



Test Report: 4W31182


Applicant: BelAir Networks
603 March Road,
Kanata Ont.
K2K 2M5

**Equipment Under Test:
(EUT)** Wireless LAN Access Radio Module 2 (ARM2)
2.4GHz Band

FCC ID: RAR2000002

In Accordance With: FCC Part 15, Subpart C
Digitally Modulated Transmitters, 2400-2483.5MHz

Tested By: Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2



Authorized By: Sim Jagpal, General Manager

Date: 8 November 2004

Total Number of Pages: 56

Table Of Contents

Section 1. Summary Of Test Results3

Section 2. General Equipment Specification5

Section 3. Powerline Conducted Emissions6

Section 4. Occupied Bandwidth10

Section 5. Peak Power Output16

Section 6. Spurious Emissions (Antenna Conducted).....17

Section 7. Spurious Emissions (Radiated)22

Section 8. Transmitter Power Density47

Section 9. RF Exposure Evaluation52

Section 10. Block Diagrams.....54

Section 11. Test Equipment List56

EQUIPMENT: ARM2

Section 1. Summary Of Test Results

General

All measurements are traceable to national standards.

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15, Subpart C, Paragraph 15.247 for Digitally Modulated Transmitters.

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".



TESTED BY: _____
Glen Westwell, Wireless Specialist

DATE: 8 November 2004

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This report applies only to the items tested.

EQUIPMENT: ARM2

Summary Of Test Data

Name Of Test	Para. No.	Result
Powerline Conducted Emissions	15.207 (a)	Complies
Occupied Bandwidth	15.247 (a)(2)	Complies
Peak Power Output	15.247 (b)(3)(4)	Complies
Spurious Emissions (Antenna Conducted)	15.247 (d)	Complies
Spurious Emissions (Radiated)	15.247 (d)	Complies
Transmitter Power Density	15.247 (e)	Complies

Note:

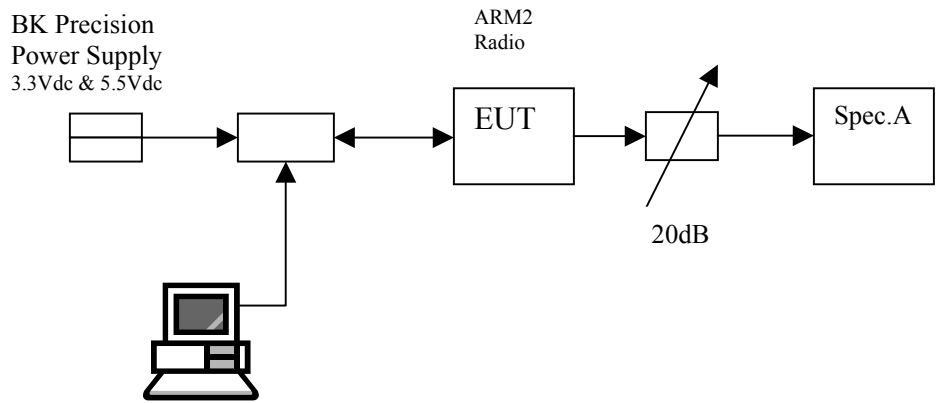
This certification is for a Limited Modular Approval. Where relevant, test data has been provided in a populated host unit to justify compliance when intergrated.

Test Conditions:

Indoor Temperature: 22°C
 Humidity: 39%

Outdoor Temperature: 14°C
 Humidity: 55%

Test Set Up Configuration



EQUIPMENT: ARM2

Section 2. General Equipment Specification

Manufacturer: BelAir Networks

Model No.: B2CC011AA

Serial No.: K000668470

Date Received In Laboratory: 12 Oct. 2004

Nemko Identification No.: #9

Modulation: **802.11b/g**
BPSK/CCK/OFDM

Transmitter Output Power (max.rated): 26dBm

Transmit Frequency: 2400-2483.5MHz (Band)
2412-2462MHz (DUT)

Antenna(s) & Gain: 4dBi Maxrad MFB2004
6dBi Maxrad MFB2006
8dBi Maxrad MFB2008
12dBi Maxrad MFB2012
8.5dBi BelAir Directional
11.5dBi BelAir Directional

EQUIPMENT: ARM2

Section 3. Powerline Conducted Emissions

Para. No.: 15.207(a)

Test Performed By: Dave Duchaines	Date of Test: 24 Sept. 2004
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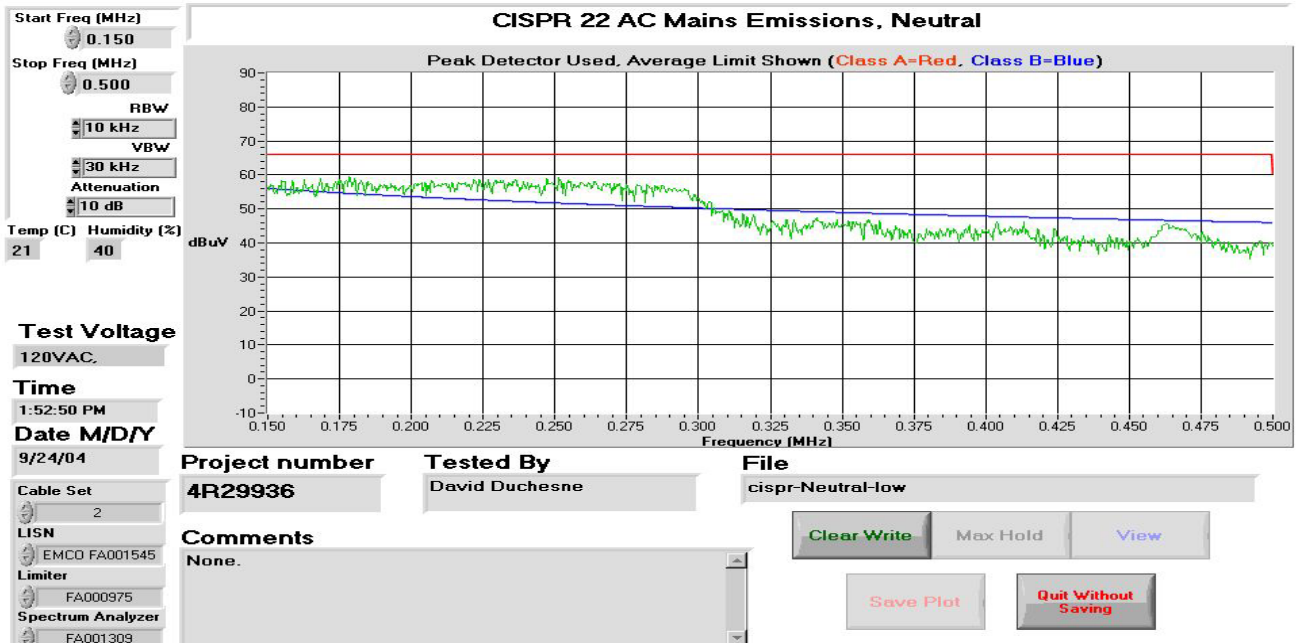
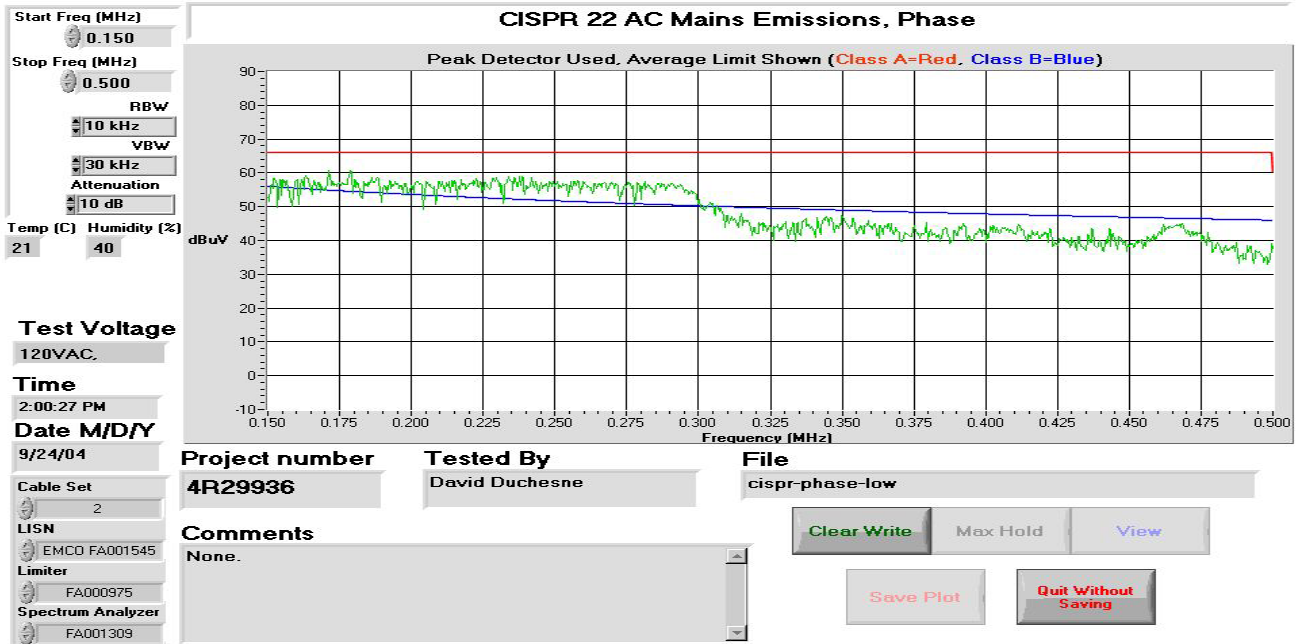
Test Results: Complies.

Measurement Data: See Attached Graphs.
Power line Conducted data was measured in a fully integrated host unit.



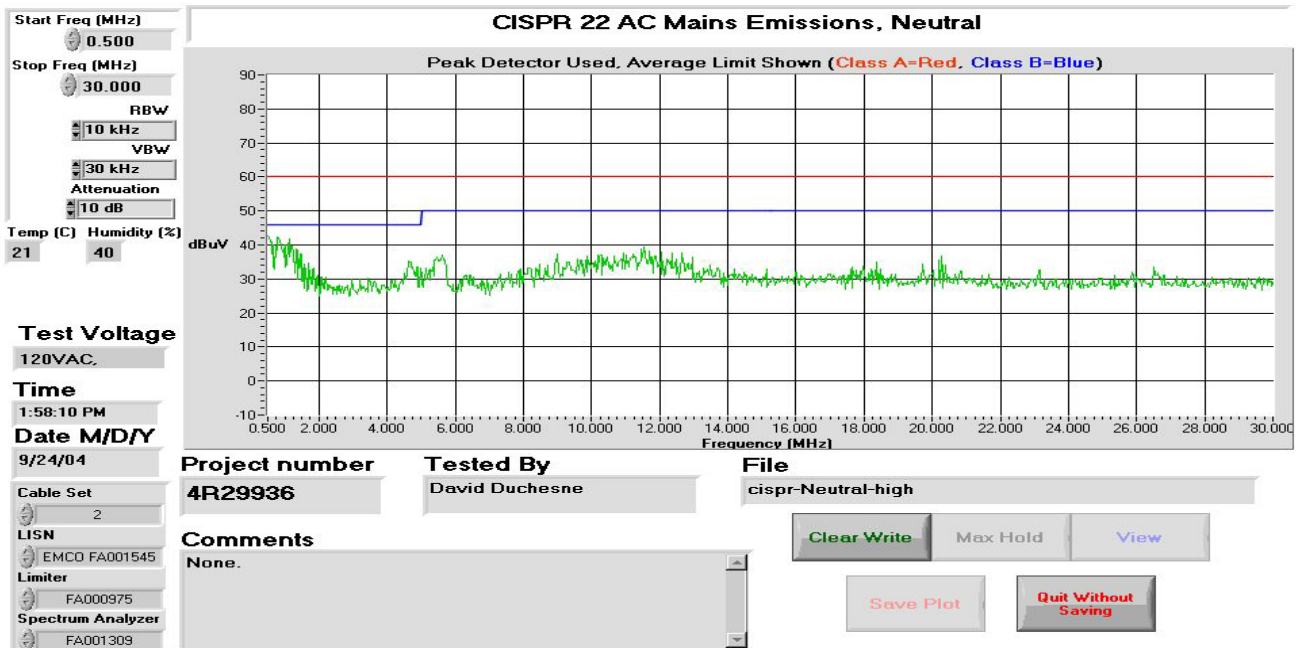
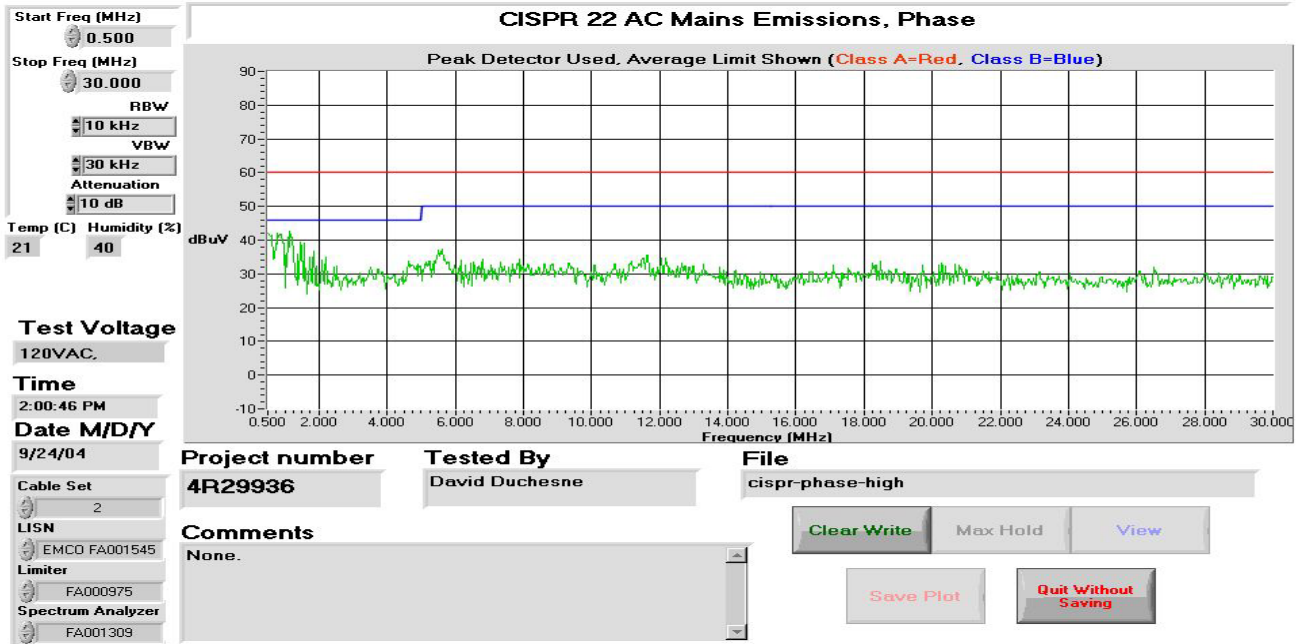
EQUIPMENT: ARM2

Conducted Disturbance at Mains Plots



EQUIPMENT: ARM2

Conducted Disturbance at Mains Plots, continued



EQUIPMENT: ARM2

Test Date: September 24, 2004									
Engineer's Name: David Duchesne									
Tested as per: Table Top									
Mains Input Voltage: 120VAC					Mains Input Frequency: 60Hz				
<i>Port Investigation Data</i>									
Port under test: AC Mains Input									
Results: Refer to plots and table of this section.									
Conductor	Frequency (MHz)	Detector	Emission Level (dBuV)	LISN Loss (dB)	Cable Loss (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	
Phase	0.1500	Quasi-Peak	44.8	0.1	0	44.9	66.0	21.1	
		Average	14.4	0.1	0	14.5	56.0	41.5	
	0.1721	Quasi-Peak	49	0.1	0	49.1	64.9	15.8	
		Average	44.3	0.1	0	44.4	54.9	10.5	
	0.2295	Quasi-Peak	47.4	0	0	47.4	62.5	15.1	
		Average	42.2	0	0	42.2	52.5	10.3	
	0.3444	Quasi-Peak	44.7	0	0.2	44.9	59.1	14.2	
		Average	38.1	0	0.2	38.3	49.1	10.8	
	0.4598	Quasi-Peak	42.9	0	0.2	43.1	56.7	13.6	
		Average	37.6	0	0.2	37.8	46.7	8.9	
	Neutral	0.1500	Quasi-Peak	43.7	0.1	0	43.8	66.0	22.2
			Average	14	0.1	0	14.1	56.0	41.9
0.1721		Quasi-Peak	48.2	0.1	0	48.3	64.9	16.6	
		Average	44.1	0.1	0	44.2	54.9	10.7	
0.2295		Quasi-Peak	46.4	0.1	0	46.5	62.5	16.0	
		Average	38.3	0.1	0	38.4	52.5	14.1	
0.3444		Quasi-Peak	44.4	0.1	0.2	44.7	59.1	14.4	
		Average	37.7	0.1	0.2	38	49.1	11.1	
0.4598		Quasi-Peak	42.6	0.1	0.2	42.9	56.7	13.8	
		Average	37	0.1	0.2	37.3	46.7	9.4	
<i>Notes</i>									
None									
<i>Test Result</i>									
Final Test Result: Pass									

EQUIPMENT: ARM2

Section 4. Occupied Bandwidth

Para. No.: 15.247(a)(2)

Test Performed By: Glen Westwell	Date of Test:15 Oct. 2004
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Test Results: Complies.

Limit: Minimum 6dB BW > 500kHz

Measurement Data: See attached plot(s).

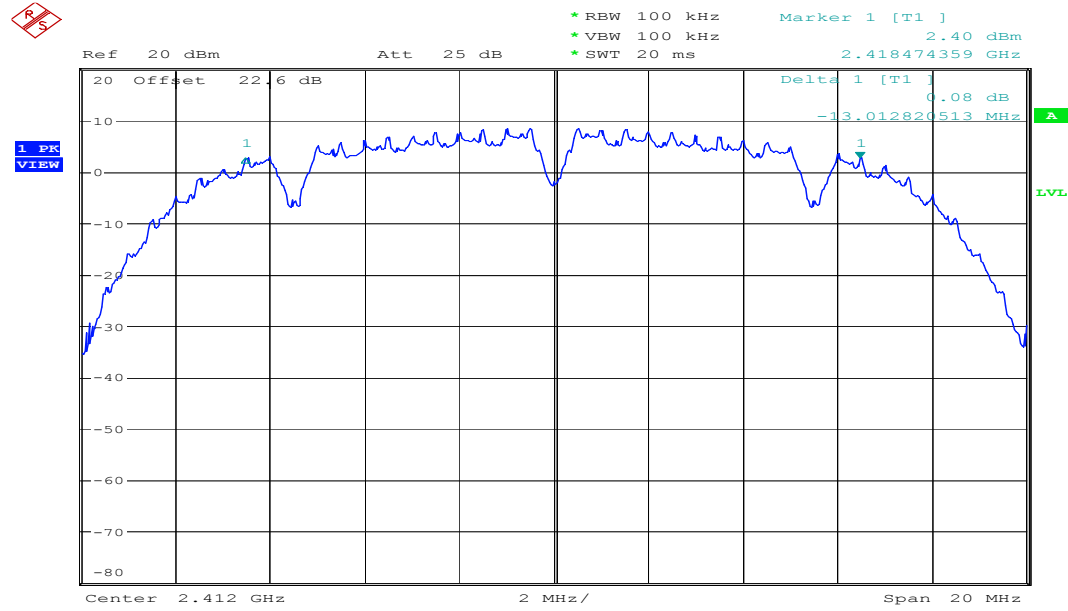
802.11b

Channel	6dB Occupied BW (MHz)
Ch1	13.0
Ch.6	12.2
Ch.11	13.0

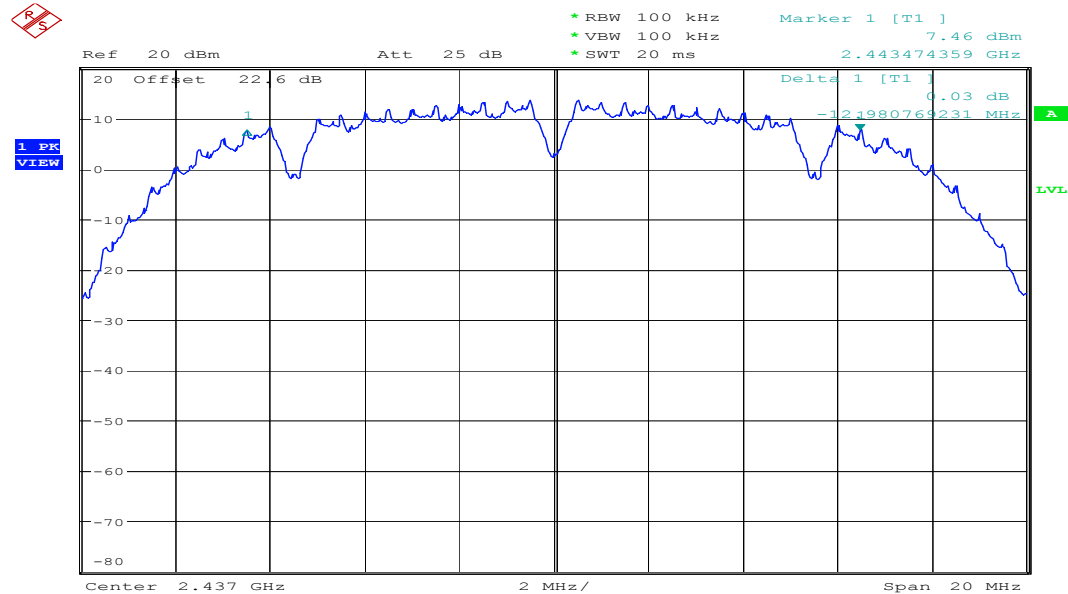
802.11g

Channel	6dB Occupied BW (MHz)
Ch1	16.5
Ch.6	16.5
Ch.11	16.5

EQUIPMENT: ARM2

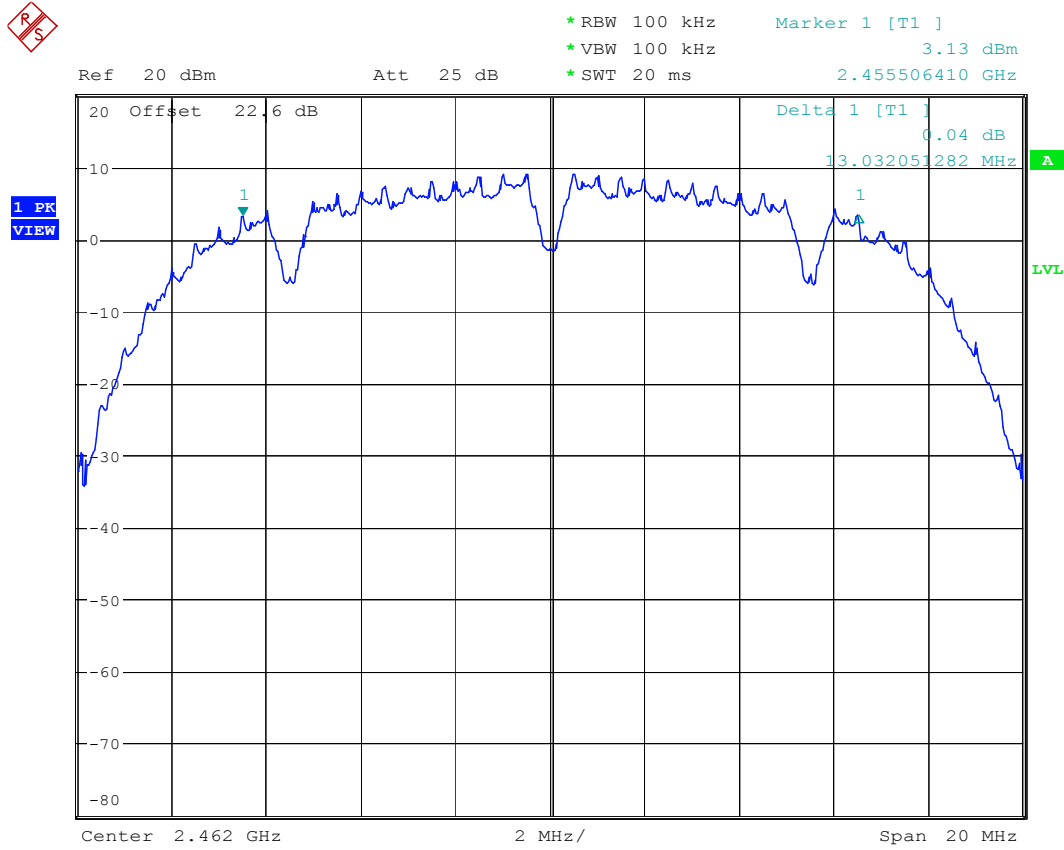


OCC BW
Date: 18.OCT.2004 11:35:18



OCC BW
Date: 18.OCT.2004 10:50:30

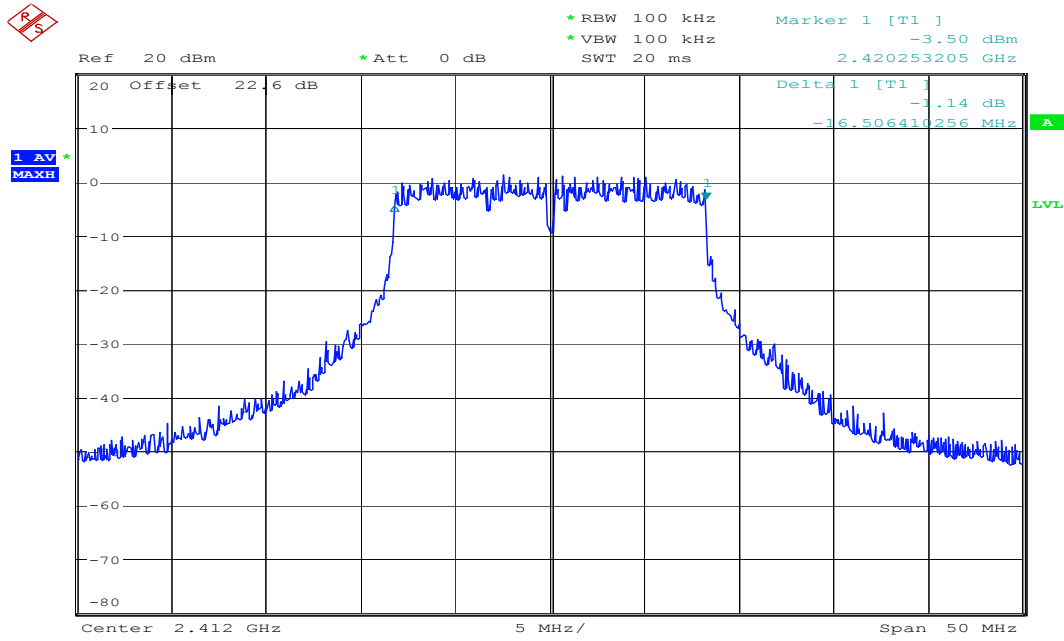
EQUIPMENT: ARM2



OCC BW

Date: 18.OCT.2004 10:48:36

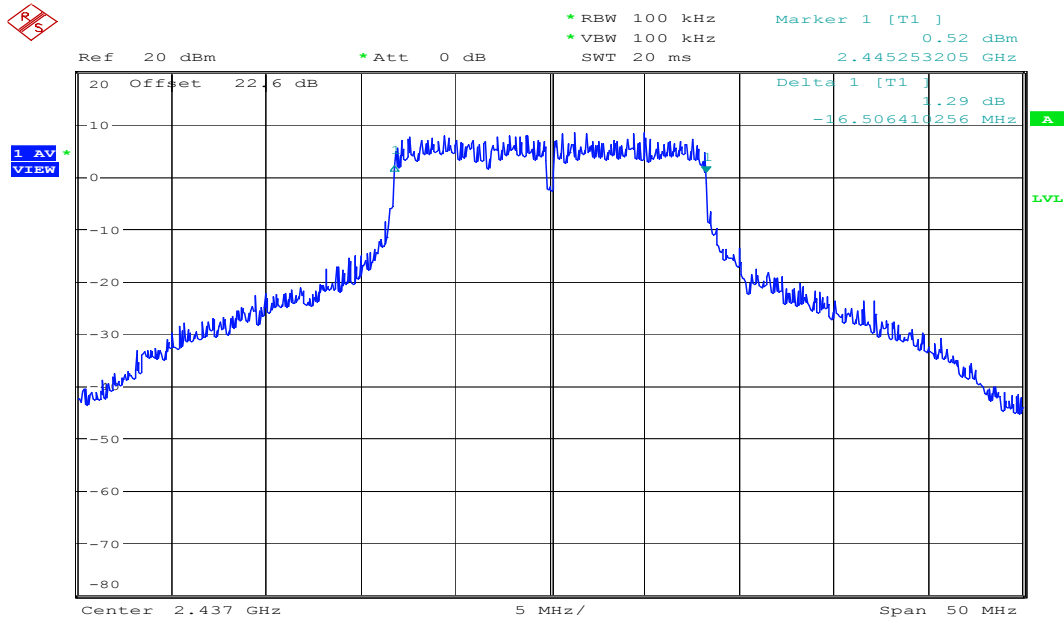
EQUIPMENT: ARM2



OCC BW

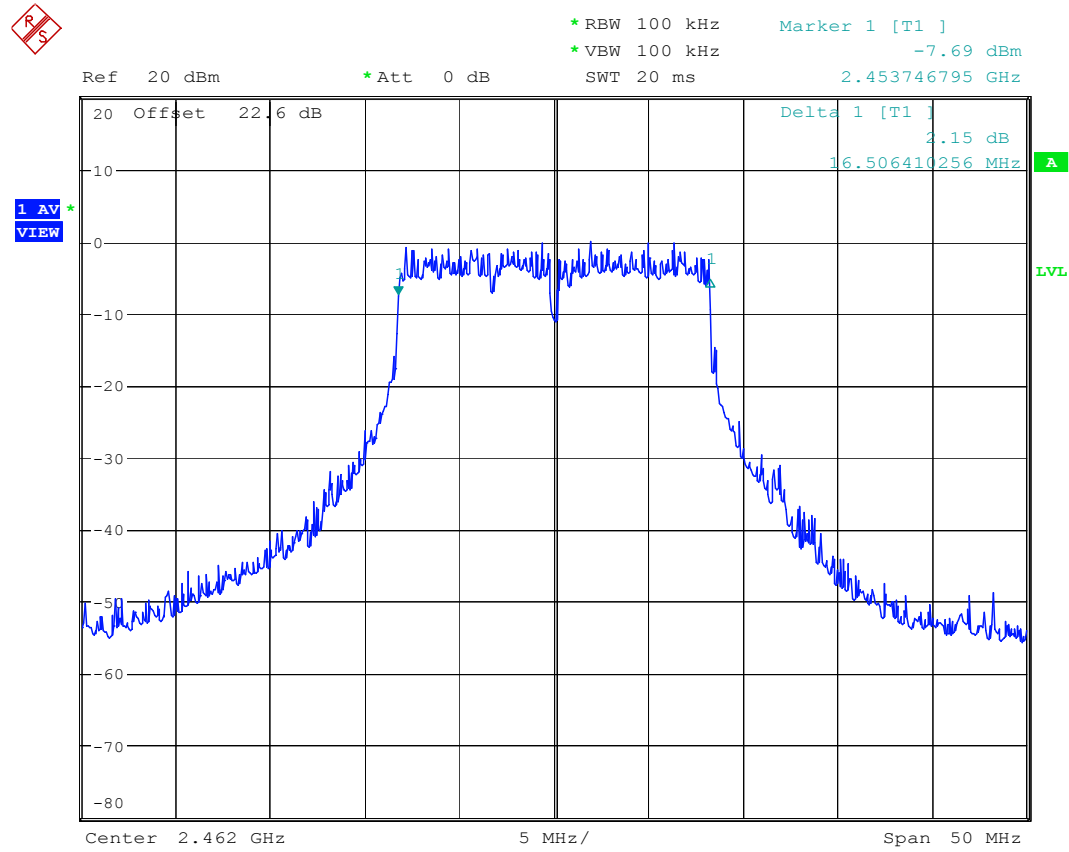
Date: 18.OCT.2004 10:23:27

EQUIPMENT: ARM2



OCC BW
Date: 18.OCT.2004 10:19:07

EQUIPMENT: ARM2



OCC BW

Date: 18.OCT.2004 10:25:12

EQUIPMENT: ARM2

Section 5. Peak Output Power

Para. No.: 15.247(b)(3)(4)

Test Performed By: Glen Westwell	Date of Test: 15 Oct. 2004
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Test Results: Complies.

Limit: 1W, (30dBm) conducted , 4W (36dBm) EIRP.
The conducted power must be reduced by 1dB for every dB that the transmitting antenna exceeds 6dBi.

Measurement Data: The EUT was characterized over all channels and data rates.
Worst case data has been presented.

**Conducted Output Power
802.11b**

Antenna	Ch.1 (dBm)	Ch.6 (dBm)	Ch.11 (dBm)	Limits (dBm)
4 & 6dBi Omni	20.4	25.4	20.8	30.0
8 Omni	18.8	23.4	18.4	28.0
12 Omni	15.2	19.9	15.3	24.0
8dBi Directional	18.4	23.4	18.8	28.0
11.5dBi Directional	15.2	20.0	15.4	24.5

**Conducted Output Power
802.11g**

Antenna	Ch.1 (dBm)	Ch.6 (dBm)	Ch.11 (dBm)	Limits (dBm)
4 & 6dBi Omni	17.7	25.1	17.2	30.0
8 Omni	16.0	23.1	15.3	28.0
12 Omni	12.6	19.6	11.8	24.0
8dBi Directional	15.9	23.2	15.3	28.0
11.5dBi Directional	12.5	19.5	11.7	24.5

Note: The conducted power for the 4dBi and 6dBi antennas is the same. All power levels are set via firmware on selection of antenna and data rate. Maximum conducted power levels are detailed in the tables above.

Antennas:

- 4dBi Maxrad MFB2004
- 6dBi Maxrad MFB2006
- 8dBi Maxrad MFB2008
- 12dBi Maxrad MFB2012
- 8.5dBi BelAir Directional
- 11.5dBi BelAir Directional

Maximum EIRP:

Omni Antenna (12dBi) = 12.0 + 19.9 = 31.9dBm
Directional (11.5dBi) = 11.5 + 20.0 = 31.5dBm

EQUIPMENT: ARM2

Section 6. Spurious Emissions (Antenna Conducted)

Para. No.: 15.247 (d)

Test Performed By: Glen Westwell	Date of Test: 15 Oct. 2004
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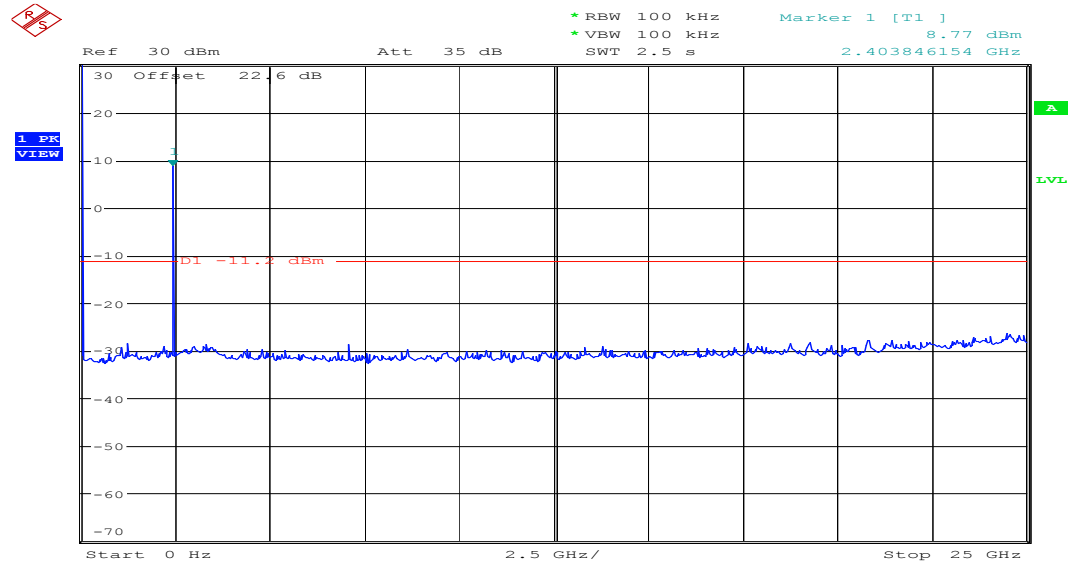
Test Results: Complies.

Limit: 30dBc

Measurement Data: See attached plots.
Worst case = 31.2dBc

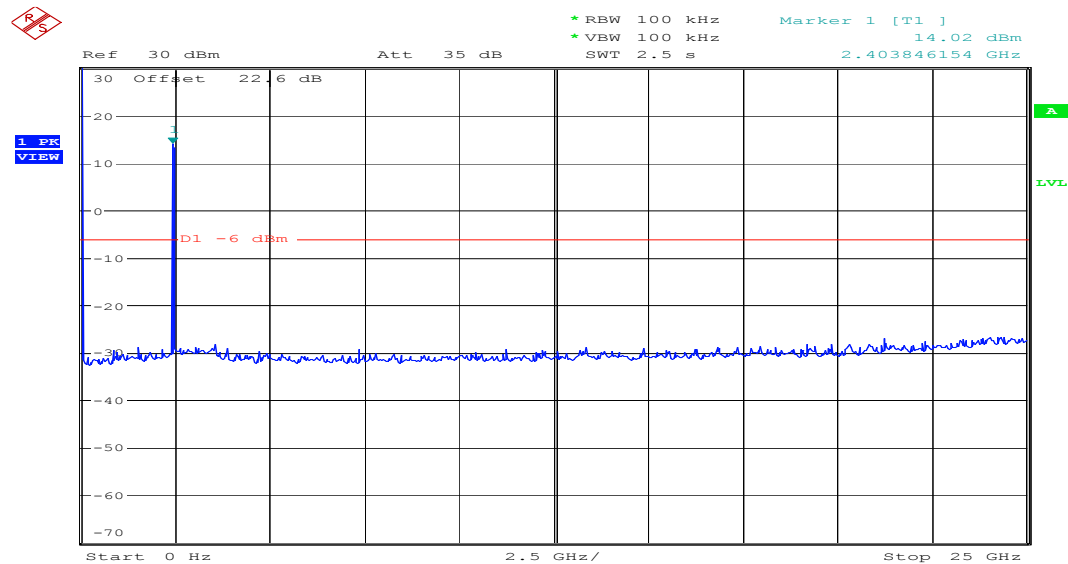
EQUIPMENT: ARM2

Low Band, Ch.1



OCC BW
Date: 18.OCT.2004 11:49:02

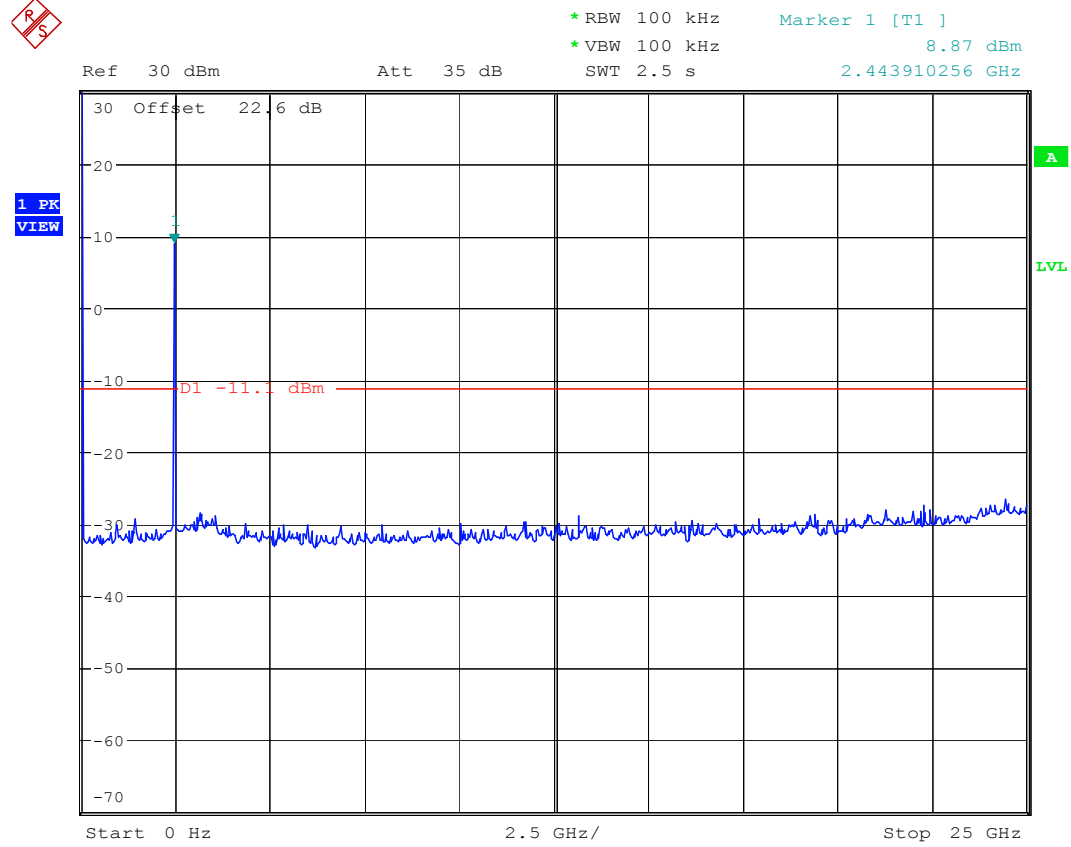
Mid Band, Ch.6



OCC BW
Date: 18.OCT.2004 11:51:02

EQUIPMENT: ARM2

High Band, Ch.11

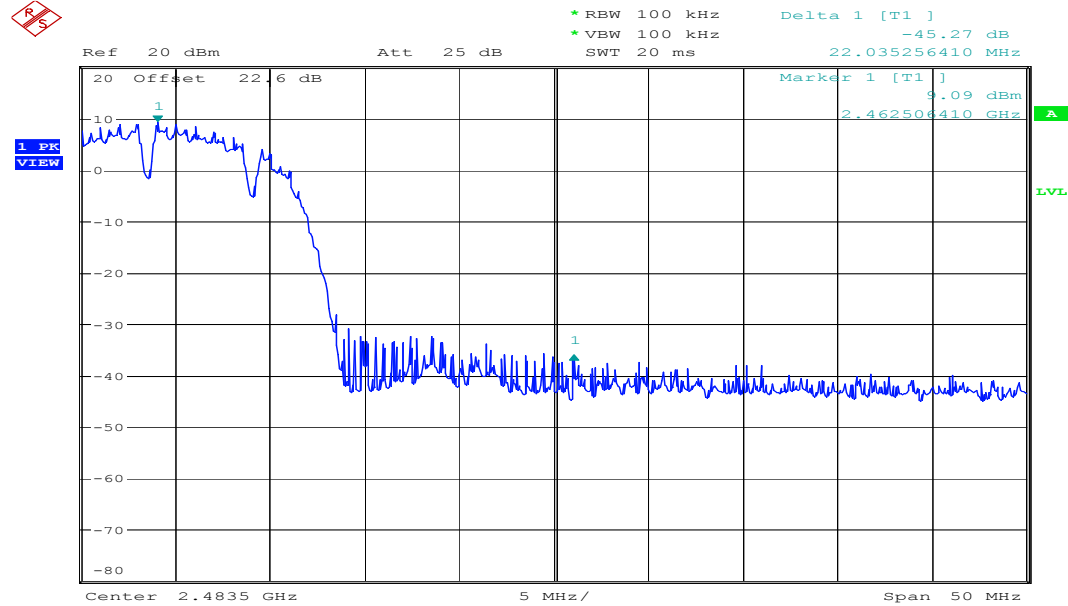


OCC BW

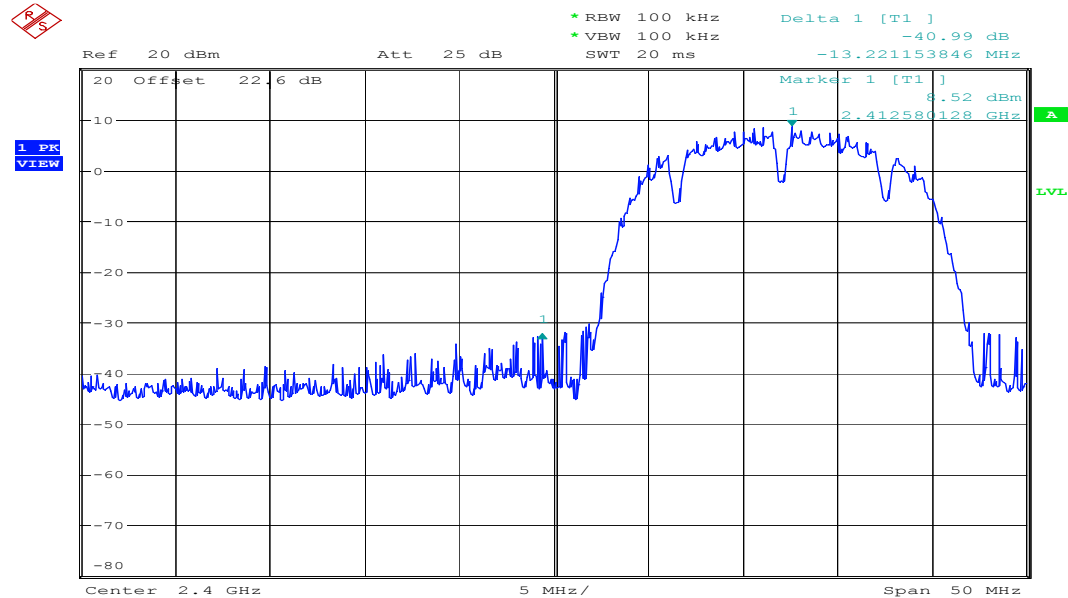
Date: 18.OCT.2004 11:52:36

EQUIPMENT: ARM2

30dBc Band Edge, 802.11b



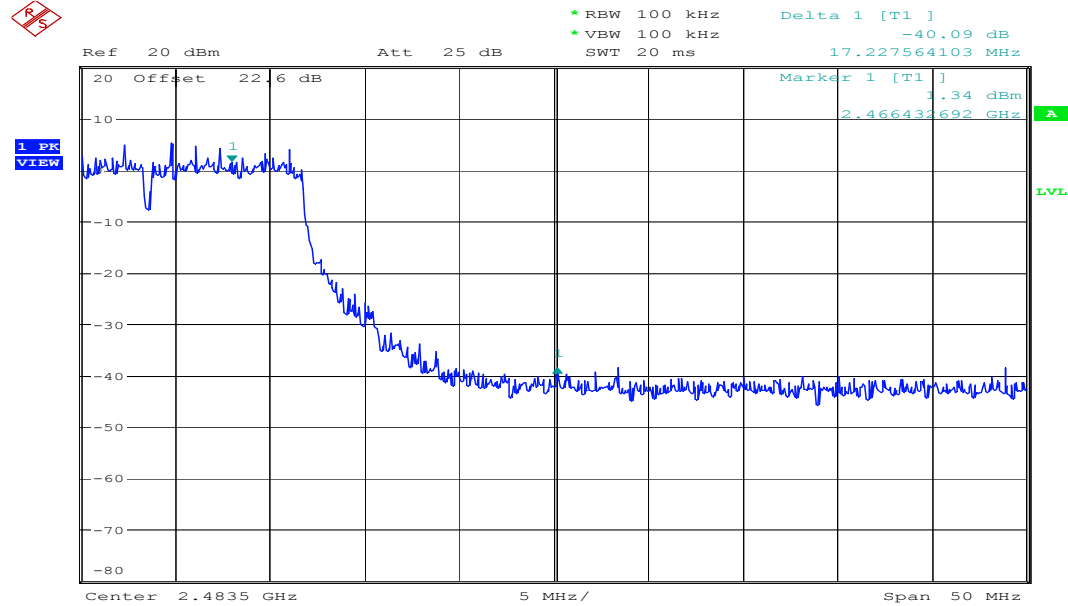
OCC BW
Date: 18.OCT.2004 12:50:07



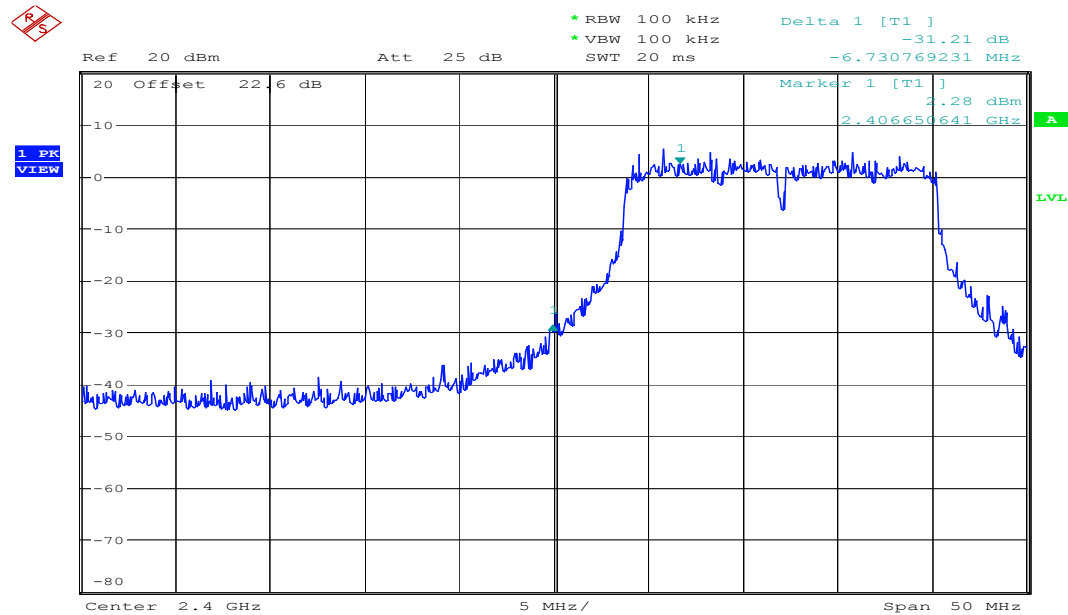
OCC BW
Date: 18.OCT.2004 12:51:27

EQUIPMENT: ARM2

30dBc Band Edge, 802.11g



OCC BW
Date: 18.OCT.2004 14:46:24



OCC BW
Date: 18.OCT.2004 14:44:57

EQUIPMENT: ARM2

Section 7. Spurious Emissions (Radiated)

Para. No.: 15.247(d)

Test Performed By:Glen Westwell	Date of Test: 13 Oct. 2004
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Test Results: Complies.

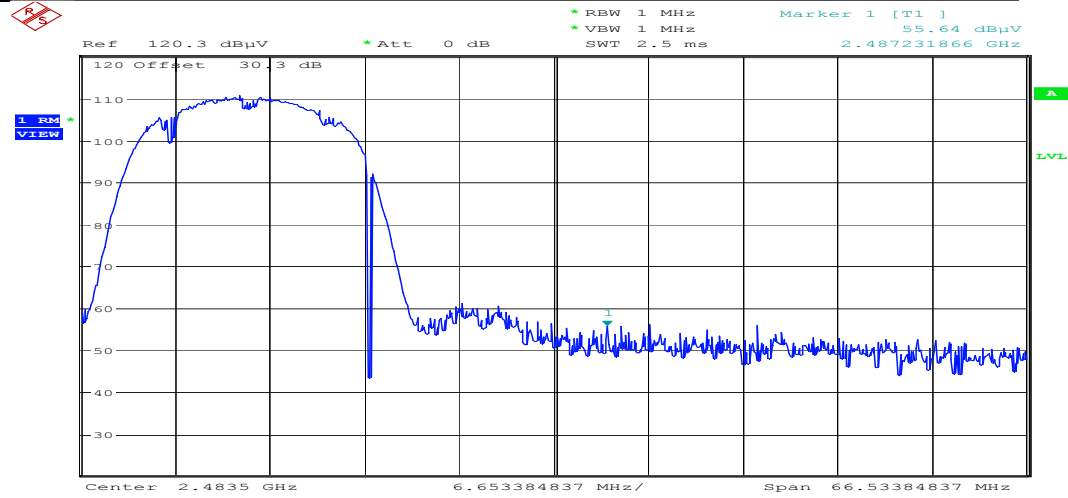
Measurement Data: See attached plots and table.

- The DUT was searched from 30MHz to 25GHz. Only those emissions within 20dB of the limit were reported.
- Spurious Emissions were searched for all antennas. Worst case data has been presented.
- Conducted power delivered to the Maxrad Omni 4dBi & 6dbi antenna is the same, therefore radiated data was provided for the worst case 6dBi antenna only.
- The power supply source was varied +/-15% to verify worst case emissions.

EQUIPMENT: ARM2

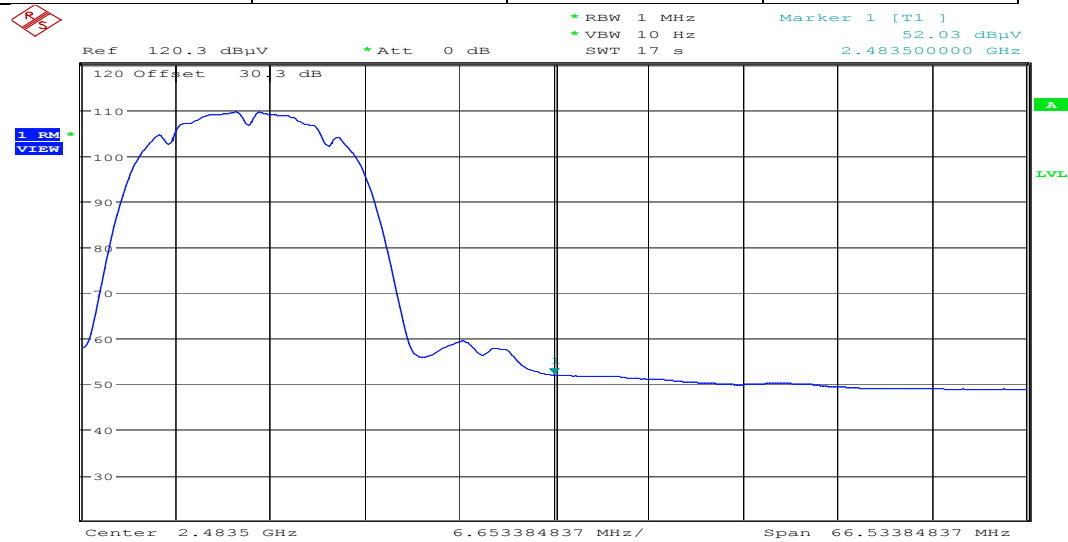
802.11b, 6dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
25.3dBuV	30.3dB	55.6dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 09:18:06

Band Edge Level (Avg)	Af	Level	Limit
21.7dBuV	30.3dB	52.0dBuV	54dBuV

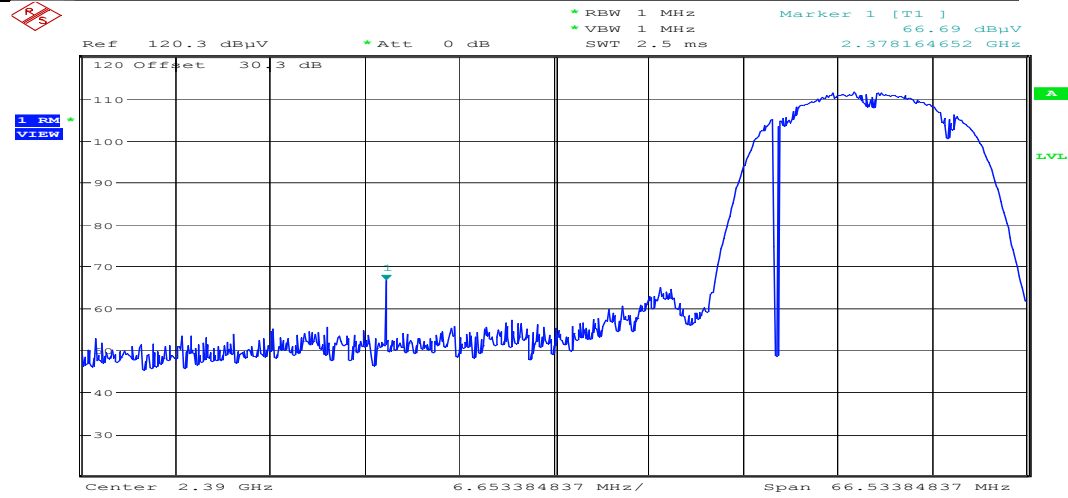


OCC BW
Date: 14.OCT.2004 09:19:11

EQUIPMENT: ARM2

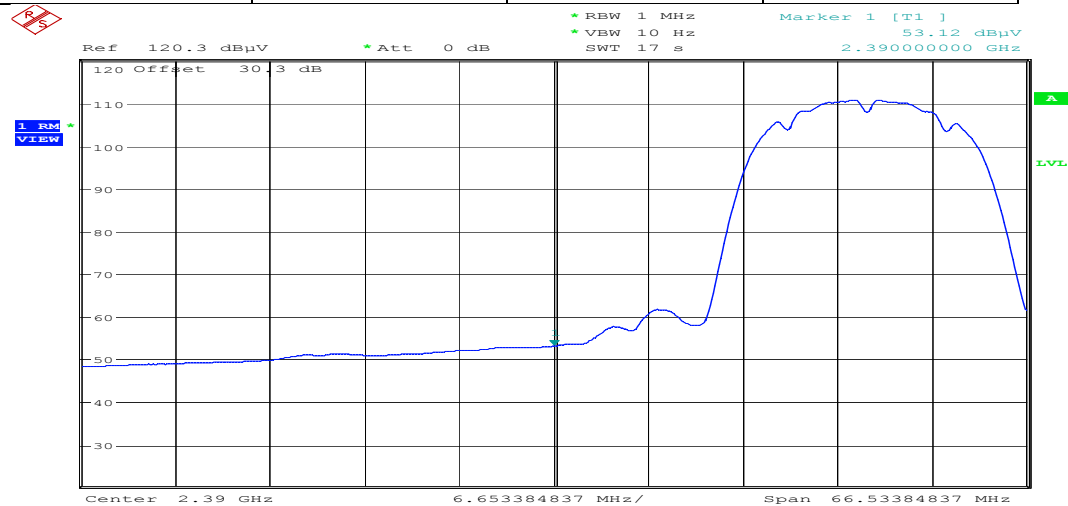
802.11b, 6dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
36.4dBuV	30.3dB	66.7dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 09:20:57

Band Edge Level (Avg)	Af	Level	Limit
22.8dBuV	30.3dB	53.1dBuV	54dBuV

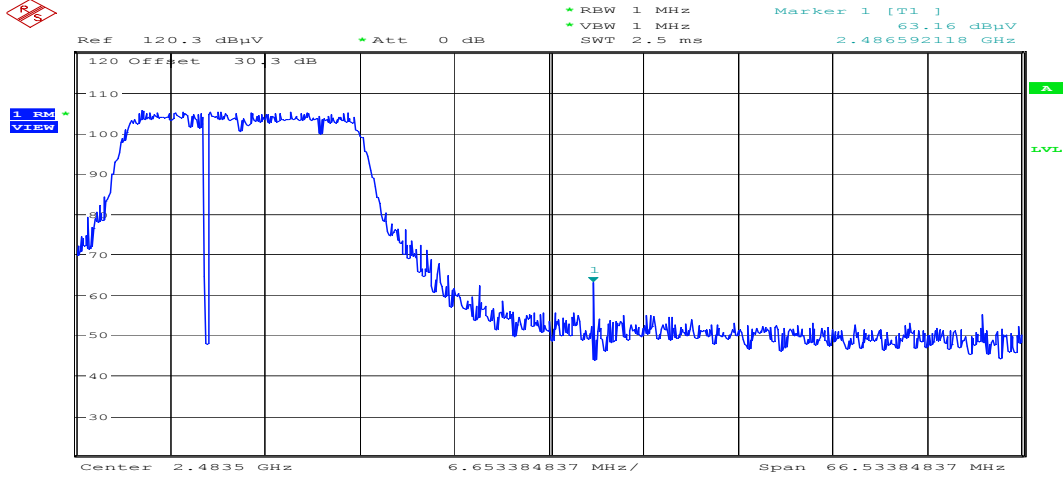


OCC BW
Date: 14.OCT.2004 09:22:26

EQUIPMENT: ARM2

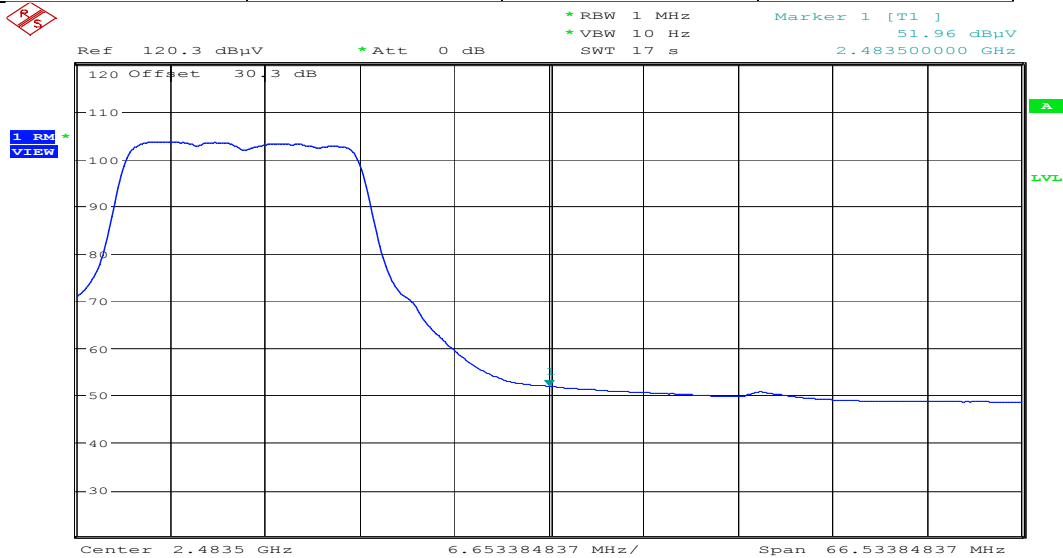
802.11g, 6dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
32.9dBuV	30.3dB	63.2dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 09:34:46

Band Edge Level (Avg)	Af	Level	Limit
21.7dBuV	30.3dB	52.0dBuV	54dBuV

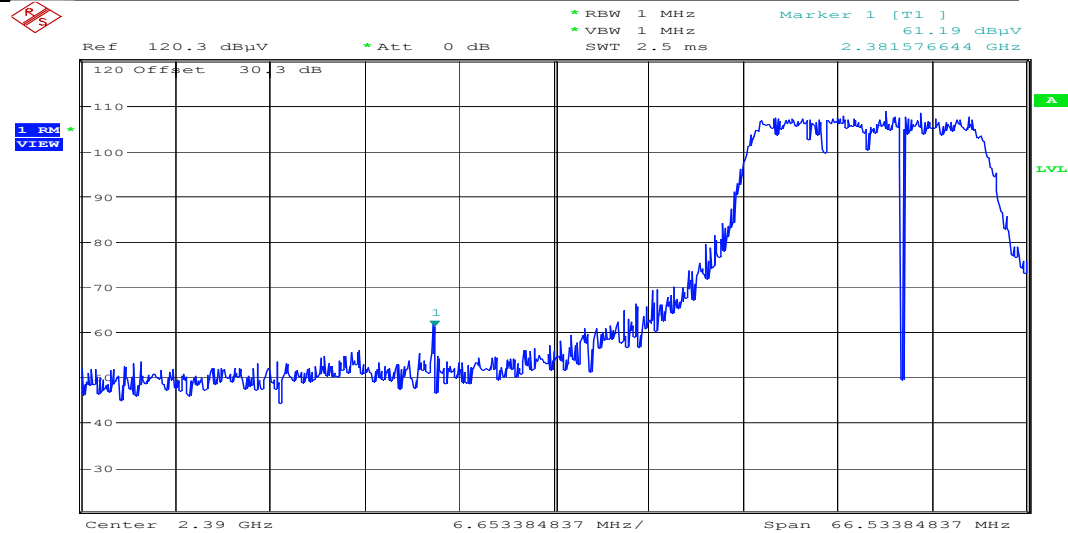


OCC BW
Date: 14.OCT.2004 09:35:43

EQUIPMENT: ARM2

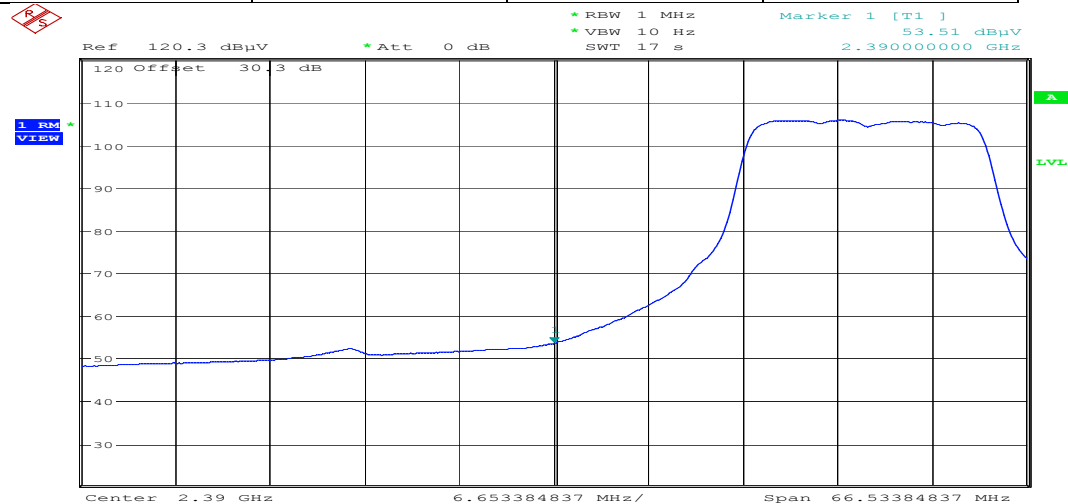
802.11g, 6dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
30.9dBuV	30.3dB	61.2dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 09:31:24

Band Edge Level (Avg)	Af	Level	Limit
23.2dBuV	30.3dB	53.5dBuV	54dBuV

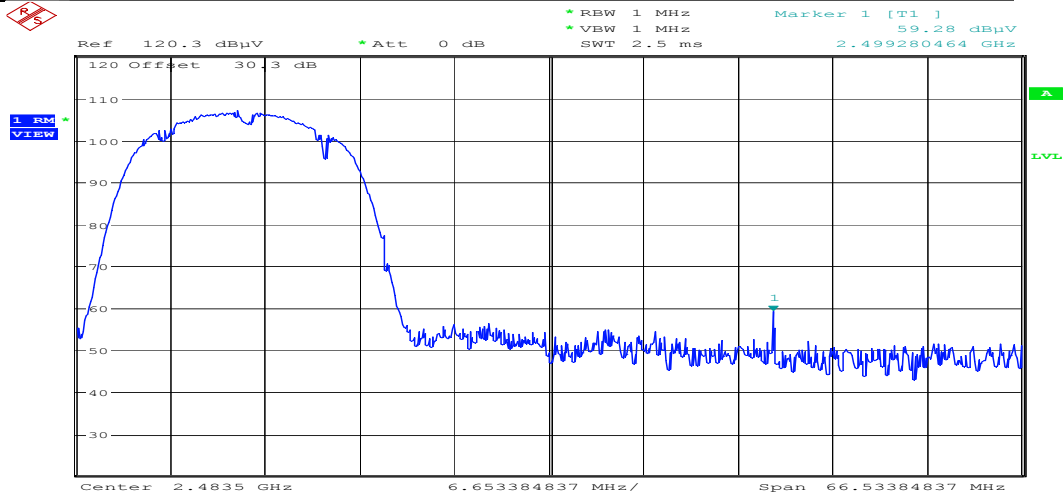


OCC BW
Date: 14.OCT.2004 09:32:40

EQUIPMENT: ARM2

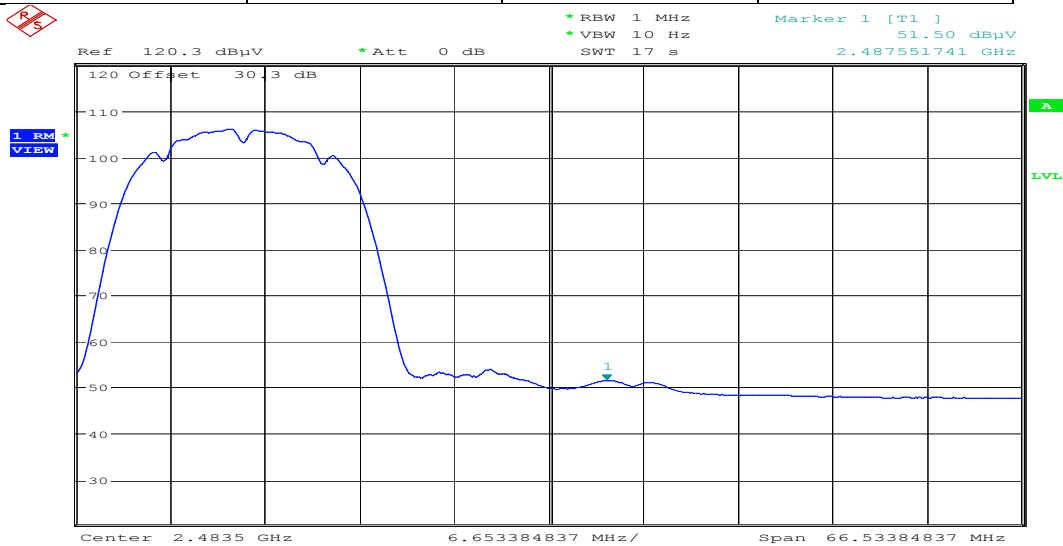
802.11b, 8dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
29.0dBuV	30.3dB	59.3dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 09:07:26

Band Edge Level (Avg)	Af	Level	Limit
21.2dBuV	30.3dB	51.5dBuV	54dBuV

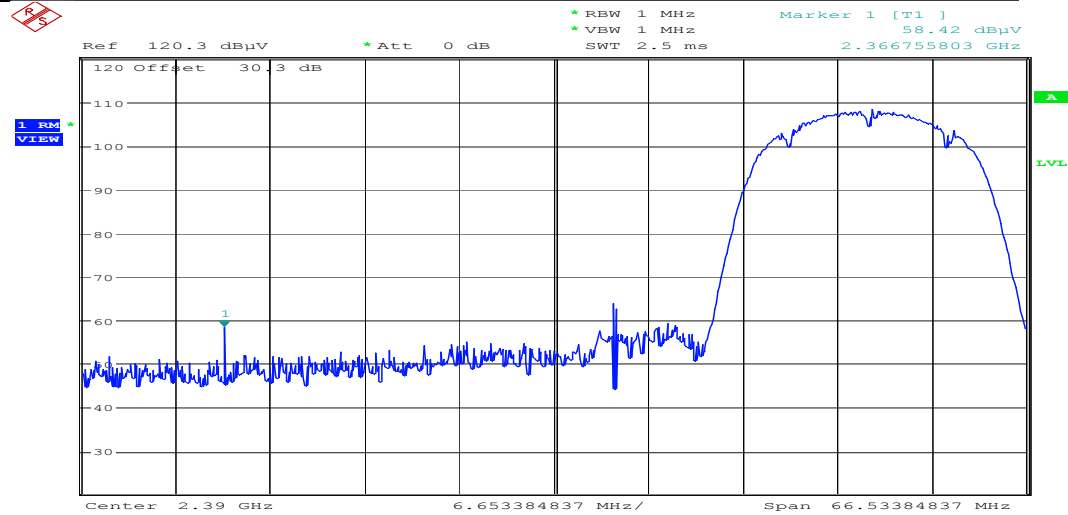


OCC BW
Date: 14.OCT.2004 09:08:43

EQUIPMENT: ARM2

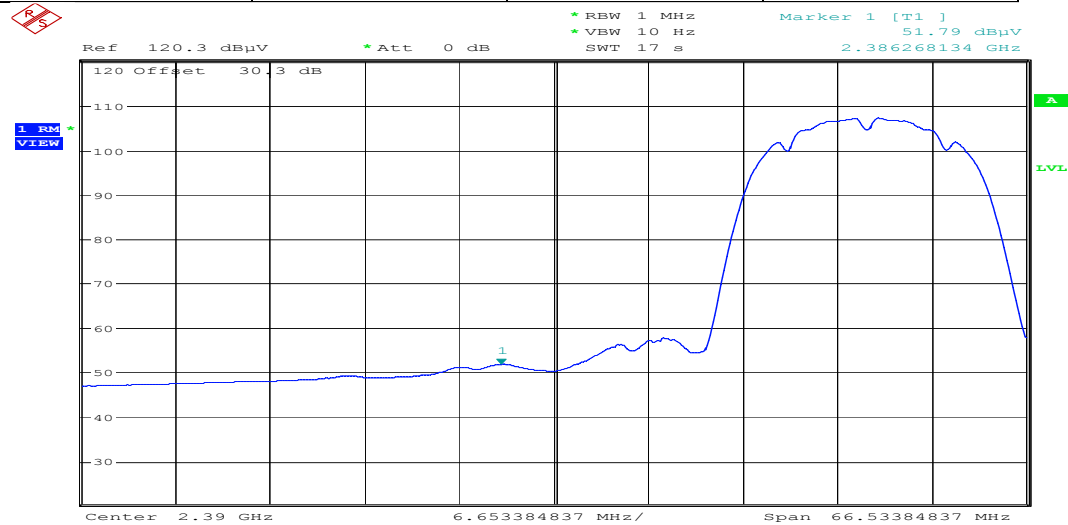
802.11b, 8dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
28.1dBuV	30.3dB	58.4dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 09:04:57

Band Edge Level (Avg)	Af	Level	Limit
21.5dBuV	30.3dB	51.8dBuV	54dBuV

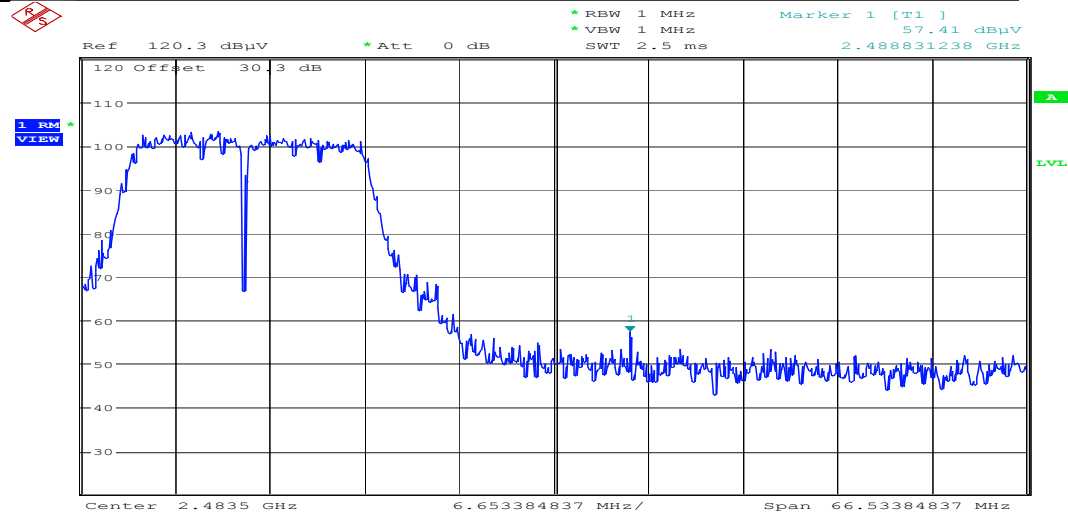


OCC BW
Date: 14.OCT.2004 09:06:16

EQUIPMENT: ARM2

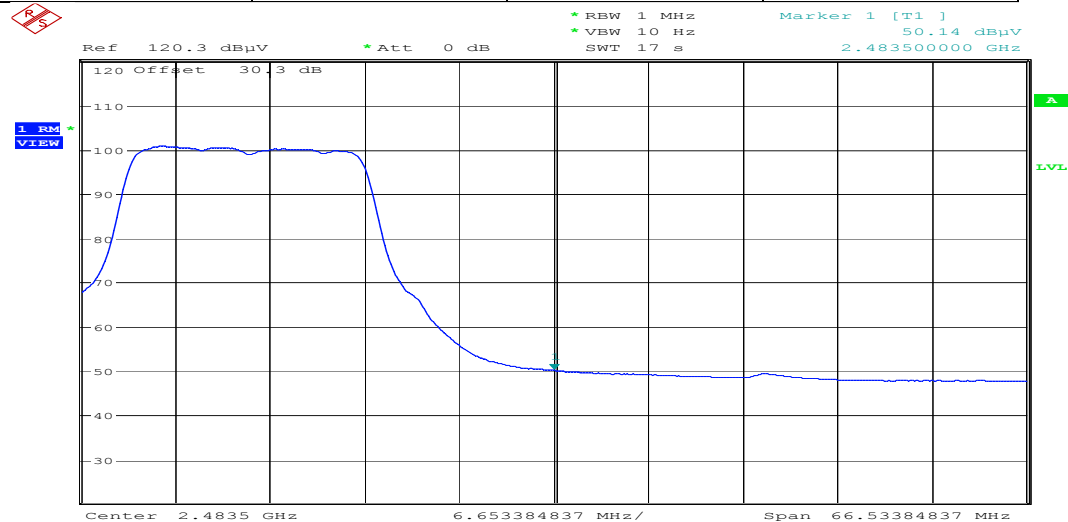
802.11g, 8dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
27.1dBuV	30.3dB	57.4dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 08:57:05

Band Edge Level (Avg)	Af	Level	Limit
19.8dBuV	30.3dB	50.1dBuV	54dBuV

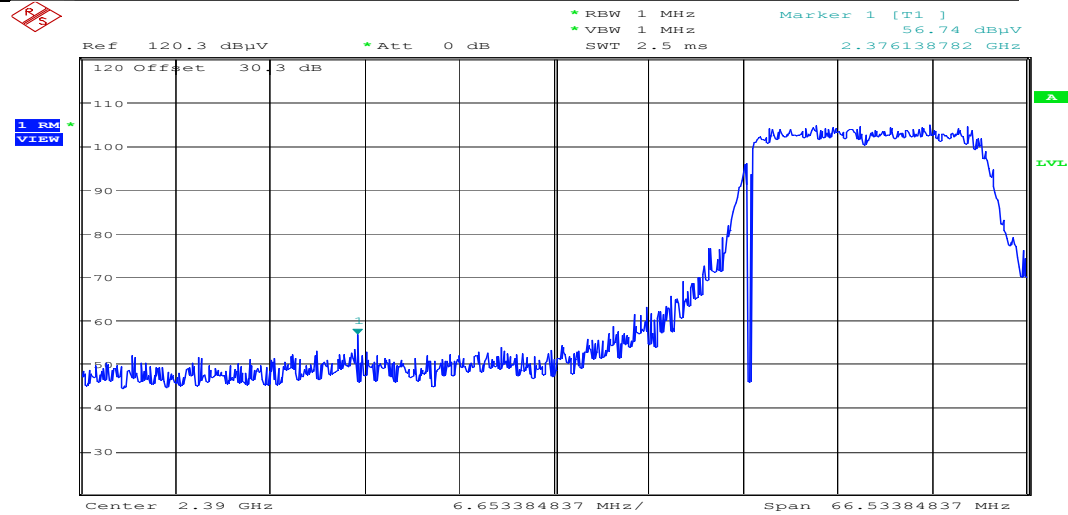


OCC BW
Date: 14.OCT.2004 08:58:12

EQUIPMENT: ARM2

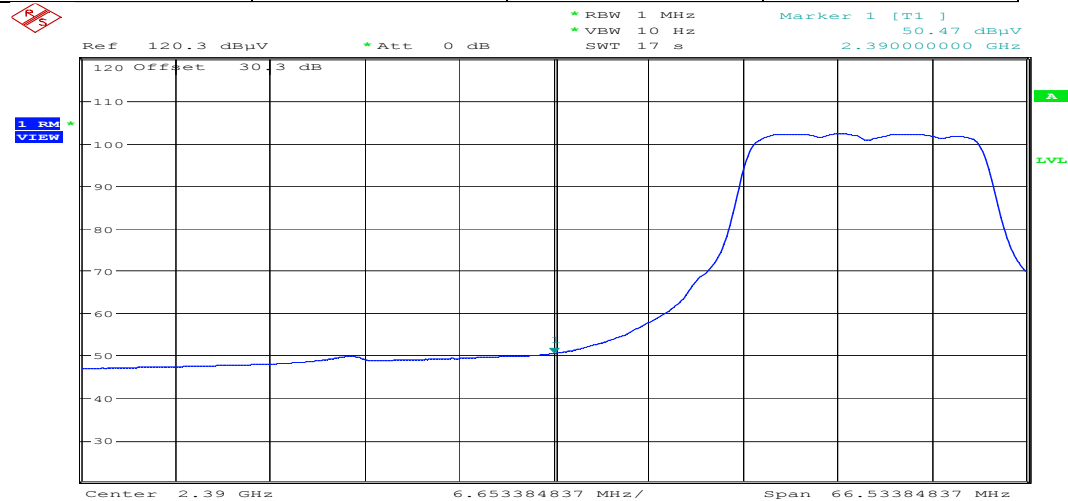
802.11g, 8dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
26.4dBuV	30.3dB	56.7dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 08:59:35

Band Edge Level (Avg)	Af	Level	Limit
20.2dBuV	30.3dB	50.5dBuV	54dBuV

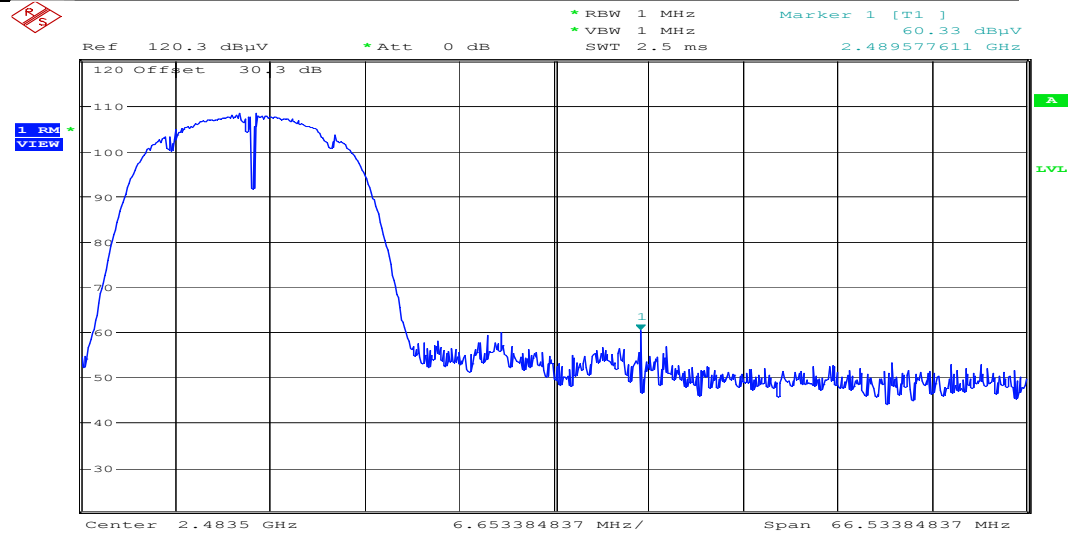


OCC BW
Date: 14.OCT.2004 09:00:47

EQUIPMENT: ARM2

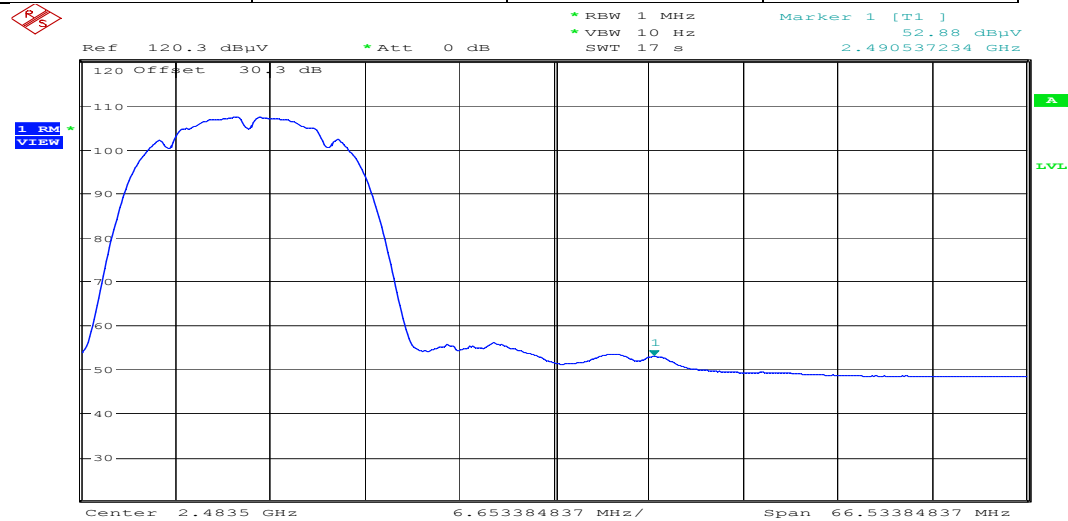
802.12b, 11dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
30.0dBuV	30.3dB	60.3dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 08:25:38

Band Edge Level (Avg)	Af	Level	Limit
22.6dBuV	30.3dB	52.9dBuV	54dBuV

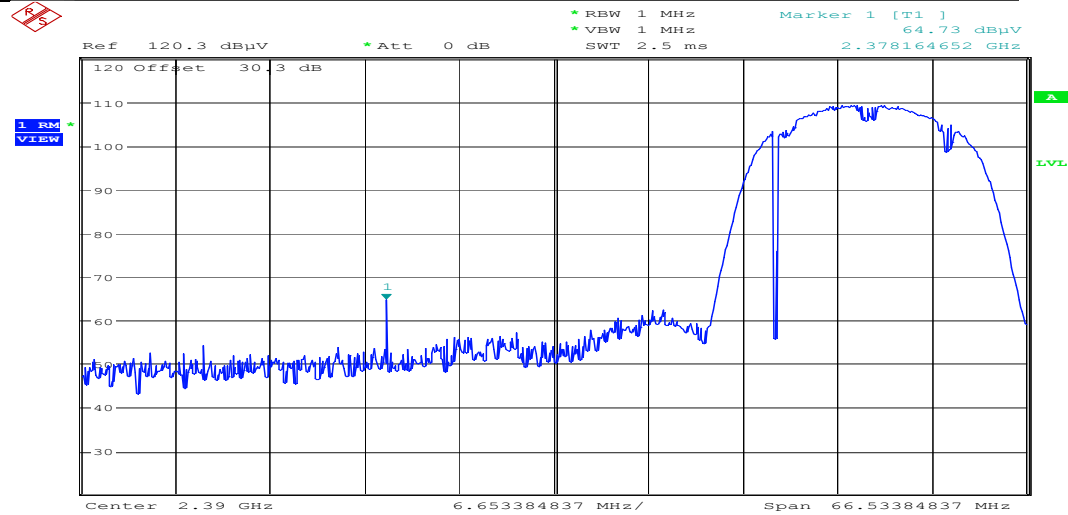


OCC BW
Date: 14.OCT.2004 08:24:38

EQUIPMENT: ARM2

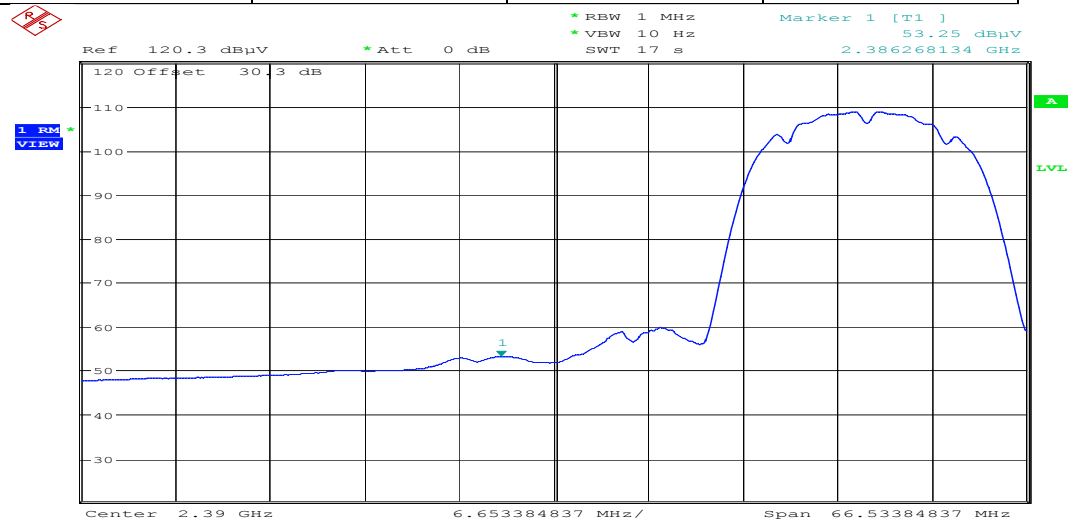
802.11b, 12dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
34.4dBuV	30.3dB	64.7dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 08:33:18

Band Edge Level (Avg)	Af	Level	Limit
23.0dBuV	30.3dB	53.3dBuV	54dBuV

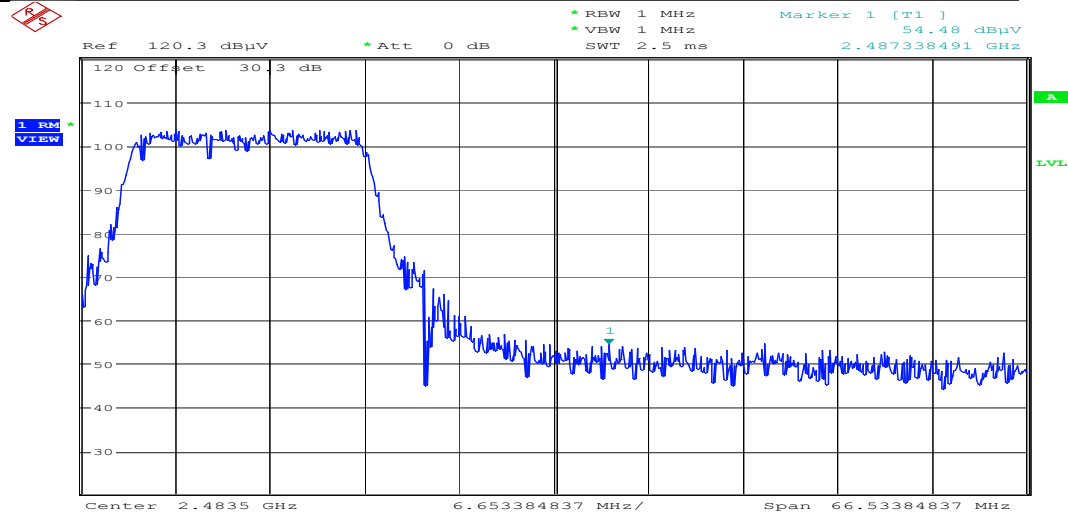


OCC BW
Date: 14.OCT.2004 08:34:34

EQUIPMENT: ARM2

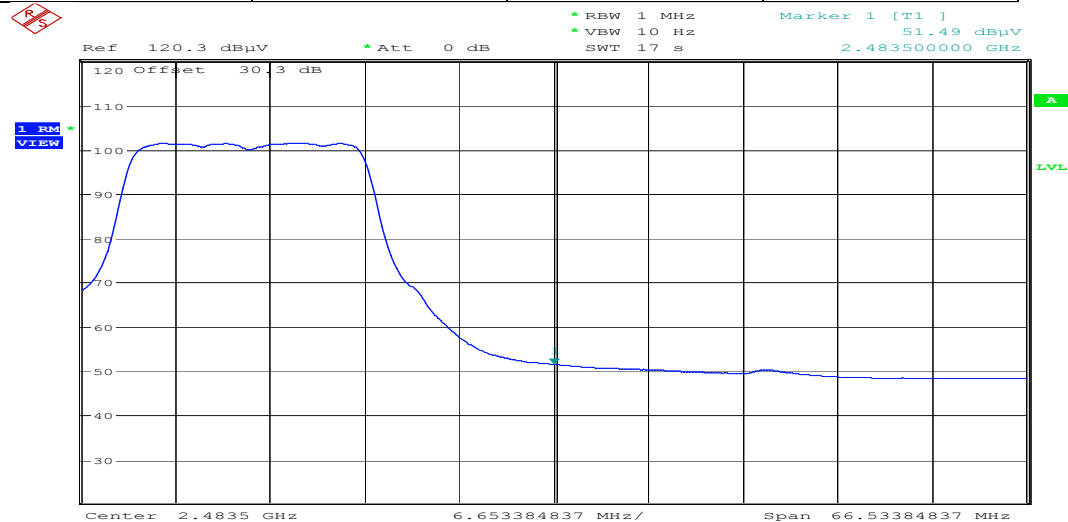
802.11g, 12dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
24.2dBuV	30.3dB	54.5dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 08:43:13

Band Edge Level (Avg)	Af	Level	Limit
21.2dBuV	30.3dB	51.5dBuV	54dBuV

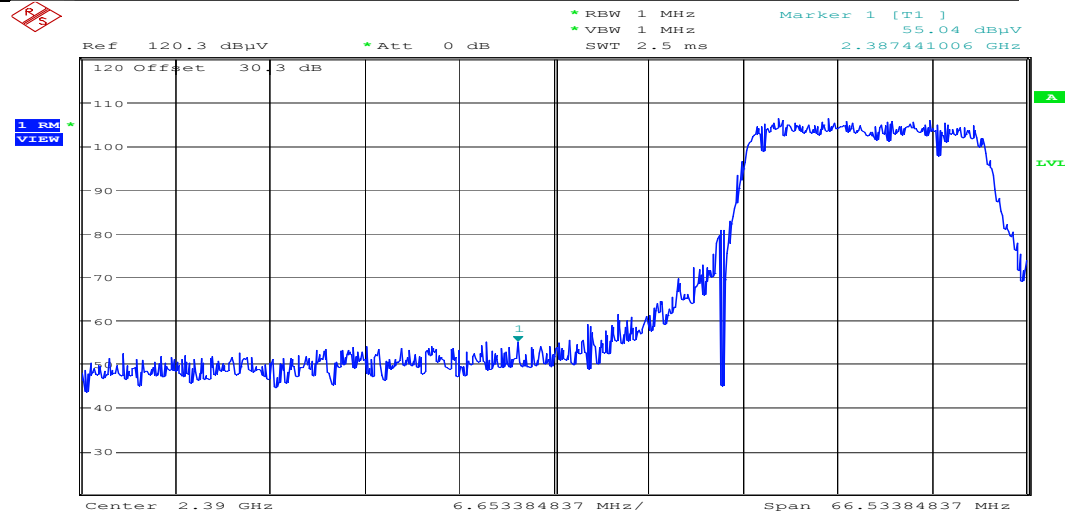


OCC BW
Date: 14.OCT.2004 08:44:21

EQUIPMENT: ARM2

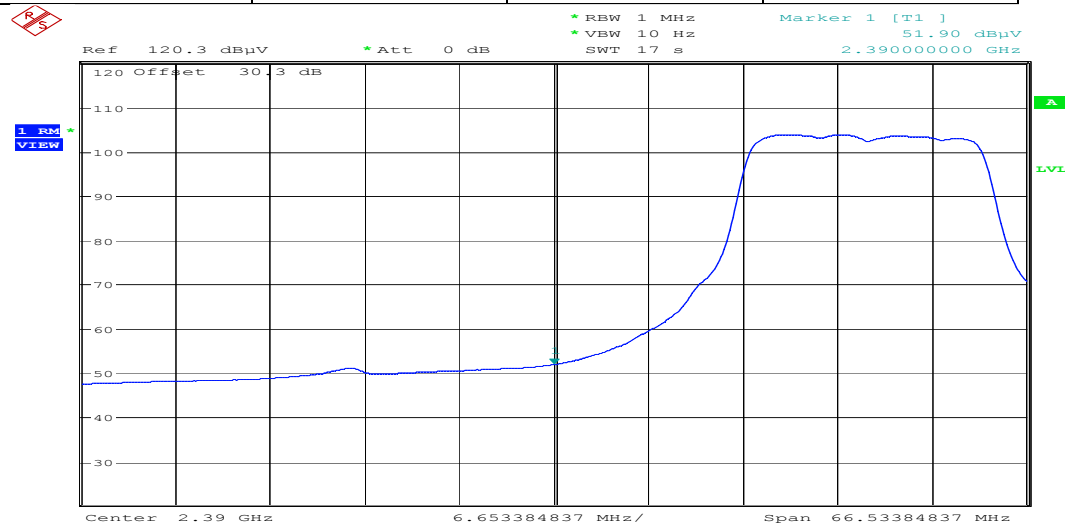
802.11g, 12dBi Omni Antenna

Band Edge Level (PK)	Af	Level	Limit
24.7dBuV	30.3dB	55.0dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 08:40:49

Band Edge Level (Avg)	Af	Level	Limit
21.6dBuV	30.3dB	51.9dBuV	54dBuV

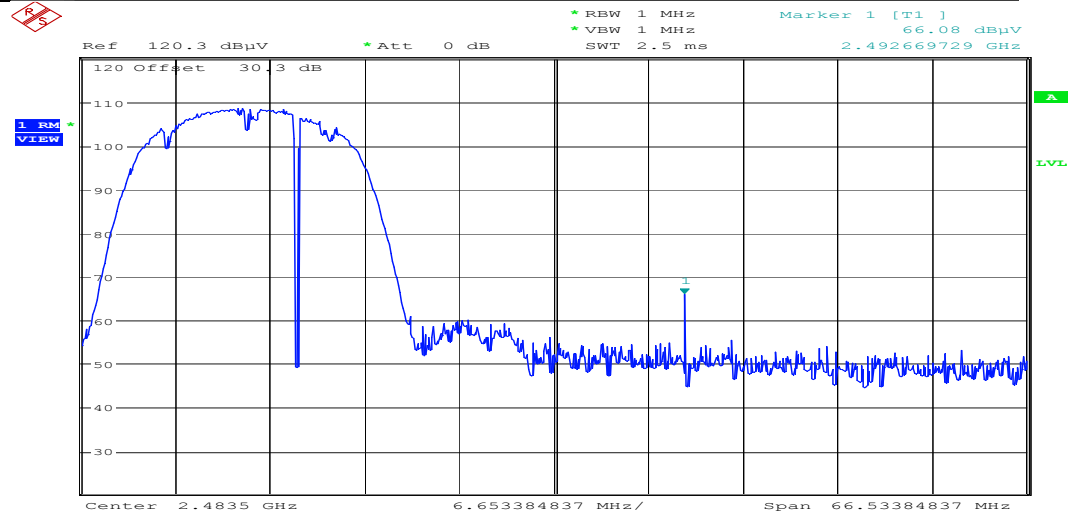


OCC BW
Date: 14.OCT.2004 08:39:13

EQUIPMENT: ARM2

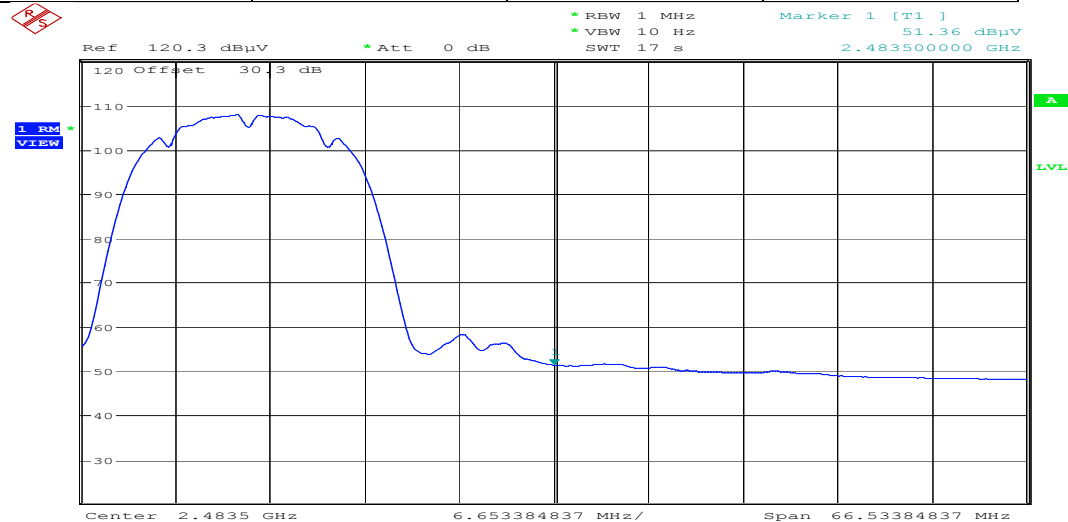
802.11b, 8.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
35.8dBuV	30.3dB	66.1dBuV	74dBuV



OCC BW
Date: 13.OCT.2004 11:02:36

Band Edge Level (Avg)	Af	Level	Limit
21.1dBuV	30.3dB	51.4dBuV	54dBuV

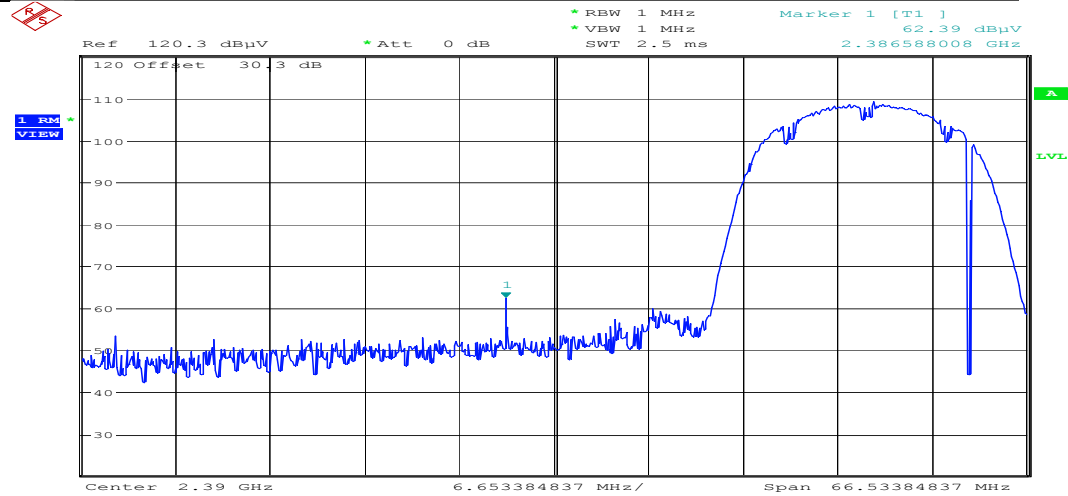


OCC BW
Date: 13.OCT.2004 11:05:38

EQUIPMENT: ARM2

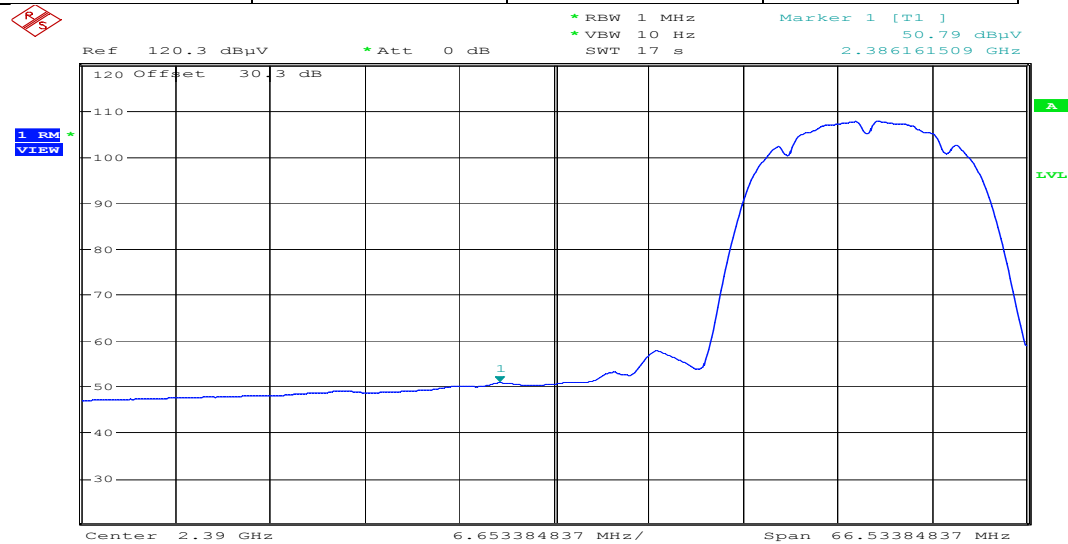
802.11b, 8.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
32.1dBuV	30.3dB	62.4dBuV	74dBuV



OCC BW
Date: 13.OCT.2004 10:57:38

Band Edge Level (Avg)	Af	Level	Limit
20.5dBuV	30.3dB	50.8dBuV	54dBuV

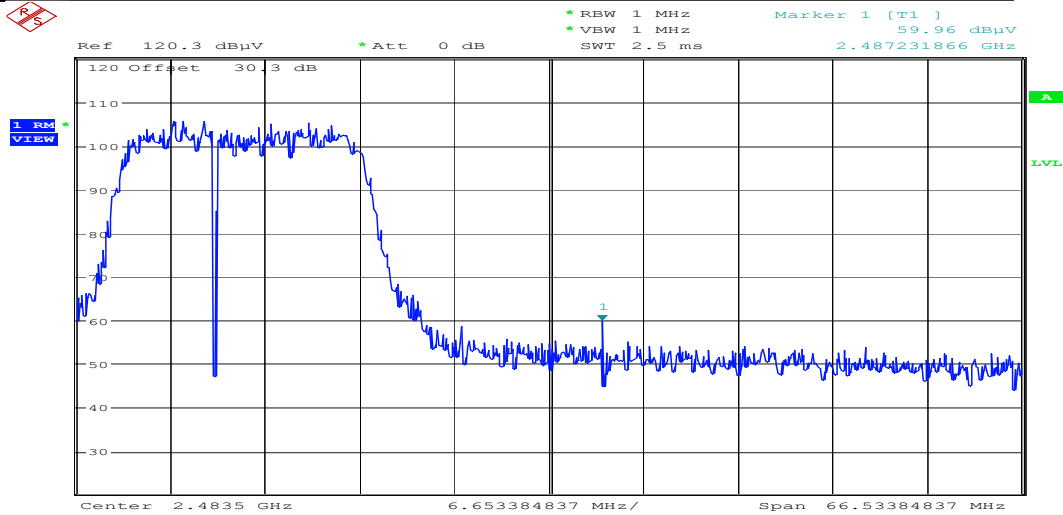


OCC BW
Date: 13.OCT.2004 10:52:10

EQUIPMENT: ARM2

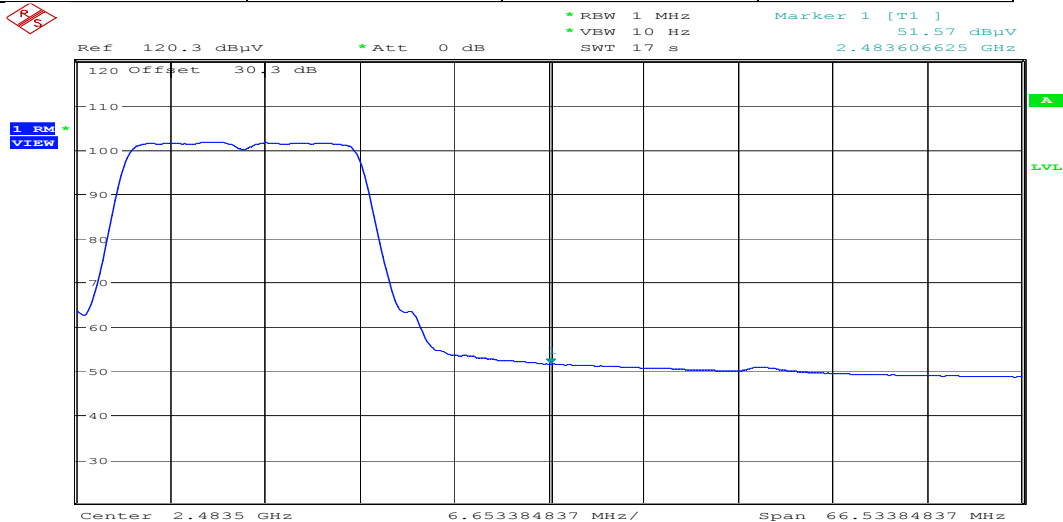
802.11g, 8.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
29.7dBuV	30.3dB	60.0dBuV	74dBuV



OCC BW
Date: 13.OCT.2004 11:08:00

Band Edge Level (Avg)	Af	Level	Limit
21.3dBuV	30.3dB	51.6dBuV	54dBuV

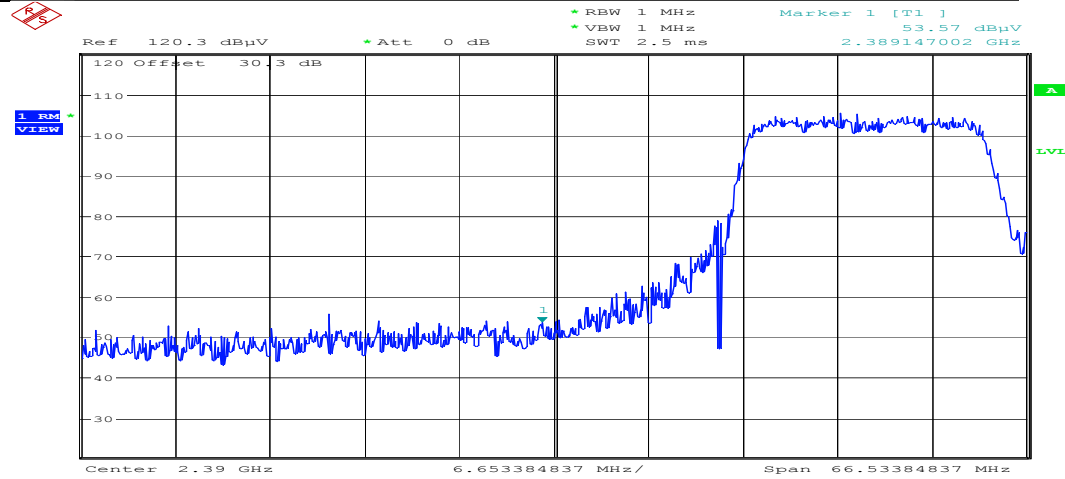


OCC BW
Date: 13.OCT.2004 11:07:09

EQUIPMENT: ARM2

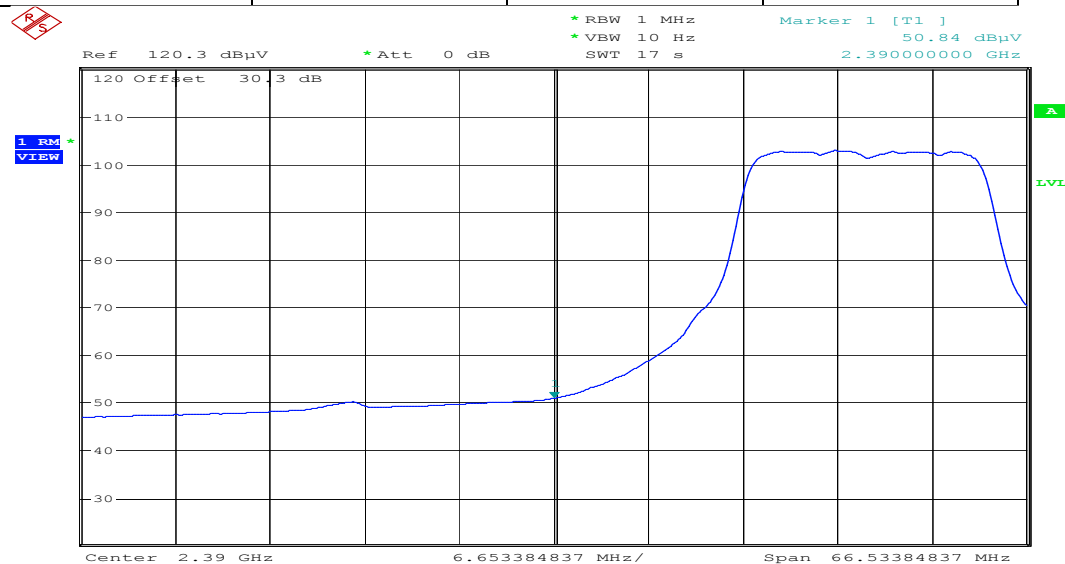
802.11g, 8.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
23.3dBuV	30.3dB	53.6dBuV	74dBuV



OCC BW
Date: 13.OCT.2004 10:56:11

Band Edge Level (Avg)	Af	Level	Limit
20.5dBuV	30.3dB	50.8dBuV	54dBuV

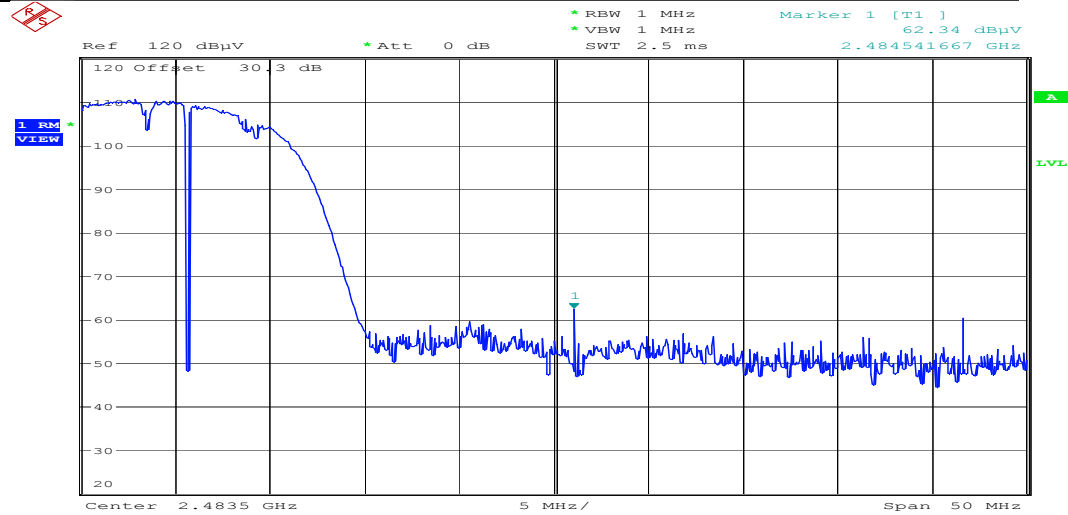


OCC BW
Date: 13.OCT.2004 10:54:46

EQUIPMENT: ARM2

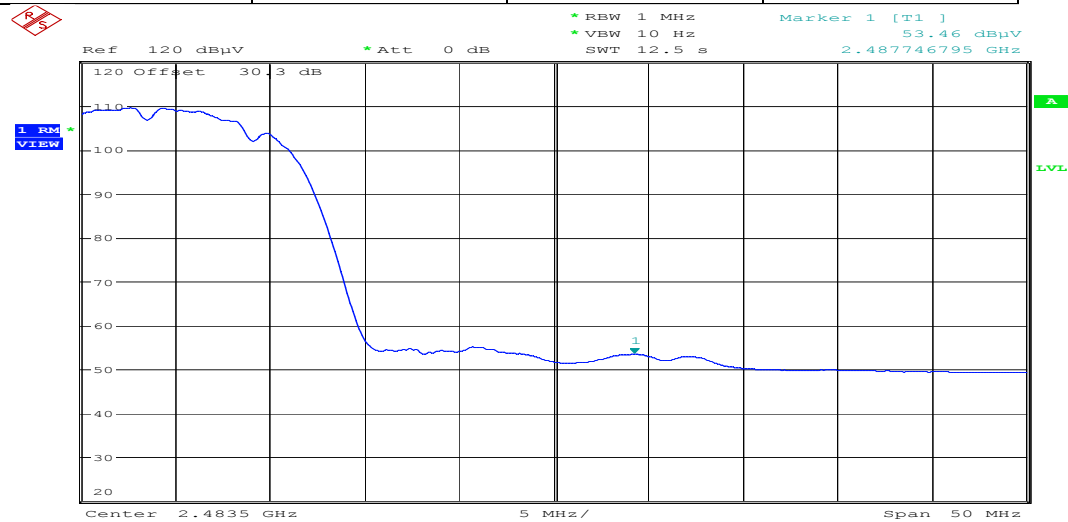
802.11b, 11.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
32.0dBuV	30.3dB	62.3dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 12:03:53

Band Edge Level (Avg)	Af	Level	Limit
23.2dBuV	30.3dB	53.5dBuV	54dBuV

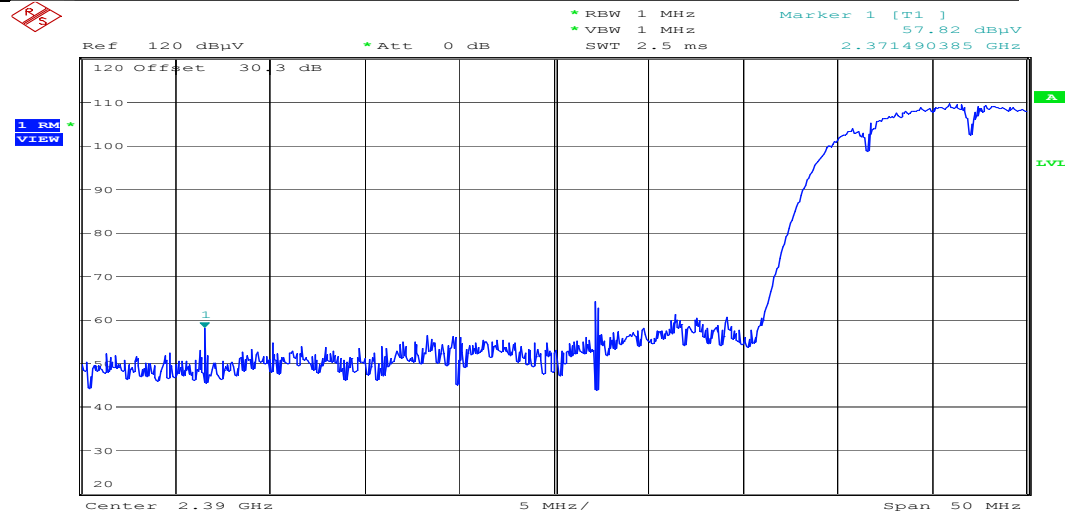


OCC BW
Date: 14.OCT.2004 12:04:52

EQUIPMENT: ARM2

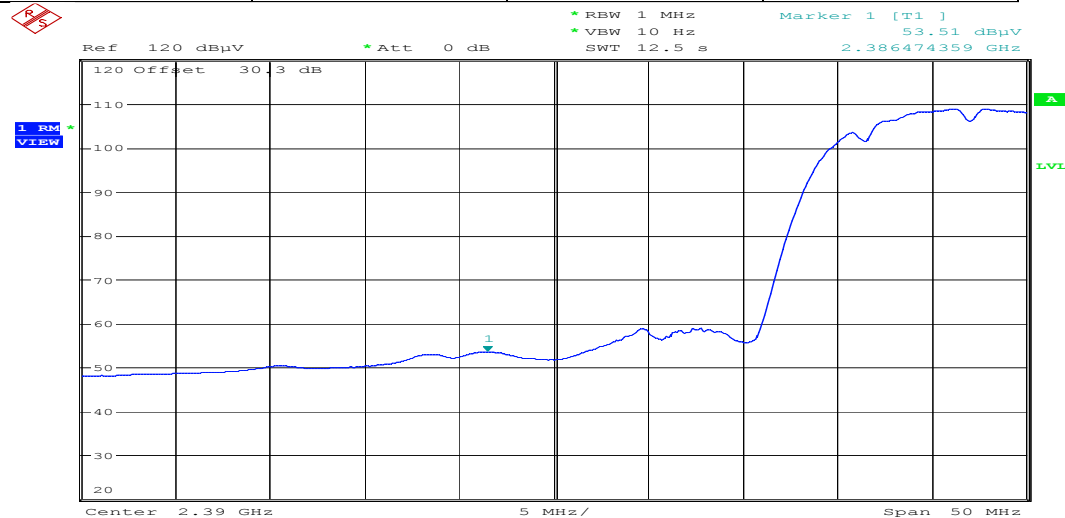
802.11b, 11.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
27.5dBuV	30.3dB	57.8dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 12:01:56

Band Edge Level (Avg)	Af	Level	Limit
23.2dBuV	30.3dB	53.5dBuV	54dBuV

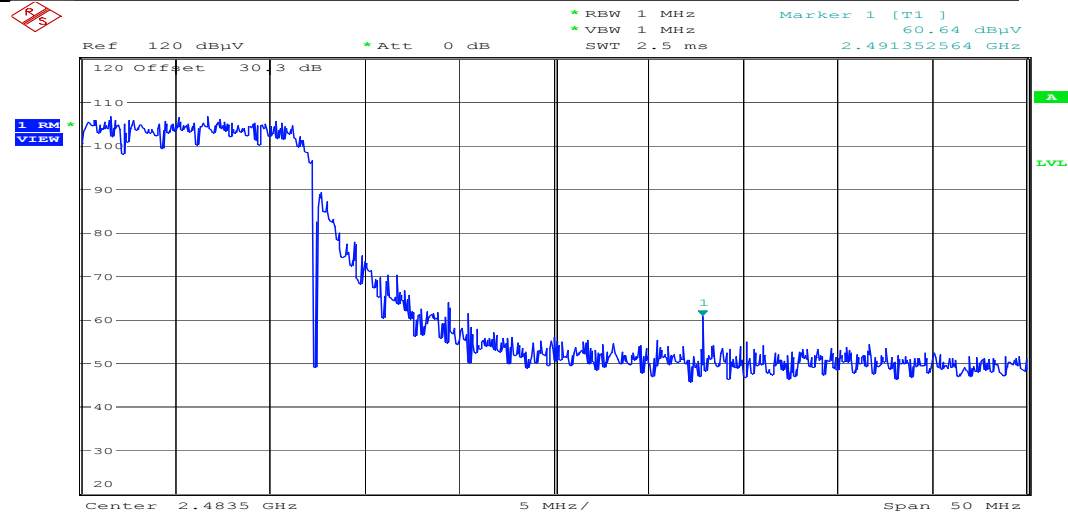


OCC BW
Date: 14.OCT.2004 12:02:53

EQUIPMENT: ARM2

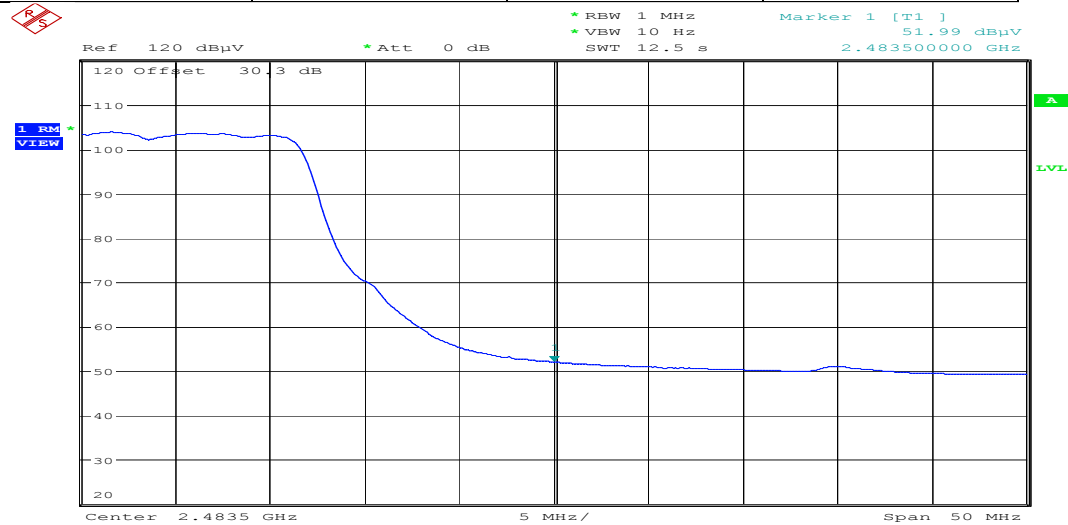
802.11g, 11.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
30.3dBuV	30.3dB	60.6dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 11:57:12

Band Edge Level (Avg)	Af	Level	Limit
21.7dBuV	30.3dB	52.0dBuV	54dBuV

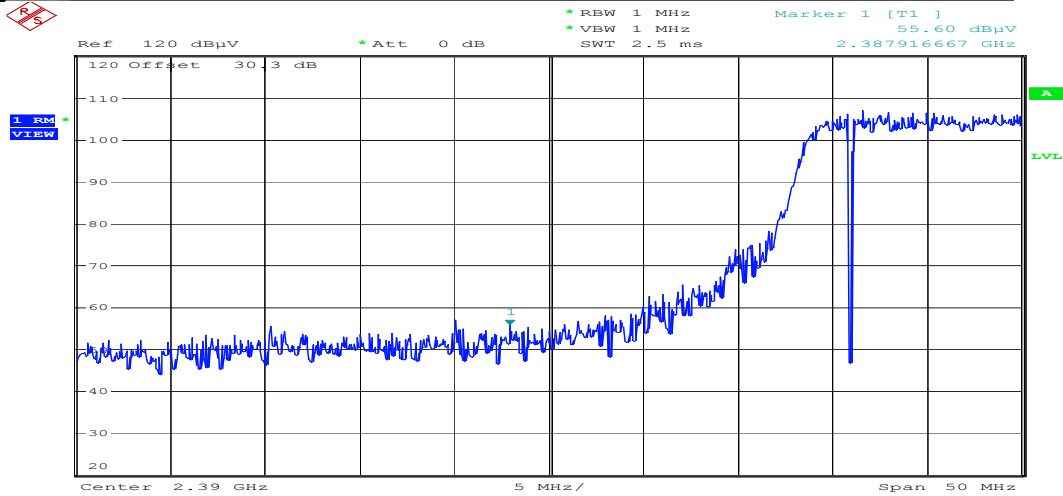


OCC BW
Date: 14.OCT.2004 11:58:12

EQUIPMENT: ARM2

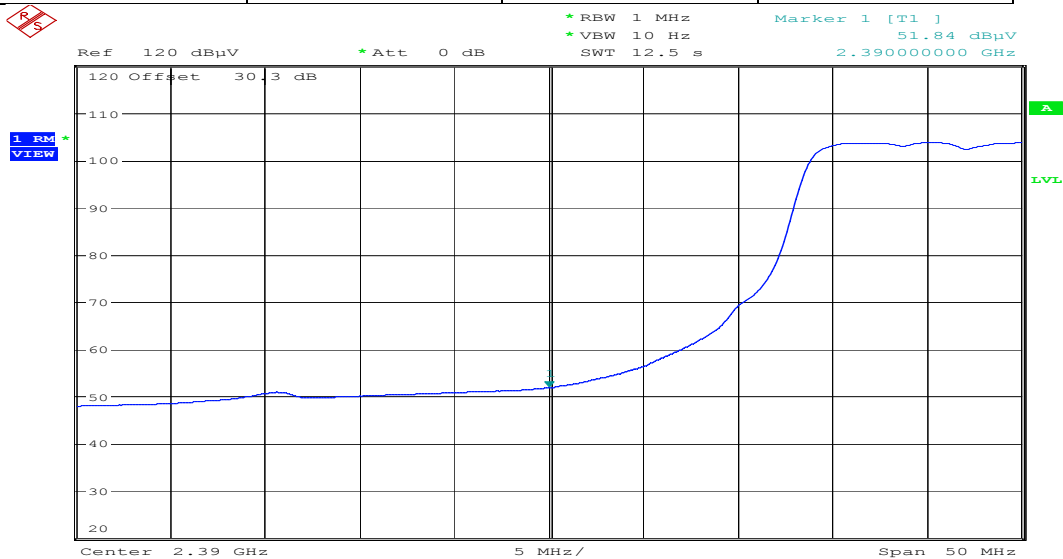
802.11g, 11.5dBi Directional Antenna

Band Edge Level (PK)	Af	Level	Limit
25.3dBuV	30.3dB	55.6dBuV	74dBuV



OCC BW
Date: 14.OCT.2004 11:59:19

Band Edge Level (Avg)	Af	Level	Limit
21.5dBuV	30.3dB	51.8dBuV	54dBuV



OCC BW
Date: 14.OCT.2004 12:00:13

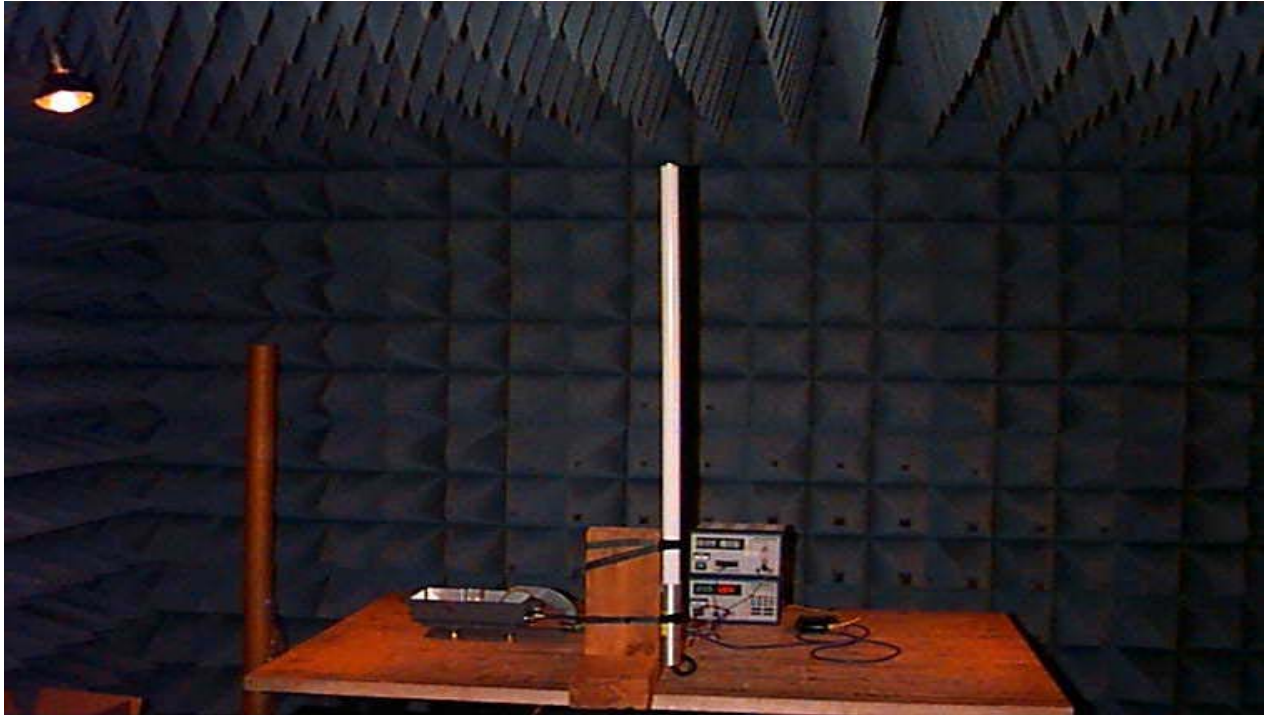
EQUIPMENT: ARM2

Tested as per (Table Top/Floor Standing): Table Top											
Test Distance (meters): 3											
Emissions within 20 dB of the limit have been recorded.											
Freq. (MHz)	Ant.	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector	Amp.
Ch.1											
4824.0000	Horn2	V	50.1	34.2	52.4	2.0	33.9	54.0	20.1	Peak	4-8GHz
4824.0000	Horn2	H	51.0	34.4	52.4	2.0	35.0	54.0	19.0	Peak	4-8GHz
9648.0000	Horn2	V	38.3	37.1	37.8	2.6	40.2	54.0	13.8	Peak	5-13GHz
9648.0000	Horn2	H	36.9	37.1	37.8	2.6	38.8	54.0	15.2	Peak	5-13GHz
Ch.6											
4874.0000	Horn2	V	50.2	34.2	52.4	2.0	34.0	54.0	20.0	Peak	4-8GHz
4874.0000	Horn2	H	49.7	34.4	52.4	2.0	33.7	54.0	20.3	Peak	4-8GHz
9748.0000	Horn2	V	39.3	37.1	37.8	2.6	41.2	54.0	12.8	Peak	5-13GHz
9748.0000	Horn2	H	36.8	37.1	37.8	2.6	38.7	54.0	15.3	Peak	5-13GHz
Ch.11											
4924.0000	Horn2	V	53.3	34.2	52.4	2.0	37.1	54.0	16.9	Peak	4-8GHz
4924.0000	Horn2	H	52.5	34.4	52.4	2.0	36.5	54.0	17.5	Peak	4-8GHz
9848.0000	Horn2	V	41.0	37.1	37.8	2.6	42.9	54.0	11.1	Peak	5-13GHz
9848.0000	Horn2	H	37.0	37.1	37.8	2.6	38.2	54.0	15.1	Peak	5-13GHz
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW, 10Hz VBW, Peak = 1.0MHz RBW, 1.0MHz VBW											
Notes:		Measurement data presented is for Ch. 1,6 & 11 respectively									
		The Peak emission complies with the average limit.									

EQUIPMENT: ARM2

Radiated Set Up Photo

12dBi Omni



8dBi Omni



EQUIPMENT: ARM2

6dBi Omni



8.5dBi Dirrectional



EQUIPMENT: ARM2

11.5dBi Dirrectional



EQUIPMENT: ARM2

Section 8. Transmitter Power Density

Para. No.: 15.247(e)

Test Performed By: Glen Westwell	Date of Test: 18 Oct 2004
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Test Results: Complies

Limit: +8dBm

Measurement Data: See attached graphs.

802.11b

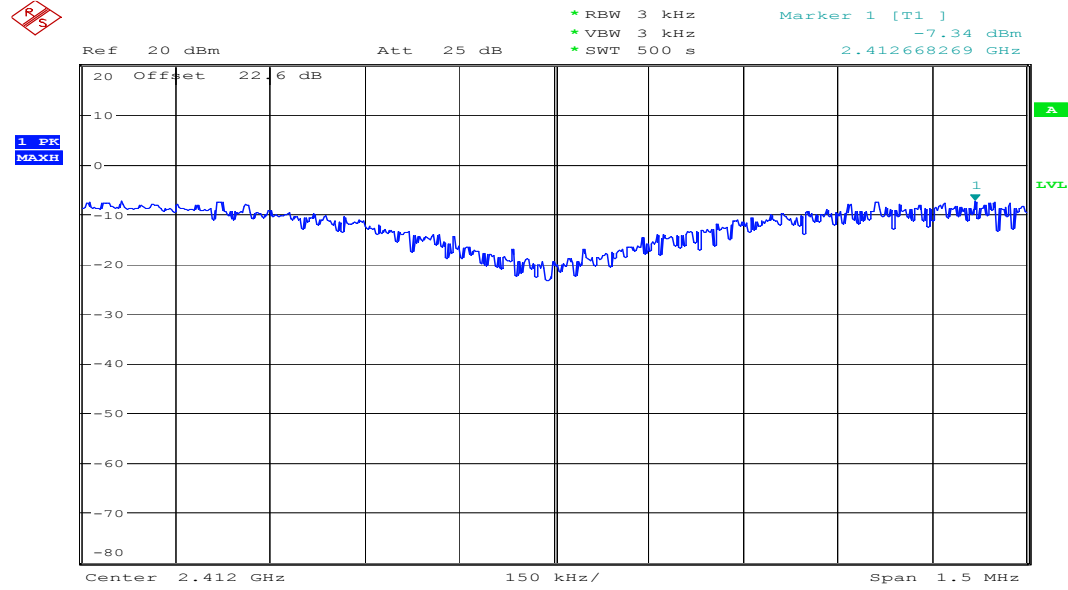
Channel	Power Spectral Density (dBm)
Ch1	-7.3
Ch.6	-2.5
Ch.11	-7.2

802.11g

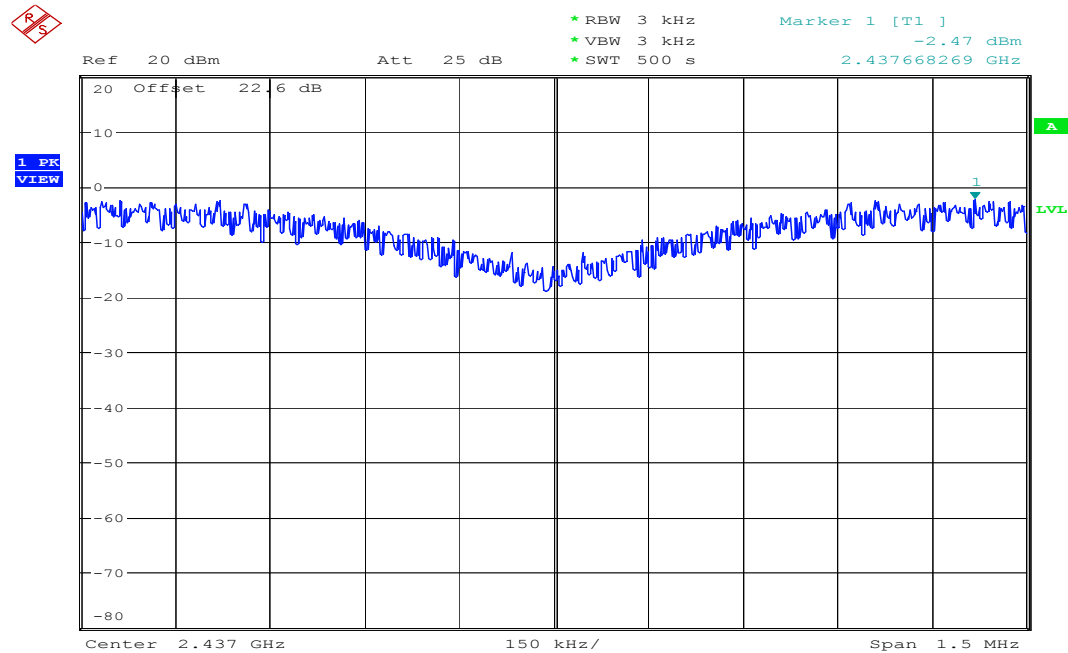
Channel	Power Spectral Density (dBm)
Ch1	-11.8
Ch.6	-4.4
Ch.11	-11.7

EQUIPMENT: ARM2

802.11b

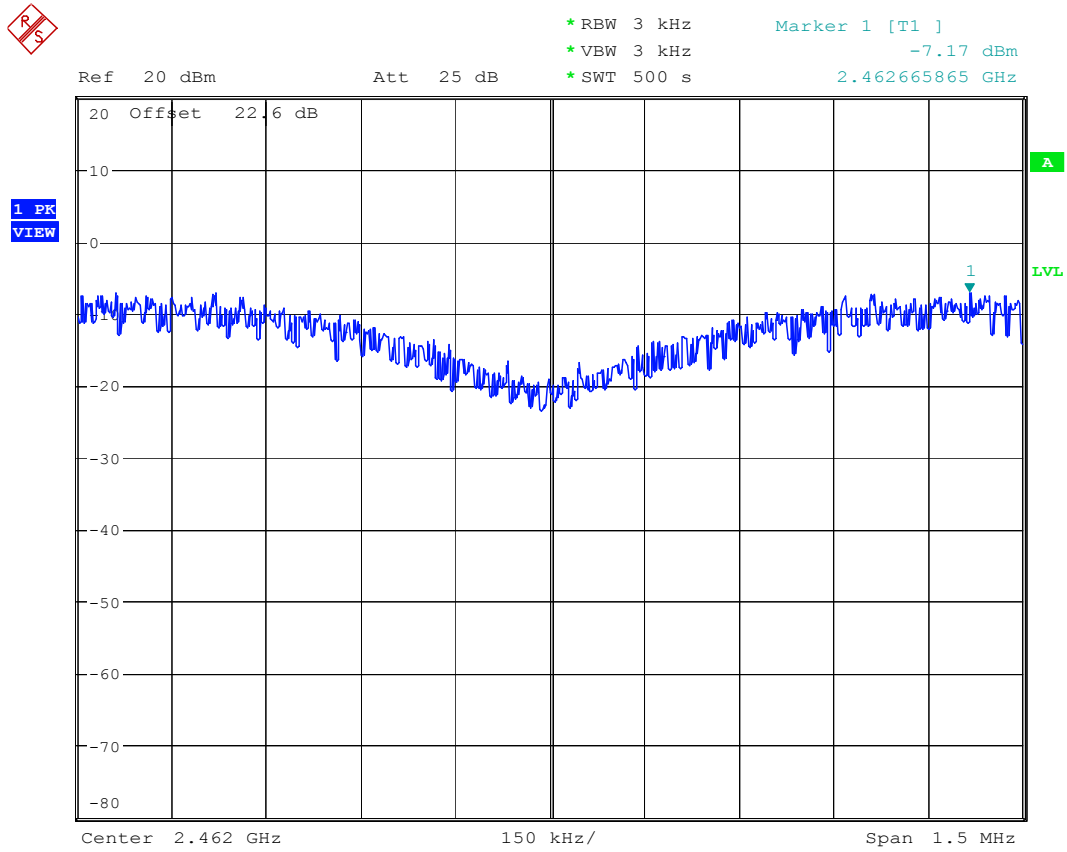


OCC BW
Date: 19.OCT.2004 08:37:15



OCC BW
Date: 19.OCT.2004 09:00:44

EQUIPMENT: ARM2

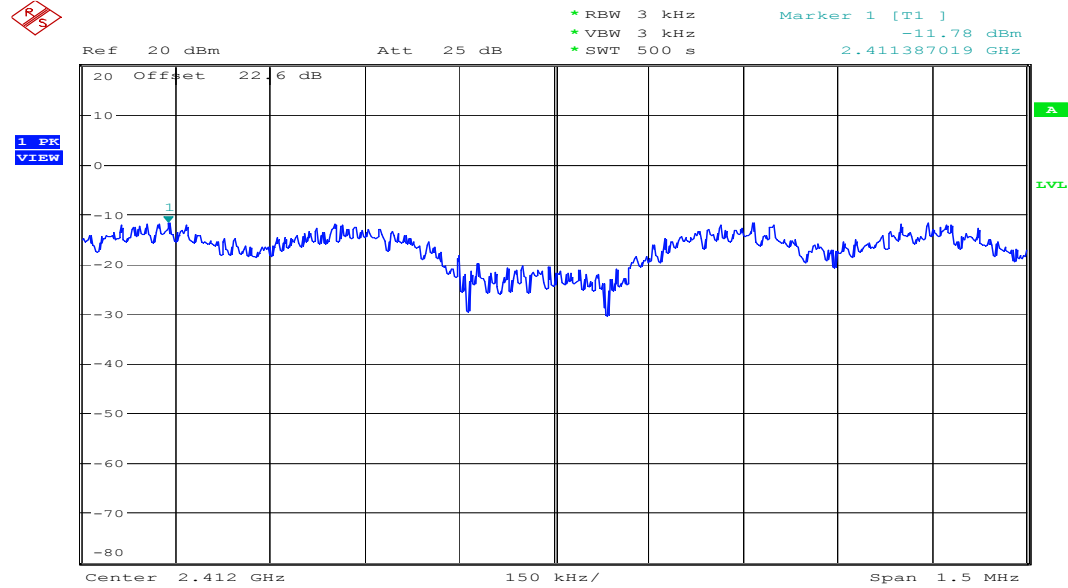


OCC BW

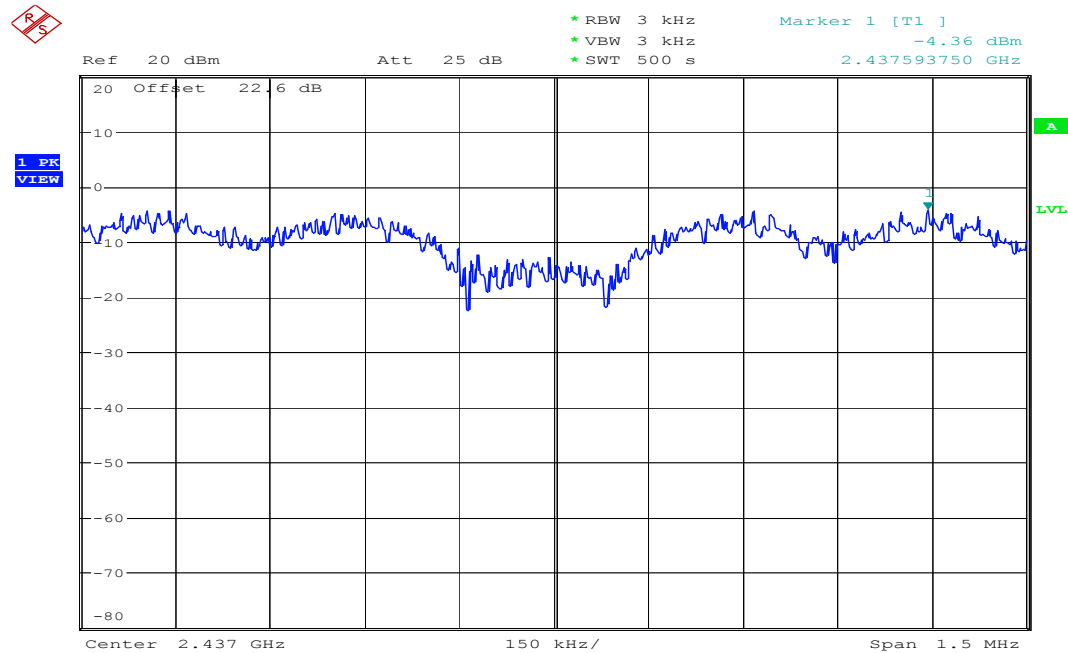
Date: 19.OCT.2004 09:22:03

EQUIPMENT: ARM2

802.11g

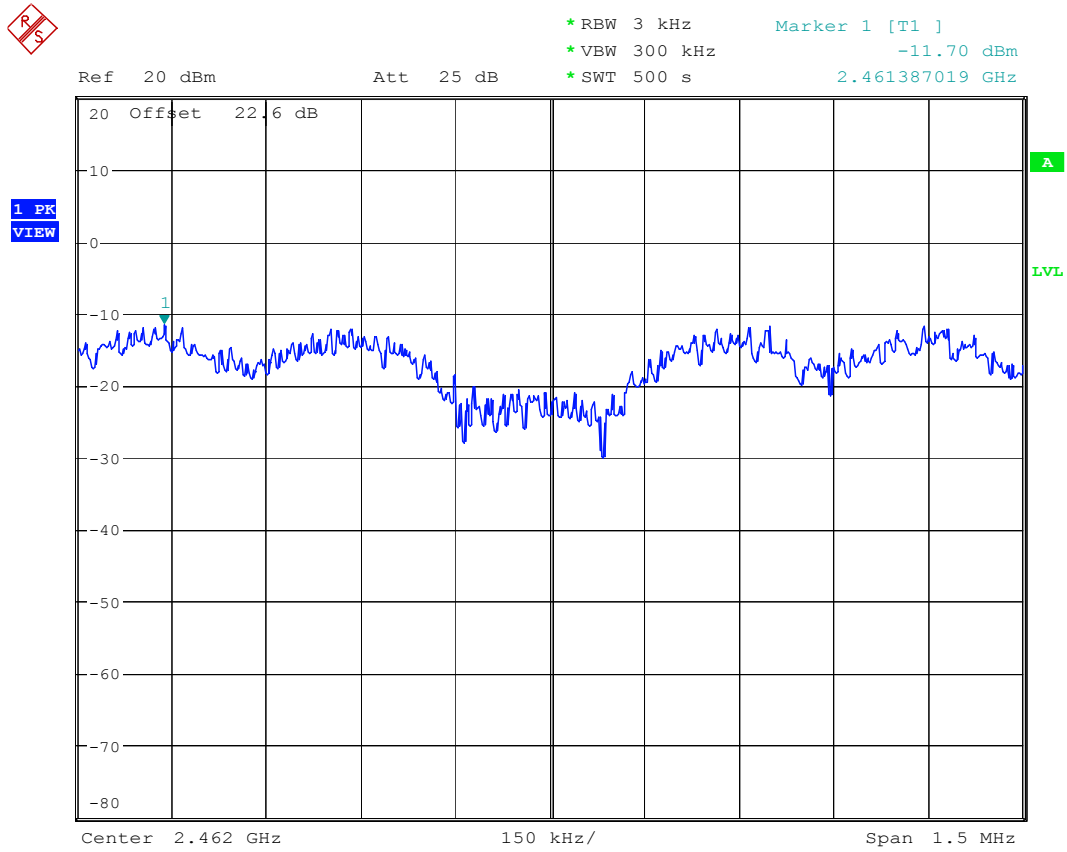


OCC BW
Date: 18.OCT.2004 16:22:31



OCC BW
Date: 18.OCT.2004 15:51:55

EQUIPMENT: ARM2



OCC BW

Date: 18.OCT.2004 15:14:07

EQUIPMENT: ARM2

Section 9. RF Exposure Evaluation

- (1) Co-location compliance for multiple frequency exposure criteria to the power density exposure limit is detailed in the table(s) below.
- (2) This device, when integrated into the host unit will be professionally installed (Fixed) to provide a minimum separation distance of 25cm from all persons as detailed in the co-location compliance table below. This device will not be co-located or operated in conjunction with any other antenna or transmitter not described in this table and application.
- (3) This device will only be operated according to the exposure conditions described in this application. End users and installers will be provided with antenna installation and transmitter operating conditions for satisfying RF exposure compliance.

Power Density Table at 25cm ARM2 FCC ID# RAR20000002						
Antenna Gain (dBi)	4 omni	6 omni	8 omni	12 omni	8 directional	11.5 directional
Power Density (mW/cm ²)	0.1109	0.1758	0.1758	0.1603	0.1758	0.1799

Co-location Compliance Table for Integrated 802.11b/g & 802.11a Radios at 25cm							
802.11b/g Radio RAR20000002 Max. Power Density (mW/cm ²)		802.11a Radio FCC ID = RARxxxxxx (below) Power Density (mW/cm ²)			Total Density for co-located radios (mW/cm ²)	Limit	
Antenna	Pwr Density	RAR 20001001	RAR 20001001	RAR 20001001			
11.5dBi	0.1799	0.1011	0.1011	0.1011	0.4832	1.0	Complies
Antenna	Pwr Density	RAR 20001002	RAR 20001002	RAR 20001002			
11.5dBi	0.1799	0.2018	0.2018	0.2018	0.7853	1.0	Complies
Antenna	Pwr Density	RAR 20005001	RAR 20005001	RAR 20005001			
11.5dBi	0.1799	0.1011	0.1011	0.1011	0.4832	1.0	Complies

EQUIPMENT: ARM2

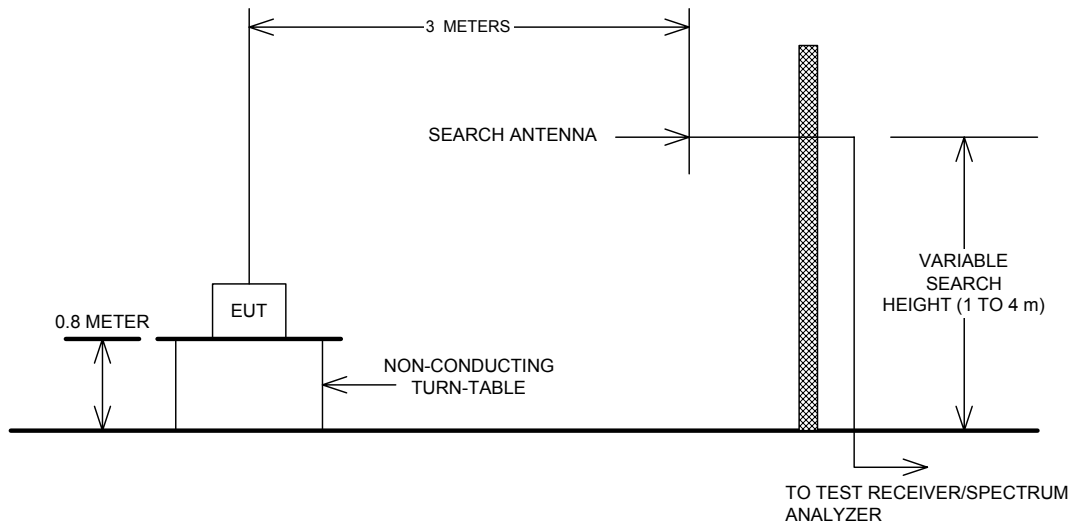
Co-location Compliance Table for Two Integrated 802.11b/g Radios at 25cm						
802.11b/g Radio RAR20000002 Max. Power Density (mW/cm ²)		802.11b/g Radio FCC ID = RAR20000002 Max. Power Density (mW/cm ²)		Total Density for co-located radios (mW/cm ²)	Limit	
Antenna	Pwr Density	Antenna	Pwr Density			
11.5dBi	0.1799	11.5dBi	0.1799	0.4832	1.0	Complies

Co-location Compliance Table for Integrated 802.11b/g and 802.11b Radios at 25cm						
802.11b/g Radio RAR20000002 Max. Power Density (mW/cm ²)		802.11b/g Radio FCC ID = RAR20000001 Max. Power Density (mW/cm ²)		Total Density for co-located radios (mW/cm ²)	Limit	
Antenna	Pwr Density	Antenna	Pwr Density			
11.5dBi	0.1799	11.5dBi	0.3819	0.5618	1.0	Complies

EQUIPMENT: ARM2

Section 10. Block Diagrams

Test Site For Radiated Emissions



Below 1 GHz

Peak detector.
RBW = 100 kHz

Above 1 GHz For Peak Emission Levels

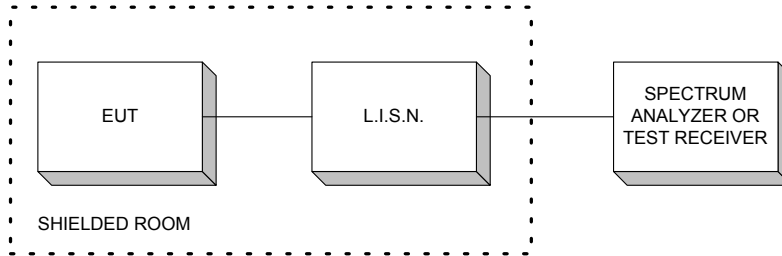
Peak detector
RBW = 1 MHz
VBW = >RBW

Above 1 GHz For Average Emission Levels

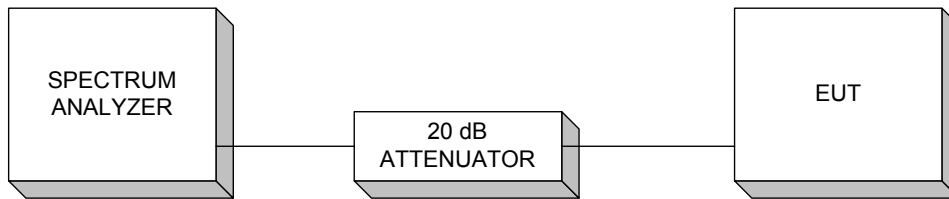
Peak detector
RBW = 1 MHz
VBW = 10 Hz

EQUIPMENT: ARM2

Conducted Emissions



Transmitter Power Density & Peak Power At Antenna Terminals



EQUIPMENT: ARM2

Section 11. Test Equipment List

Equipment List

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Rhode & Schwarz	FSU46	FA001877	26 May 04	26 May 05
1 Year	Signal Generator	Rohde & Schwarz	SMR40	FA001879	28 May 04	28 May 05
1 Year	Power Meter	Hewlett Packard	E4418B	FA001413	26 May 04	26 May 05
1 Year	Power Sensor	Hewlett Packard	8487A	FA001419	02 Feb 04	02 Feb 05
1 Year	RF AMP	JCA	4-8 GHz	FA001497	18 June 04	18 June 05
1 Year	RF AMP	JCA	2-4 GHz	FA001496	18 June 04	18 June 05
1 Year	RF AMP	Narda	5 - 18GHz	FA001409	COU	COU
1 Year	RF AMP	Narda	18 - 26.5GHz	FA001550	COU	COU
1 Year	High Pass Filter (3.9GHz)	K&L	11SH10-4000	FA001340	COU	COU
1 Year	Horn Antenna	EMCO #2	3115	FA000825	10 Dec 03	10 Dec 04
1 Year	Horn Antenna	EMCO #1	3115	FA000649	18 Dec 03	18 Dec 04
1 Year	Horn Antenna	EMCO #5	3116	FA001847	19 Jan 04	19 Jan 05
1 Year	LISN	EMCO	4825/2	FA001545	Oct. 30/03	Oct. 30/04
1 Year	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 28/04	May 28/05
1 Year	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 28/04	May 28/05
NCR	Bilog	Schaffner	CBL6112B	FA001504	NCR	NCR