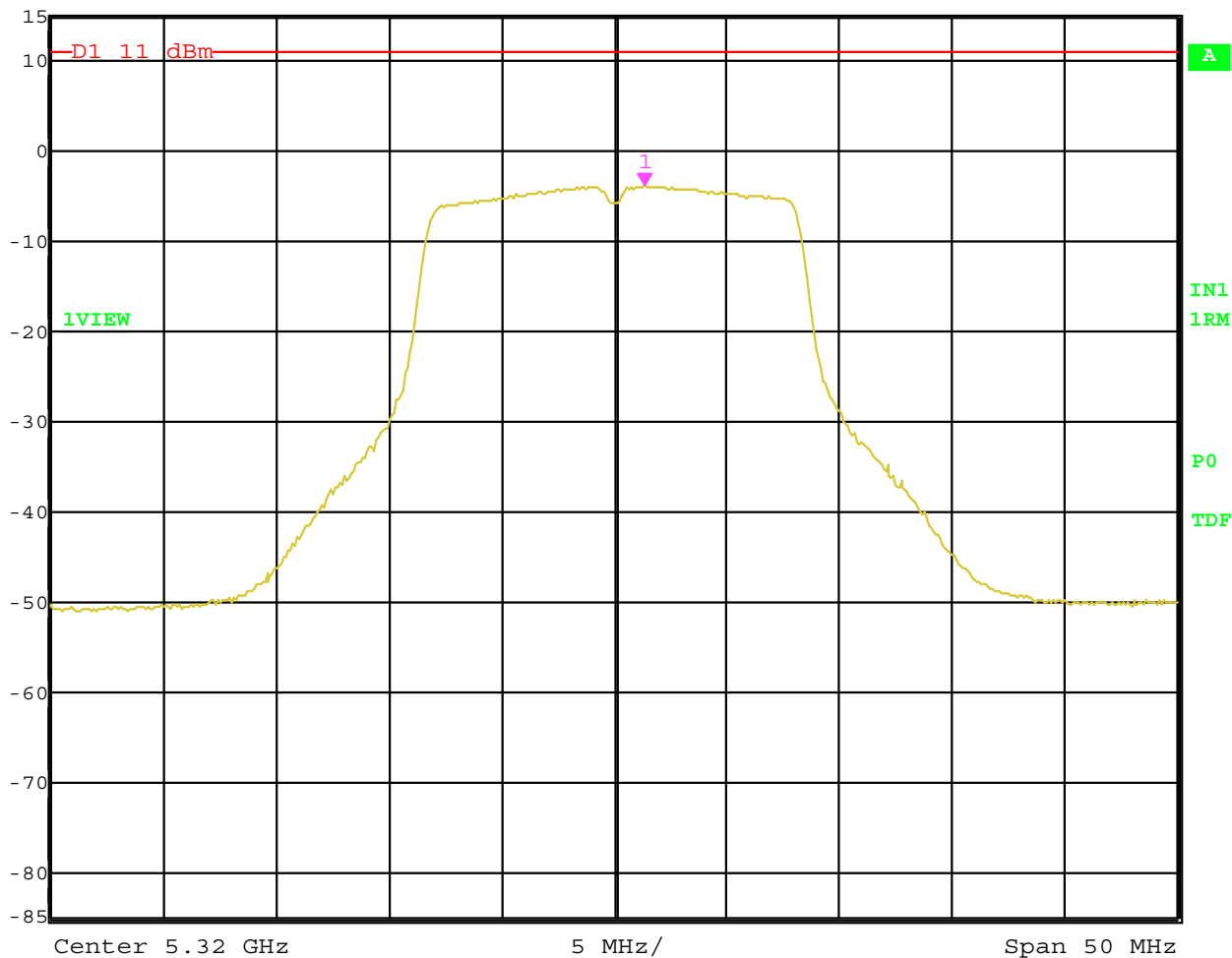


Date: 11.MAR.2005 02:40:16

Peak Power Spectral Density – Channel 52 – UNII Mode – Hitachi Antenna – FCC Method



Ref Lvl 15 dBm
Marker 1 [T1] -3.98 dBm
5.32135271 GHz
RBW 1 MHz
VBW 3 MHz
SWT 5 ms
RF Att 40 dB
Unit dBm

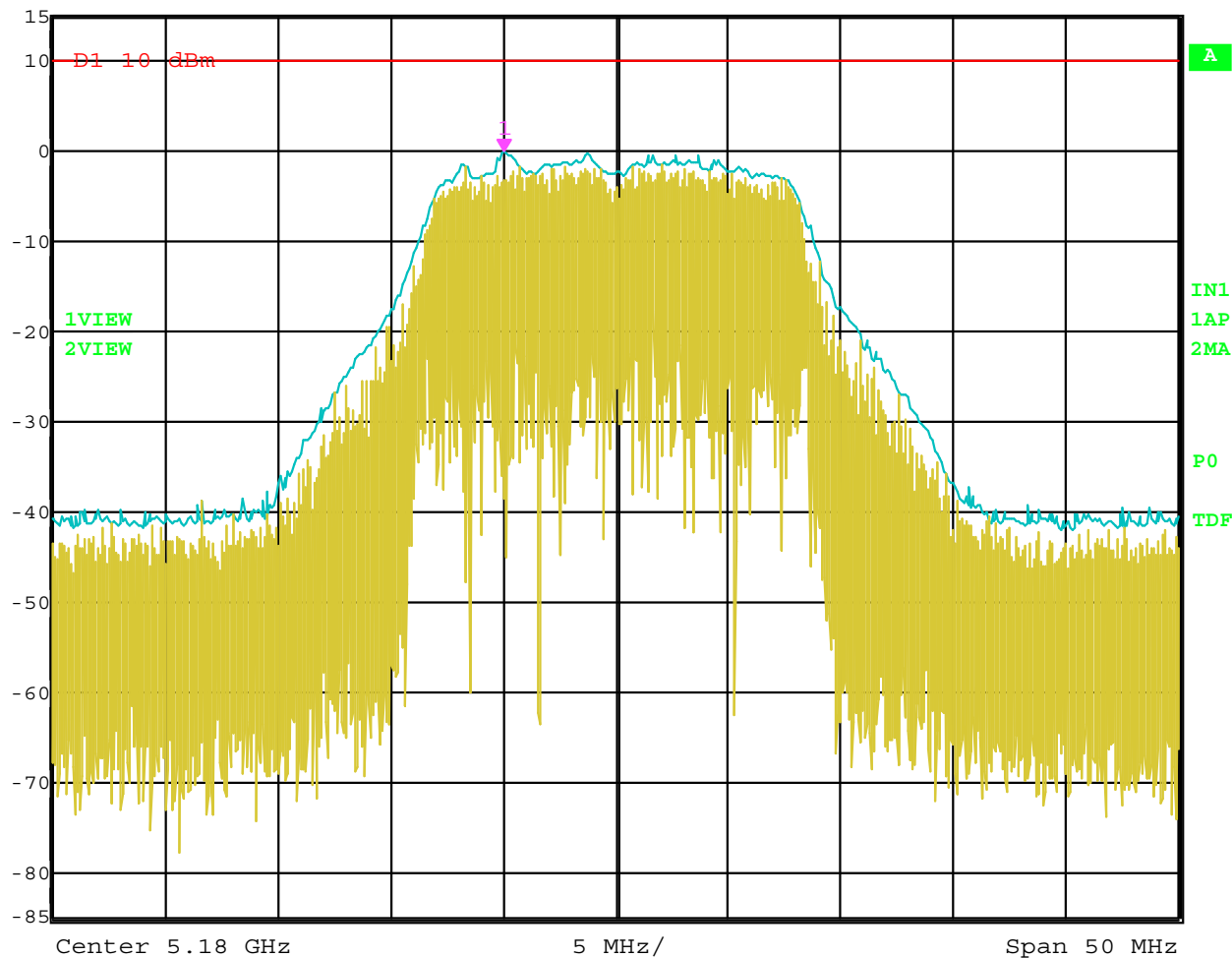


Date: 11.MAR.2005 02:39:44

Peak Power Spectral Density – Channel 64 – UNII Mode – Hitachi Antenna – FCC Method



Ref Lvl 15 dBm
Marker 1 [T2] -0.25 dBm
5.17504008 GHz
RBW 1 MHz
VBW 1 MHz
SWT 5 ms
RF Att 40 dB
Unit dBm

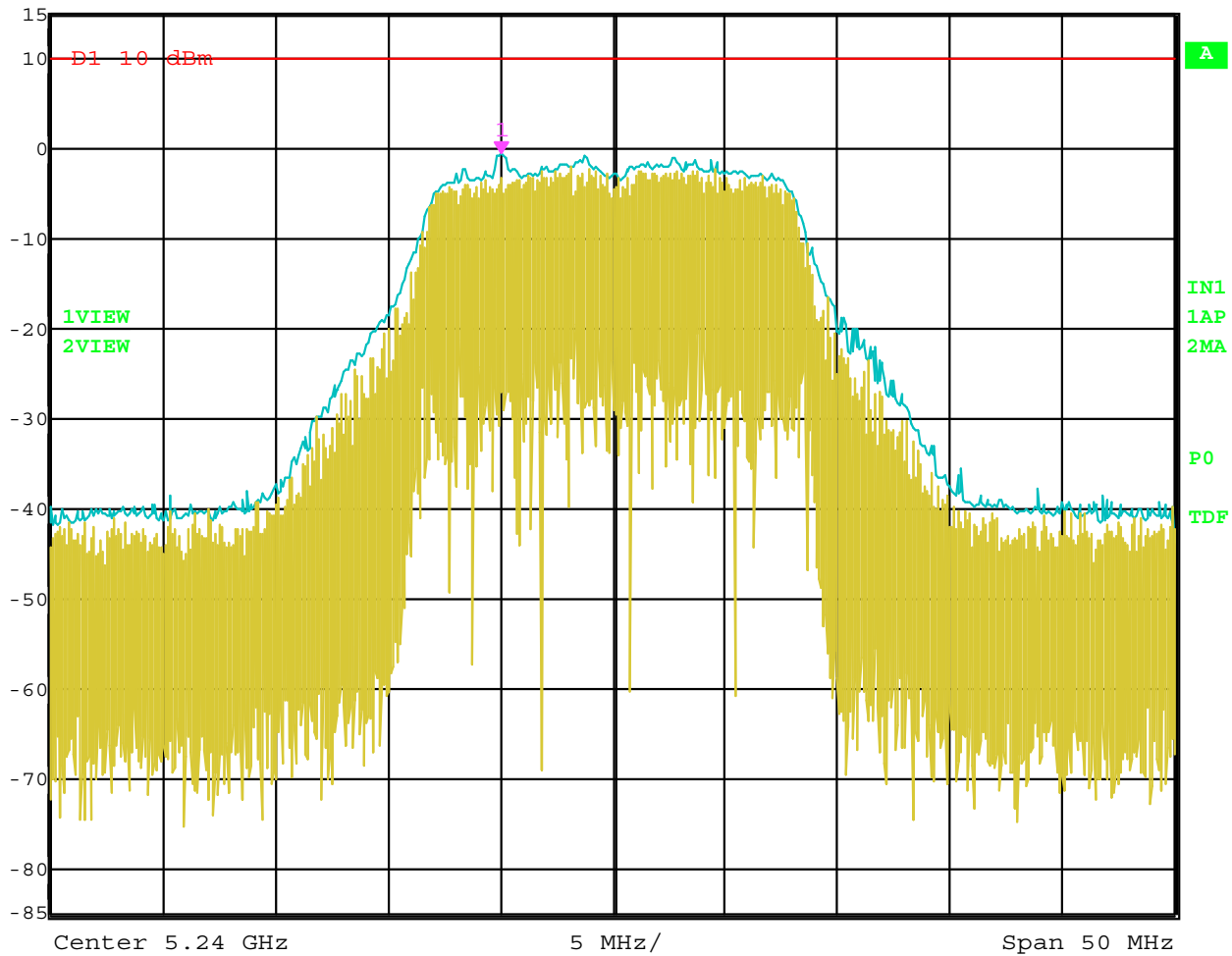


Date: 11.MAR.2005 02:44:54

Peak Power Spectral Density – Channel 36 – UNII Mode – Hitachi Antenna – RSS-210 Method



Ref Lvl	Marker 1 [T2]	RBW	1 MHz	RF Att	40 dB
15 dBm	-0.67 dBm	VBW	1 MHz		
	5.23504008 GHz	SWT	5 ms	Unit	dBm

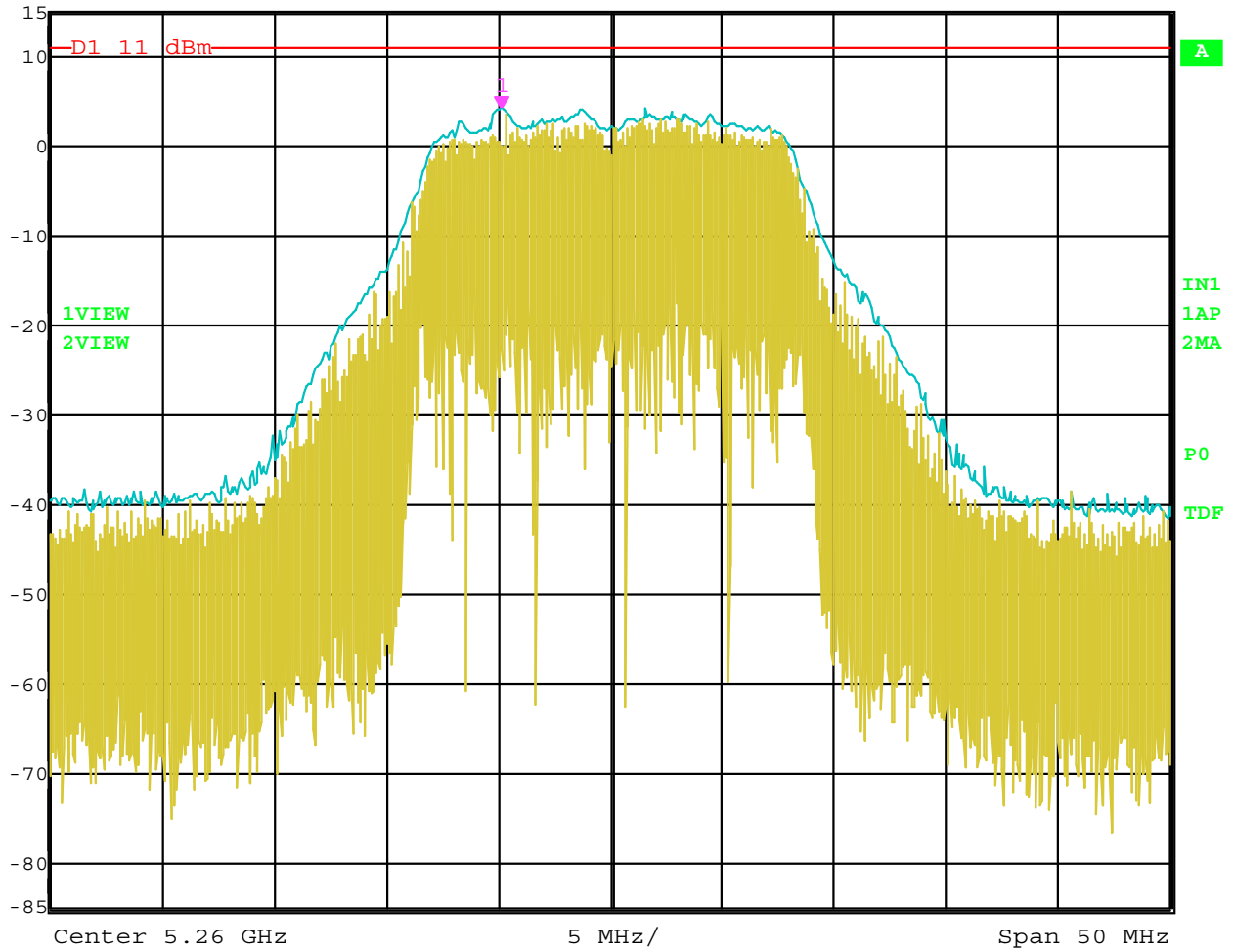


Date: 11.MAR.2005 02:45:25

Peak Power Spectral Density – Channel 48 – UNII Mode – Hitachi Antenna – RSS-210 Method



Marker 1 [T2] RBW 1 MHz RF Att 40 dB
Ref Lvl 4.09 dBm VBW 1 MHz
15 dBm 5.25514028 GHz SWT 5 ms Unit dBm

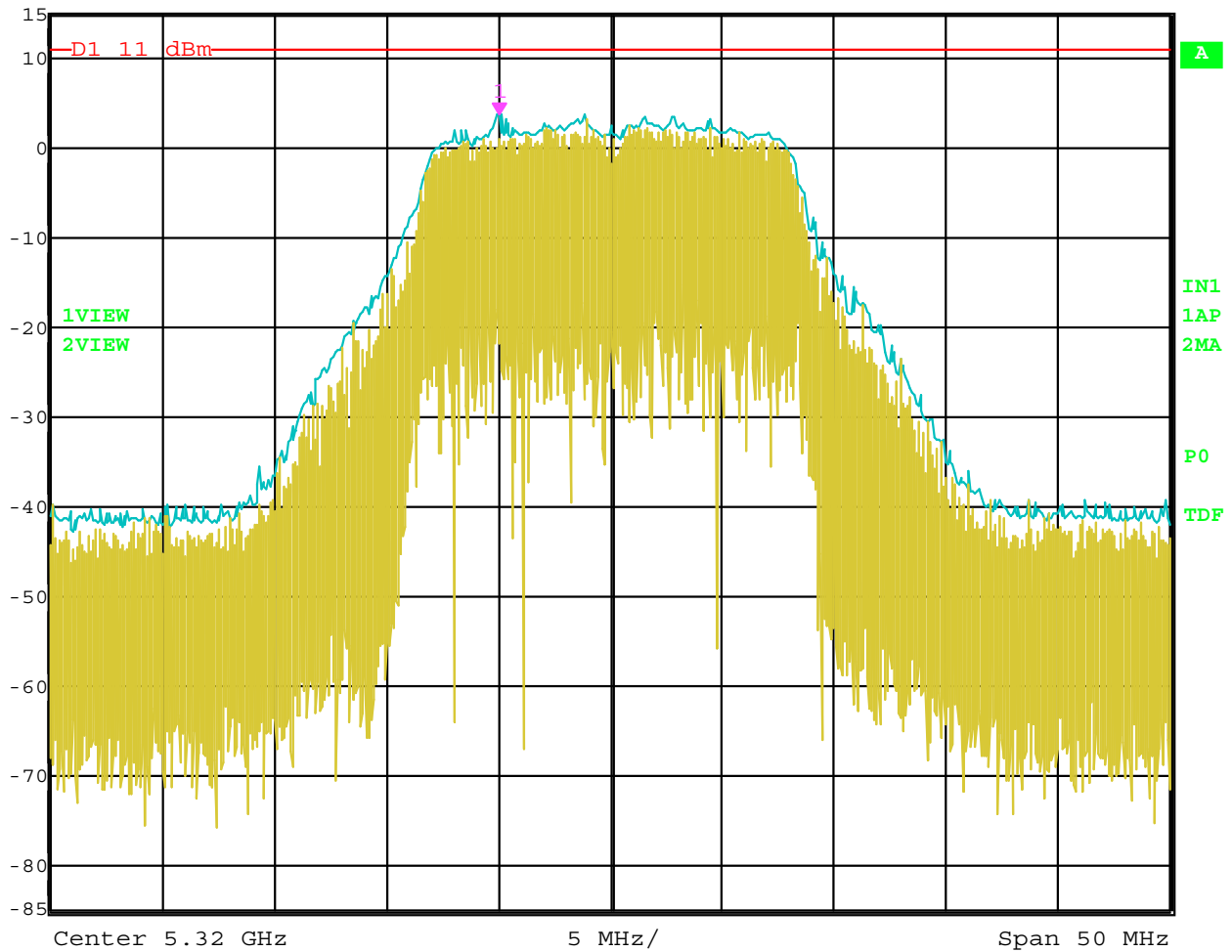


Date: 11.MAR.2005 02:46:07

Peak Power Spectral Density – Channel 52 – UNII Mode – Hitachi Antenna – RSS-210 Method

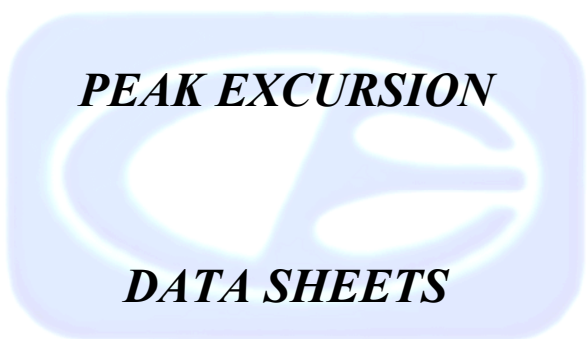


Ref Lvl	Marker 1 [T2]	RBW	1 MHz	RF Att	40 dB
15 dBm	3.67 dBm	VBW	1 MHz		
	5.31504008 GHz	SWT	5 ms	Unit	dBm



Date: 11.MAR.2005 02:46:39

Peak Power Spectral Density – Channel 64 – UNII Mode – Hitachi Antenna – RSS-210 Method

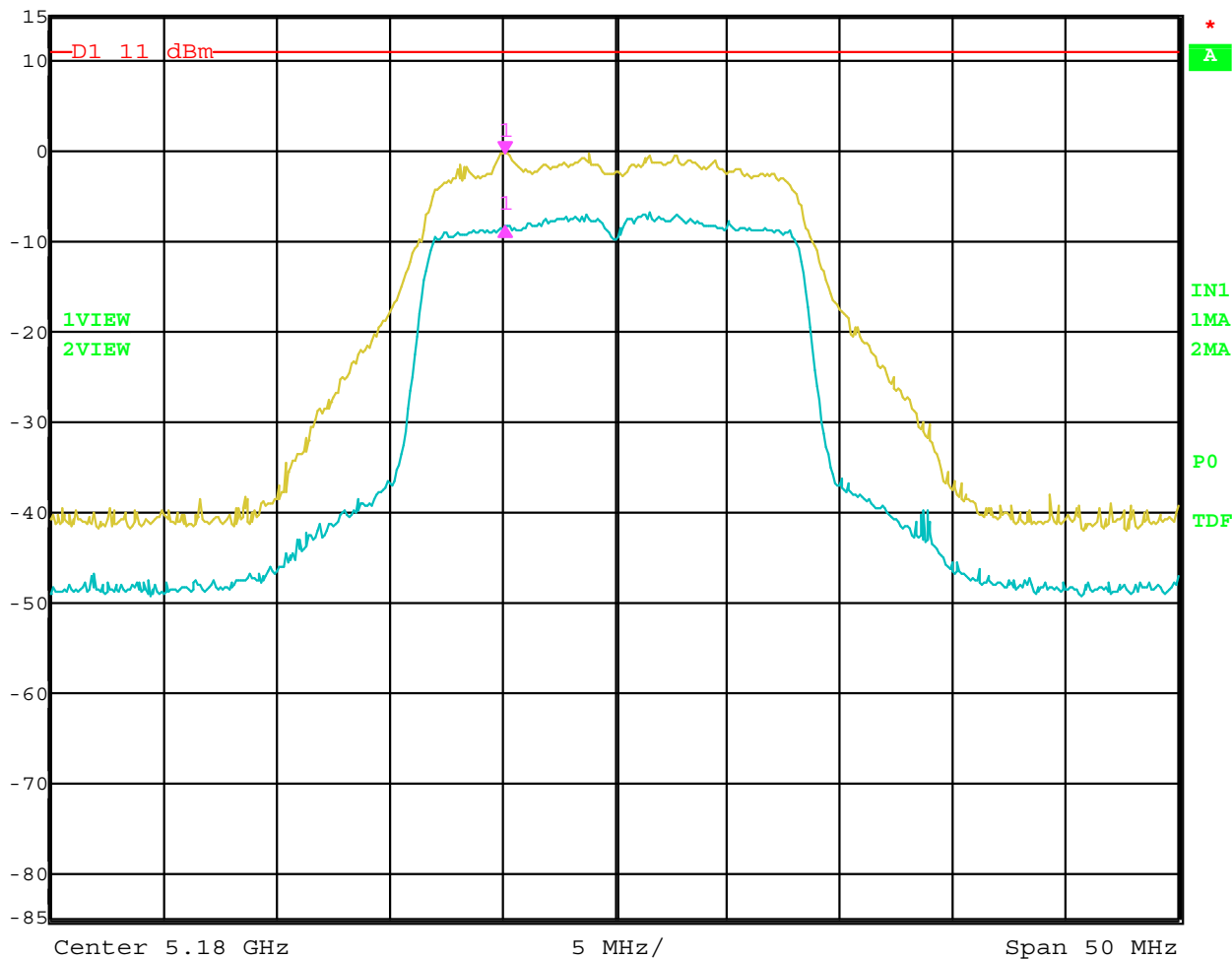


PEAK EXCURSION

DATA SHEETS



Delta 1 [T2] RBW 1 MHz RF Att 40 dB
Ref Lvl -8.16 dB VBW 30 kHz
15 dBm 0.00000000 Hz SWT 5 ms Unit dBm

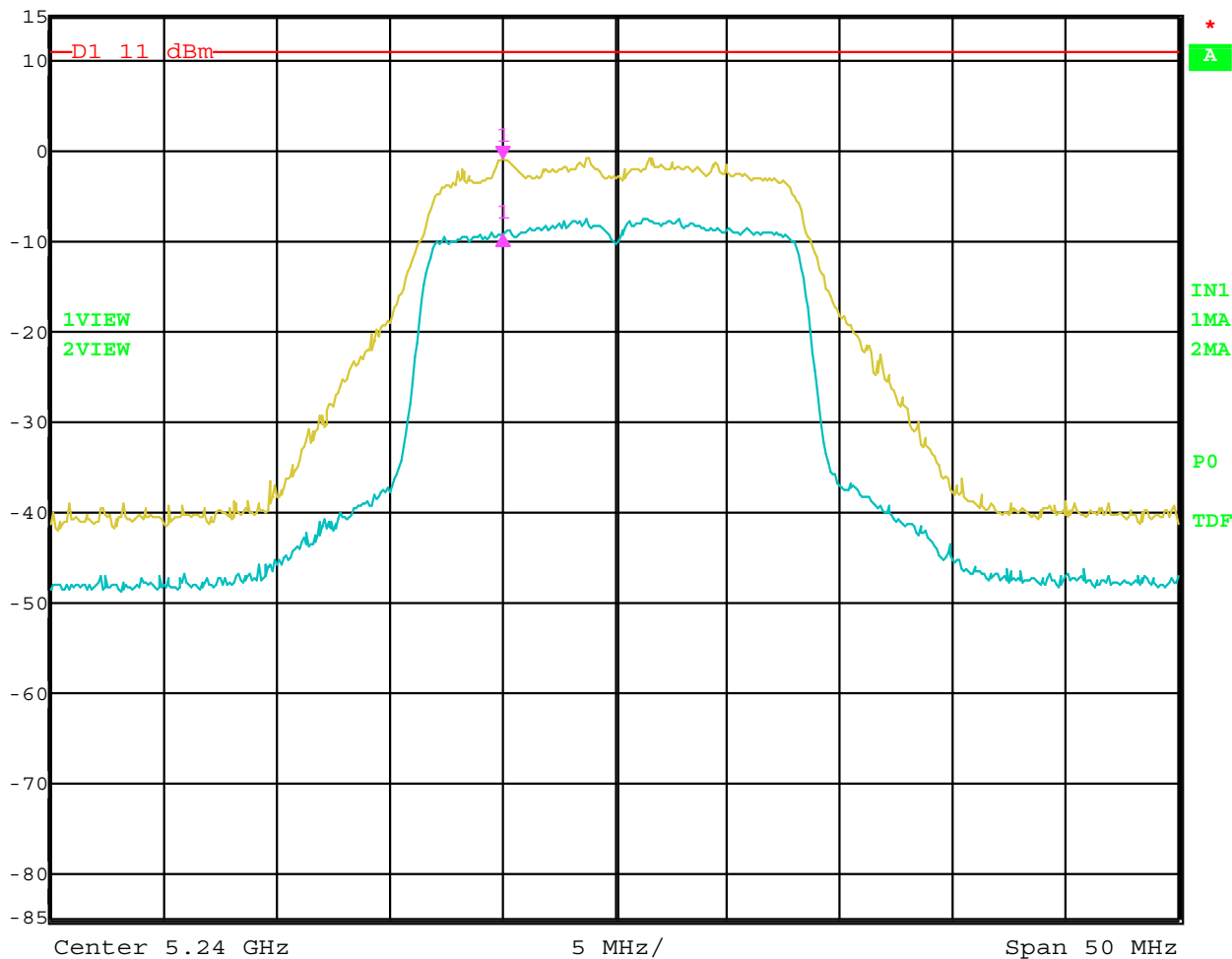


Date: 11.MAR.2005 03:38:44

Peak Excursion – Channel 36 – UNII Mode – Hitachi Antenna



Ref Lvl 15 dBm
Delta 1 [T2] -8.54 dB
0.00000000 Hz
RBW 1 MHz
VBW 30 kHz
SWT 5 ms
RF Att 40 dB
Unit dBm

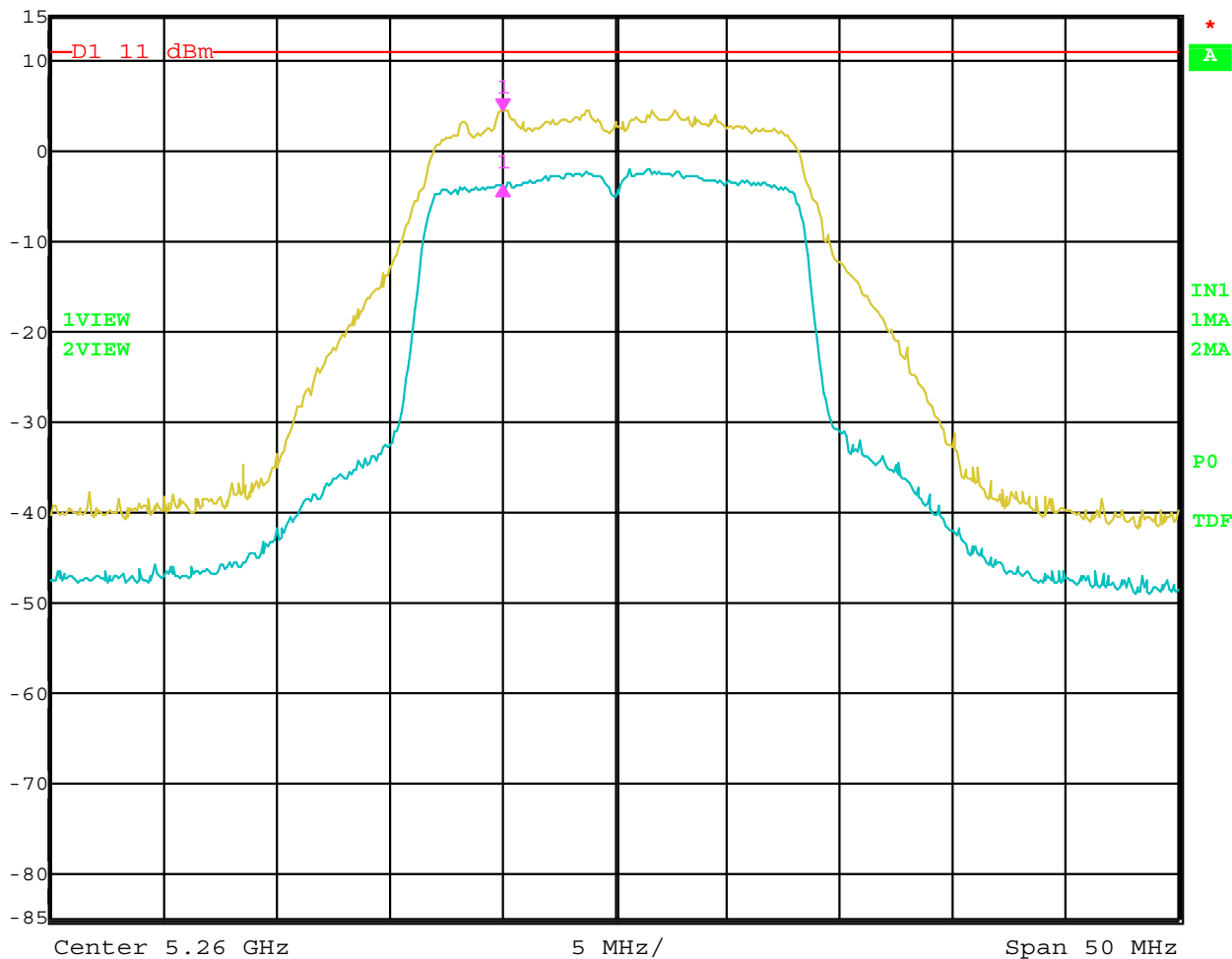


Date: 11.MAR.2005 03:37:45

Peak Excursion – Channel 48 – UNII Mode – Hitachi Antenna



Delta 1 [T2] RBW 1 MHz RF Att 40 dB
Ref Lvl -8.30 dB VBW 30 kHz
15 dBm 0.00000000 Hz SWT 5 ms Unit dBm

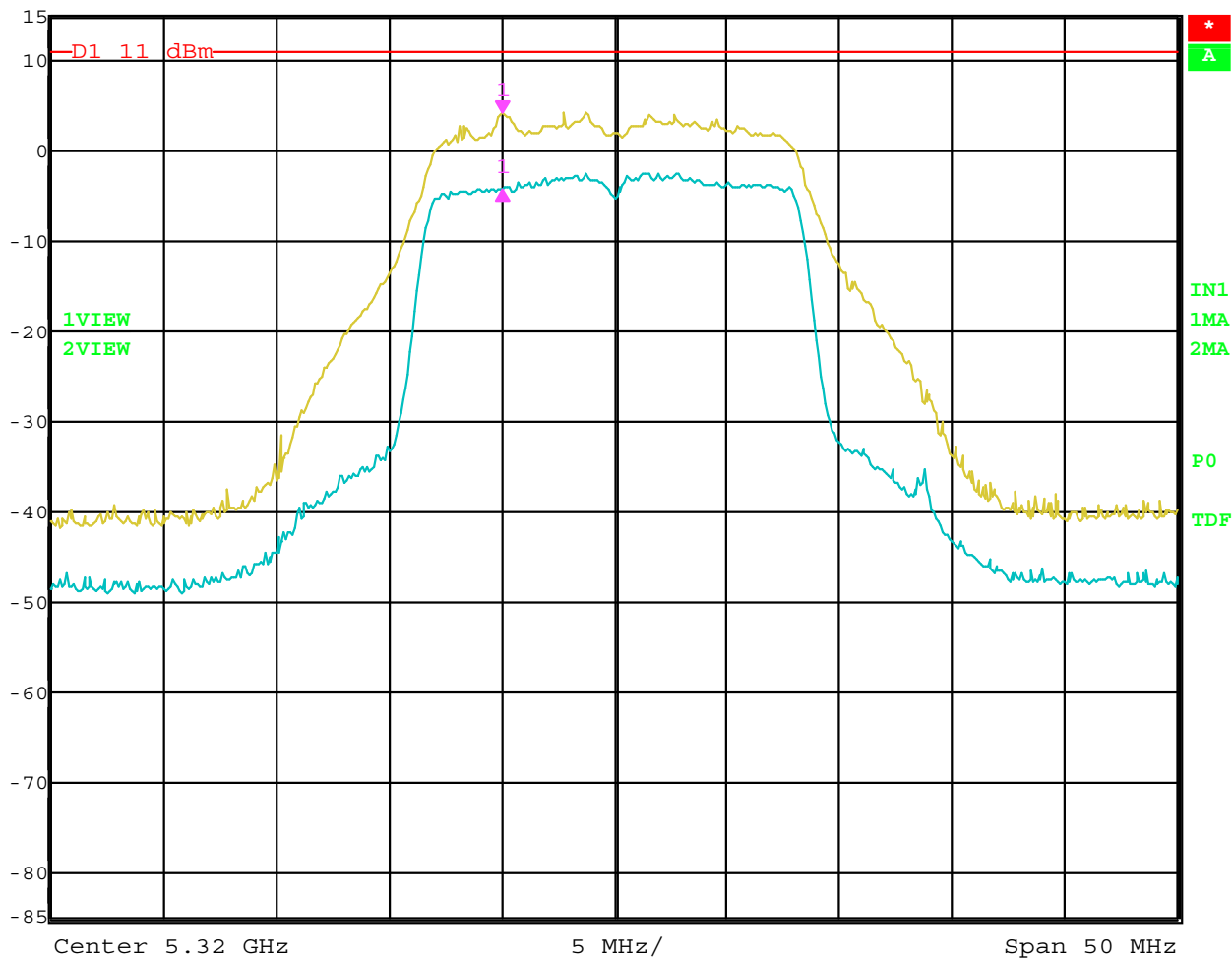


Date: 11.MAR.2005 03:36:41

Peak Excursion – Channel 52 – UNII Mode – Hitachi Antenna

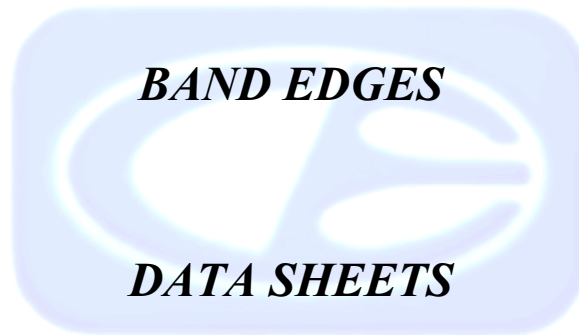


Delta 1 [T2] RBW 1 MHz RF Att 40 dB
Ref Lvl -8.49 dB VBW 30 kHz
15 dBm 0.00000000 Hz SWT 5 ms Unit dBm



Date: 11.MAR.2005 03:35:20

Peak Excursion – Channel 64 – UNII Mode – Hitachi Antenna



FCC Subpart E

Intel Corporation

Intel Mini PCI Type 3A 802.11ABG Wireless LAN Adapter

Model: WM3A2915ABG

Configuration: Dell Latitude Laptop D510 Agency Series Number: PP17L -- Main Port

Date: 3/10/05

Lab: B

Tested By: Kyle Fujimoto

With Hitachi Antenna**Channel 36 - UNII**

Gain : 1.5 Peak Power: 11.53 dBm Avg. Power: 5.18 dBm

Channel 48 - UNII

Gain : 1.5 Peak Power: 11.10 dBm Avg. Power: 4.73 dBm

Channel 52 - UNII

Gain : 6.5 Peak Power: 16.02 dBm Avg. Power: 9.61 dBm

Channel 64 - UNII

Gain : 6.5 Peak Power: 16.16 dBm Avg. Power: 9.73 dBm

Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
5180	95.69	V	--	--	Peak	1.21	135	Fundamental - Channel 36
5180	84.87	V	--	--	Avg	1.21	135	Fundamental - Channel 36
5150	50.89	V	74	-23.11	Peak	1.21	135	Band Edge Channel 36
5150	38.54	V	54	-15.46	Avg	1.21	135	Band Edge Channel 36
5240	94.89	V	--	--	Peak	1.85	135	Fundamental - Channel 48
5240	83.58	V	--	--	Avg	1.85	135	Fundamental - Channel 48
5260	100.04	V	--	--	Peak	1.87	135	Fundamental - Channel 52
5260	89.6	V	--	--	Avg.	1.87	135	Fundamental - Channel 52
5320	98.7	V	--	--	Peak	1.72	135	Fundamental - Channel 64
5320	87.48	V	--	--	Avg	1.72	135	Fundamental - Channel 64
5350	50.44	V	74	-23.56	Peak	1.72	135	Band Edge Channel 64
5350	39.88	V	54	-14.12	Avg	1.72	135	Band Edge Channel 64
5433.05	54.41	V	74	-19.59	Peak	1.72	135	Band Edge Channel 64
5359.93	41.29	V	54	-12.71	Avg	1.72	135	Band Edge Channel 64

FCC Subpart E

Intel Corporation

Intel Mini PCI Type 3A 802.11ABG Wireless LAN Adapter

Model: WM3A2915ABG

Configuration: Dell Latitude Laptop D510 Agency Series Number: PP17L -- Main Port

Date: 3/10/05

Lab: B

Tested By: Kyle Fujimoto

With Hitachi Antenna**Channel 36 - UNII**

Gain : 1.5 Peak Power: 11.53 dBm Avg. Power: 5.18 dBm

Channel 48 - UNII

Gain : 1.5 Peak Power: 11.10 dBm Avg. Power: 4.73 dBm

Channel 52 - UNII

Gain : 6.5 Peak Power: 16.02 dBm Avg. Power: 9.61 dBm

Channel 64 - UNII

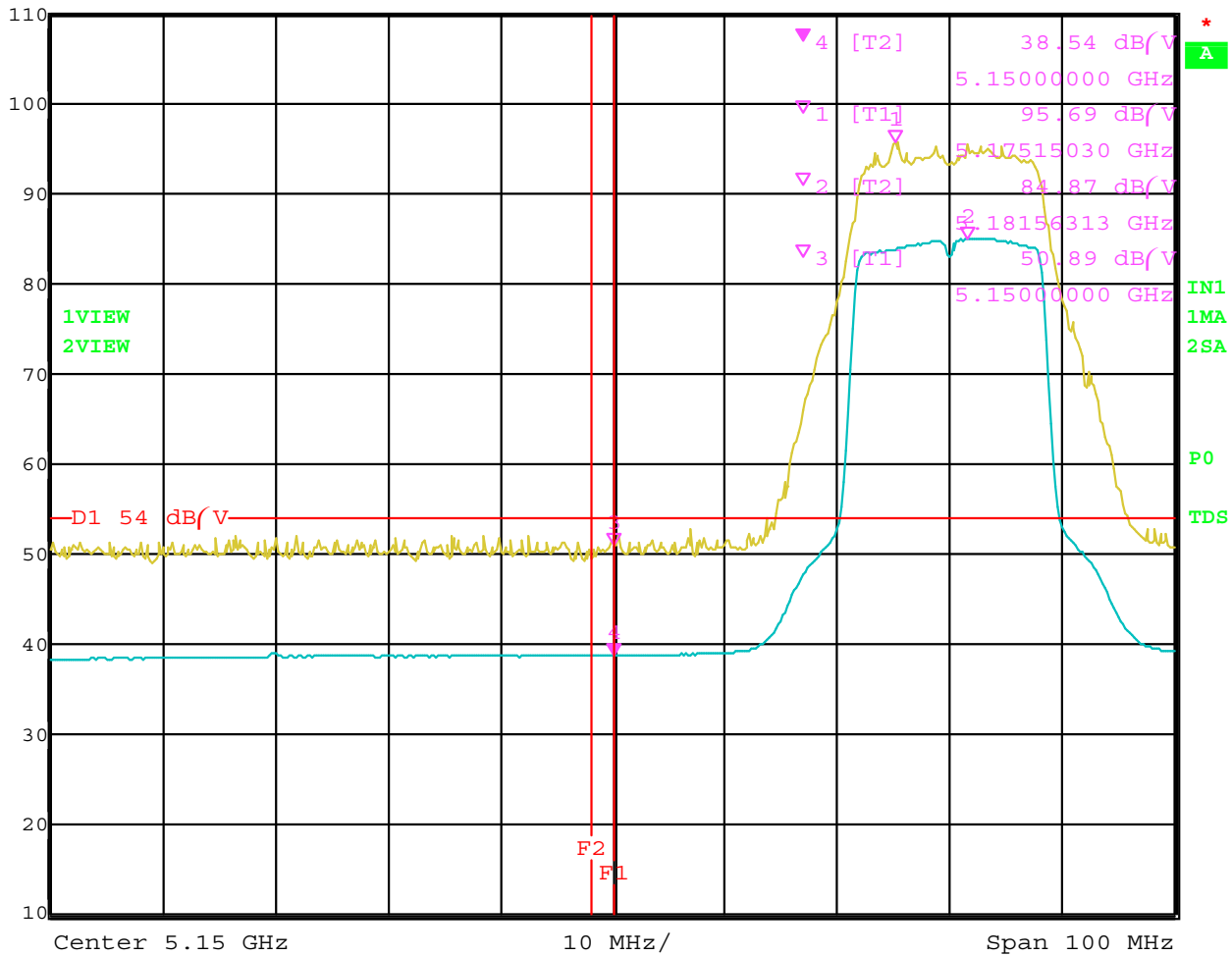
Gain : 6.5 Peak Power: 16.16 dBm Avg. Power: 9.73 dBm

Transmit Mode

Freq. (MHz)	Level (dBuV)	Pol (v/h)	Limit	Margin	Peak / QP / Avg	Ant. Height (m)	Table Angle (deg)	Comments
5180	95.44	H	--	--	Peak	1.34	90	Fundamental - Channel 36
5180	84.37	H	--	--	Avg	1.34	90	Fundamental - Channel 36
5150	49.78	H	74	-24.22	Peak	1.34	90	Band Edge Channel 36
5150	38.61	H	54	-15.39	Avg	1.34	90	Band Edge Channel 36
5240	94.12	H	--	--	Peak	1.37	270	Fundamental - Channel 48
5240	83.44	H	--	--	Avg	1.37	270	Fundamental - Channel 48
5260	99.4	H	--	--	Peak	1.36	270	Fundamental - Channel 52
5260	88.53	H	--	--	Avg.	1.36	270	Fundamental - Channel 52
5320	98.37	H	--	--	Peak	1.29	90	Fundamental - Channel 64
5320	87.32	H	--	--	Avg	1.29	90	Fundamental - Channel 64
5350	52.68	H	74	-21.32	Peak	1.29	90	Band Edge Channel 64
5350	40.07	H	54	-13.93	Avg	1.29	90	Band Edge Channel 64
5425.99	55.55	H	74	-18.45	Peak	1.29	90	Band Edge Channel 64
5430.2	42.65	H	54	-11.35	Avg	1.29	90	Band Edge Channel 64



Ref Lvl 110 dB/V
Marker 4 [T2] 38.54 dB/V
5.15000000 GHz
RBW 1 MHz
VBW 10 Hz
SWT 25 s
RF Att 20 dB
Unit dB/V

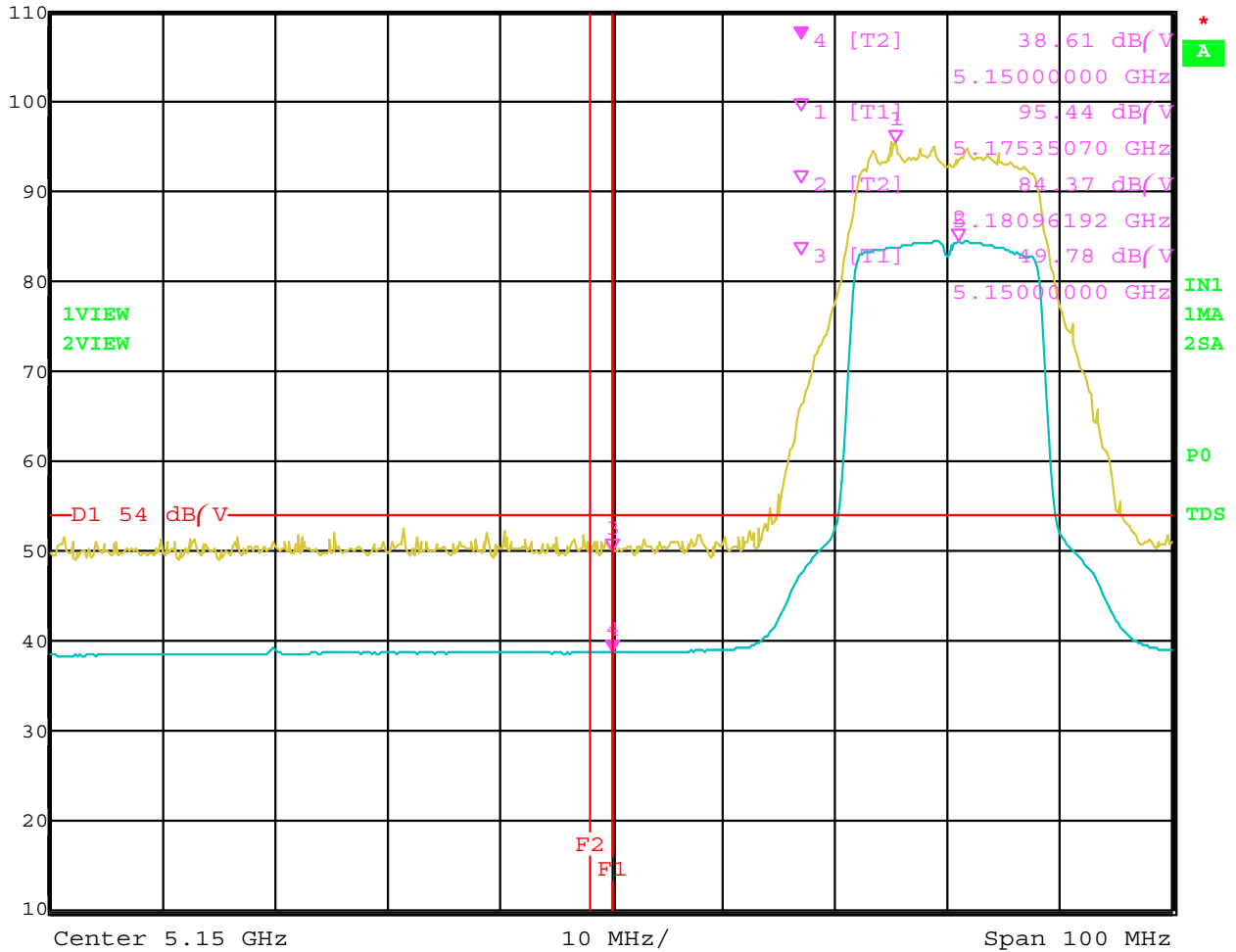


Date: 10.MAR.2005 07:43:51

Band Edge – Channel 36 – UNII Mode – Vertical Polarization – Hitachi Antenna



Ref Lvl 110 dB/V
Marker 4 [T2] 38.61 dB/V
5.1500000 GHz
RBW 1 MHz
VBW 10 Hz
SWT 25 s
RF Att 20 dB
Unit dB/V

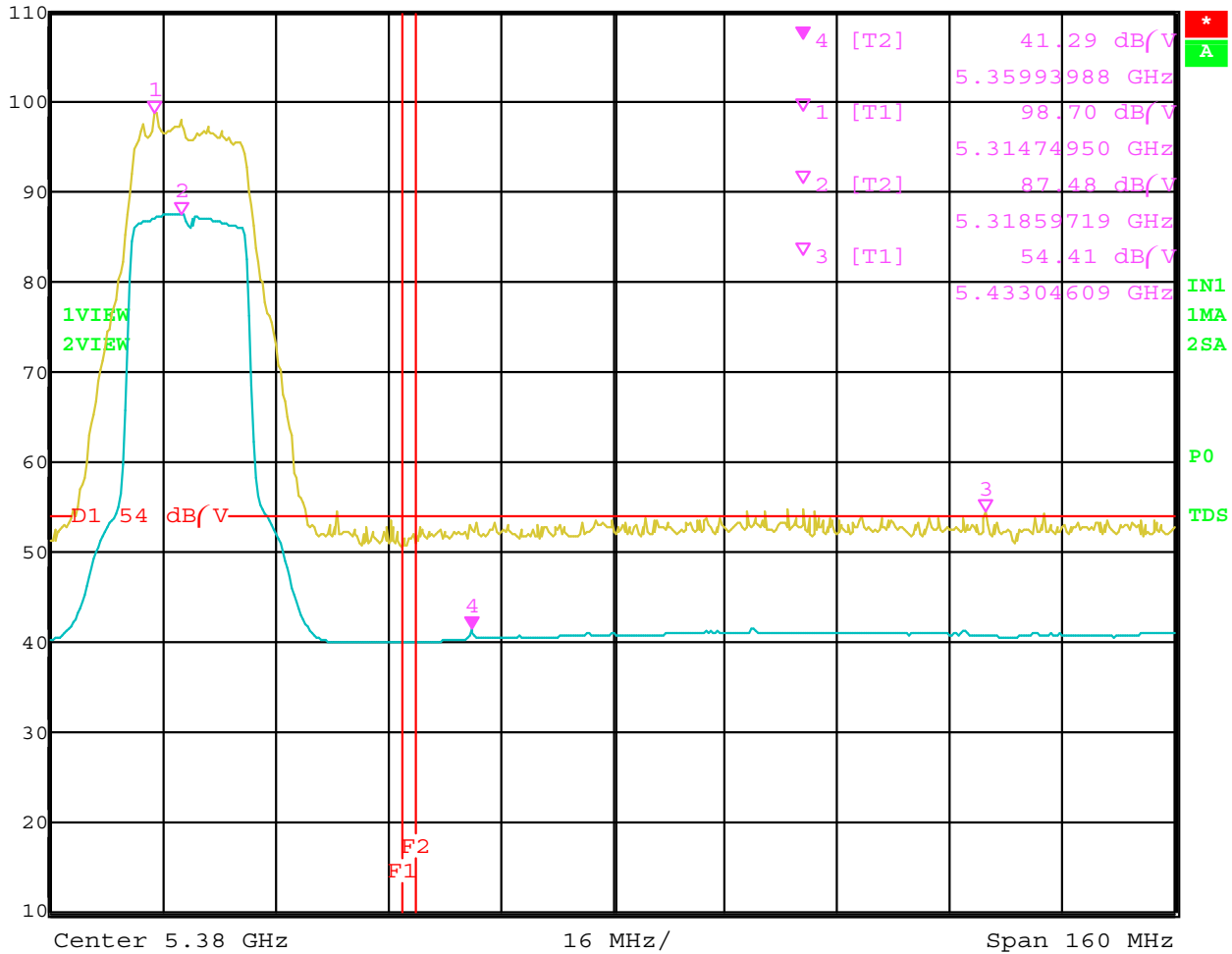


Date: 10.MAR.2005 07:21:07

Band Edge – Channel 36 – UNII Mode – Horizontal Polarization – Hitachi Antenna



Ref Lvl 110 dB/V
Marker 4 [T2] 41.29 dB/V
5.35993988 GHz
RBW 1 MHz
VBW 10 Hz
SWT 40 s
RF Att 20 dB
Unit dB/V

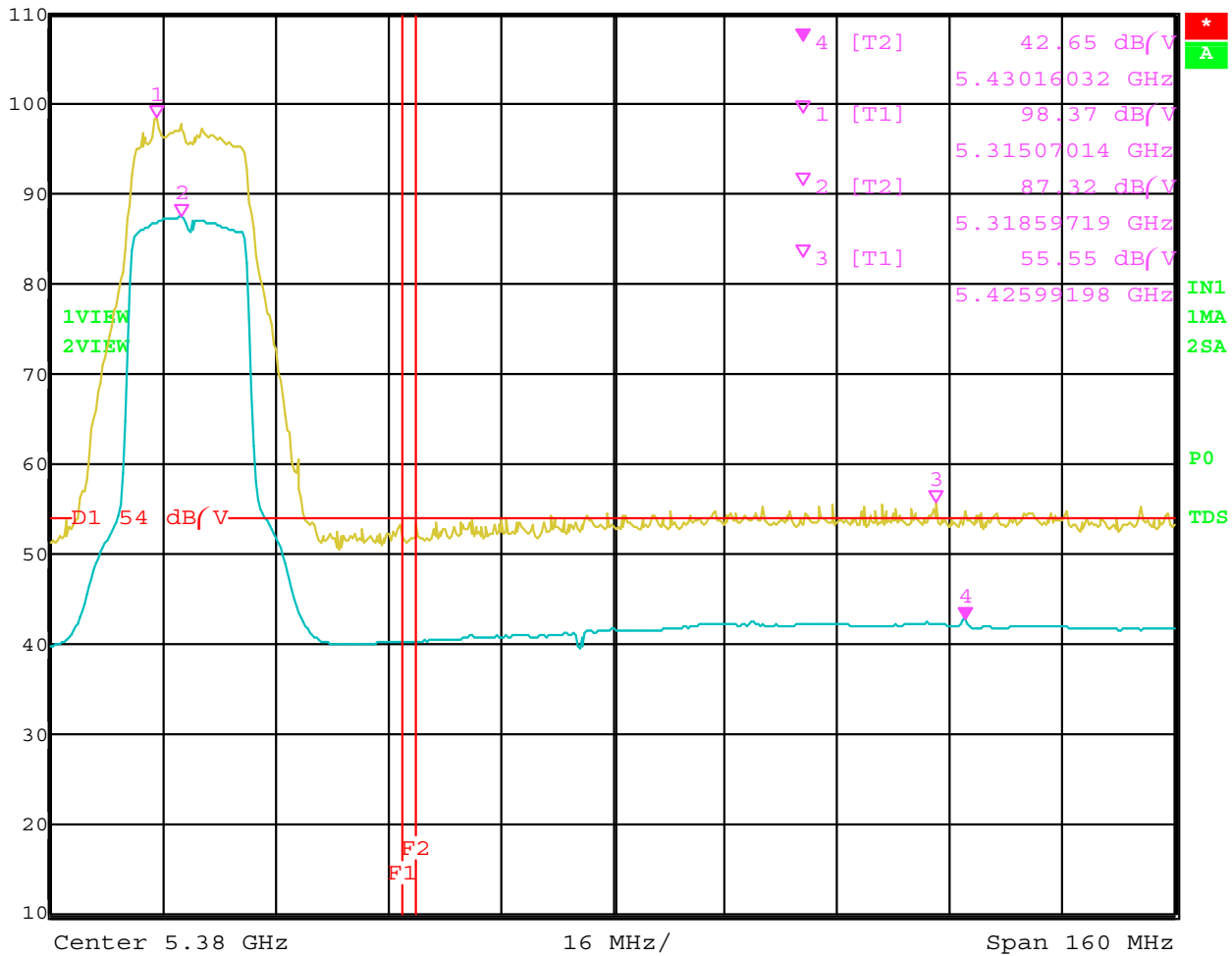


Date: 10.MAR.2005 07:54:21

Band Edge – Channel 64 – UNII Mode – Vertical Polarization – Hitachi Antenna



Ref Lvl 110 dB/V
Marker 4 [T2] 42.65 dB/V
5.43016032 GHz
RBW 1 MHz
VBW 10 Hz
SWT 40 s
RF Att 20 dB
Unit dB/V



Date: 10.MAR.2005 07:32:53

Band Edge – Channel 64 – UNII Mode – Horizontal Polarization – Hitachi Antenna