Test Report:	5W43708 Issue 2
Applicant:	BelAir Networks Inc., 603 March Road, Ottawa, ON, K2K 2M5
Apparatus:	B2CC043AA Wireless LAN Access Radio Module 3 (ARM3) 2.4 GHz Band
FCC ID:	RAR 20000003
In Accordance With:	FCC Part 15 Subpart C, 15.247 FHSS System and Digitally Modulated Radiators 902-928MHz, 2400 - 2483.5 MHz, 5725-5850MHz
Tested By:	Nemko Canada Inc. 303 River Road Ottawa, Ontario K1V 1H2
Authorized By:	 Sim Jagpal, Resource Manager
Date:	6 July 2005
Total Number of Pages:	118

Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

Apparatus Assessed:	B2CC043AA Wireless LAN Access Radio Module 3 (ARM3) 2.4 GHz Band
Specification:	FCC Part 15 Subpart C, 15.247
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None
Report Release History:	Original Release

Author: Roman Kuleba

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

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Section 1 : Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:

B2CC043AA Wireless LAN Access Radio Module 3 (ARM3)

1.2 Samples Submitted for Assessment

The following samples of the apparatus have been submitted for type assessment:

Sample No.	Description	Serial No.
1	B2CC043AA Wireless LAN Access Radio Module 3 (ARM3) 2.4 GHz Band	K001018440
2	Interface Card/Module	BEL10004 REV A01
3	12 dBi Omnidirectional Access Antenna, Maxrad	MFB24012DT2
4	10 dBi Omnidirectional Access Antenna, Maxrad	MFB24010
5	8 dBi Omnidirectional Access Antenna, Maxrad	MFB24008
6	6 dBi Omnidirectional Access Antenna, Maxrad	MFB24006
7	12 dBi Directional Access Antenna, BelAir	B1BB032AA-A01
8	8 dBi Directional Access Antenna, BelAir	BEL10012-A01
9	8 dBi, Omnidirectional Access Antenna, SuperPass	SPDG160

The first samples were received on: May 16, 2005

1.3 Theory of Operation

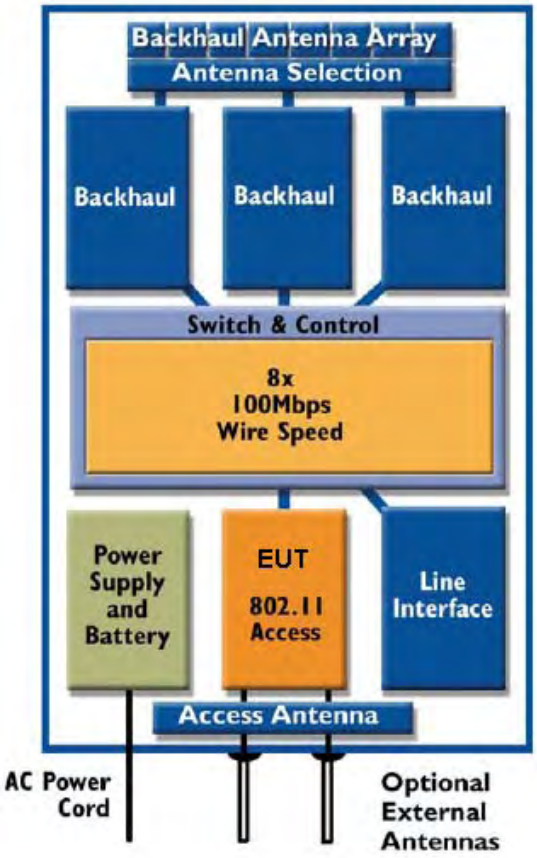
The BelAir200 is a four-radio, wireless internetworking platform designed to be used as a building block for large-scale Wi-Fi cellular LAN structures.

It integrates Wi-Fi access and wireless backhaul for connecting into multiple point-to-point cellular LAN architecture.

It can be configured with up to three 5 GHz Band Backhaul Radio Modules used to establish multiple, point-to-point links that provide wireless backhaul in the cellular LAN mesh architecture.

The EUT (Access Radio Module – ARM3) in the BelAir200 is a high power, enhanced 2.4 GHz radio optimized to beam Wi-Fi signals over a wide area.

It utilizes IEEE 802.11g modulation that allows up to 54 Mbps data rate (See table below).



Like 802.11a, 802.11g uses Orthogonal Frequency Division Multiplexing (OFDM) for transmitting data which is a more efficient means of transmission than Direct Sequence Spread Spectrum (DSSS) used by 802.11b.

When coupled with various modulation types, 802.11g (like 802.11a) is capable of supporting much higher data rates than 802.11b.

As noted in Table 1 below, 802.11g uses a combination of OFDM and DSSS transmission to support a large set of data rates (in fact, all of the data rates supported by both 802.11a and 802.11b).

Table 1: 802.11g Data Rates, Transmission Types, and Modulation Schemes

Data Rate (Mbps)	Transmission Type	Modulation Scheme
54	OFDM	64 QAM
48	OFDM	64 QAM
36	OFDM	16 QAM
24	OFDM	16 QAM
18	OFDM	QPSK1
12	OFDM	QPSK
11	DSSS	CCK2
9	OFDM	BPSK3
6	OFDM	BPSK
5.5	DSSS	CCK
2	DSSS	QPSK (BPSK)
1	DSSS	BPSK (BPSK)

In terms of radiated emissions, data rates 1 Mbps (DSSS) and 6 Mbps (OFDM) represent the worst case.

1.4 Technical Specifications of the EUT

Manufacturer:	BelAir Networks Inc.
Operating Frequency:	2412 – 2462 MHz
Peak Output Power:	27.48 dBm
Emission Designator	16M5 W1D
Rated Power:	27.0 dBm
Modulation:	802.11 b/g (BPSK, QPSK, QAM, CCK)
Antenna Data:	12 dBi, Omnidirectional Maxrad MFB24012DT2 10 dBi, Omnidirectional Maxrad MFB24010 8 dBi, Omnidirectional Maxrad MFB24008 6 dBi, Omnidirectional Maxrad MFB24006 12 dBi, Directional BelAir B1BB032AA-A01 8 dBi, Directional BelAir BEL10012-A01 8 dBi, Omnidirectional SuperPass SPDG160
Antenna Connector:	MCX

Section 2 : Test Conditions

2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart C, 15.247

FHSS System and Digitally Modulated Radiators

902-928MHz, 2400 - 2483.5 MHz, 5725-5850MHz

2.2 Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

2.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	:	15 – 30 ^{o}C
Humidity range	:	20 - 75 %
Pressure range	:	86 - 106 kPa
Power supply range	:	+/- 5% of rated voltages

2.4 Test Equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Rhode & Schwarz	FSP40	FA001920	Mar. 22, 05	Mar. 22, 06
Signal Generator	Rohde & Schwarz	SMR40	FA001879	May 28, 04	May 28, 05
Power Meter	Hewlett Packard	E4418B	FA001678	Mar 8, 05	Mar 8, 06
Power Sensor	Hewlett Packard	8487A	FA001419	Apr. 29, 05	Apr. 29, 06
RF AMP	JCA	4-8 GHz	FA001497	COU*	COU*
RF AMP	JCA	2-4 GHz	FA001496	COU*	COU*
RF AMP	Narda	5 - 18GHz	FA001409	COU*	COU*
RF AMP	Narda	18 - 26.5GHz	FA001550	COU*	COU*
High Pass Filter (3.9GHz)	K&L	11SH10-4000	FA001340	COU*	COU*
Attenuator, 20 dB	Narda	776B-20	FA001153	COU*	COU*
Horn Antenna	EMCO #2	3115	FA000825	Dec. 14, 04	Dec. 14, 05
Horn Antenna	EMCO #1	3115	FA000649	Dec. 22, 04	Dec. 22, 05
Horn Antenna	EMCO #5	3116	FA001847	Apr 25, 05	Apr 25, 06
LISN	EMCO	4825/2	FA001545	Jan. 13, 05	Jan. 13, 06
Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 18, 05	May 18, 06
Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 18, 05	May 18, 06
Bilog	Schaffner	CBL6112B	FA001504	NCR**	NCR**

* COU (Calibrate on Use)

** NCR (No Calibration Required)

Section 3 : Observations

3.1 Modifications Performed During Assessment

No modifications were performed during assessment.

3.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

3.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

3.4 Test Deleted

No Tests were deleted from this assessment.

Section 4 : Results Summary

This section contains the following:

FCC Part 15 Subpart C : Test Results

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

N	No : not applicable / not relevant.
Y	Yes : Mandatory i.e. the apparatus shall conform to these tests.
N/T	Not Tested, mandatory but not assessed. (See section 3.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

4.1 FCC Part 15 Subpart C : Test Results

Part 15	Test Description	Required	Result
15.207(a)	Powerline Conducted Emissions	Y	PASS
15.209(a)	Radiated Emissions within Restricted Bands	Y	PASS
15.247(a)(1)	Frequency hopping systems	N	
15.247(a)(1)(i)	Frequency hopping systems operating in the 902-928 MHz band	N	
15.247(a)(1)(ii)	Frequency hopping systems operating in the 5725-5850 MHz band	N	
15.247(a)(1)(iii)	Frequency hopping systems operating in the 2400-2483.5 MHz band	N	
15.247(a)(2)	Systems using digital modulation techniques	Y	PASS
15.247(b)(1)	Maximum peak output power of Frequency hopping systems operating in the 2400-2483.5 MHz band and 5725-5850 MHz band	N	
15.247(b)(2)	Maximum peak output power of Frequency hopping systems operating in the 902-928 MHz band	N	
15.247(b)(3)	Maximum peak output power of systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands	Y	PASS
15.247(b)(4)	Maximum peak output power	Y	PASS
15.247(c)(1)	Fixed point-to-point Operation with directional antenna gains greater than 6 dBi	N	
15.247(c)(2)	Transmitters operating in the 2400-2483.5 MHz band that emit multiple directional beams	N	
15.247(d)	Radiated Emissions Not in Restricted Bands	Y	PASS
15.247(e)	Power Spectral Density for Digitally Modulated Devices	Y	PASS
15.247(f)	Time of Occupancy for Hybrid Systems	N	
15.31(e)	Supply Voltage Variation	Y	PASS

Notes:

Appendix A : Test Results

Power Line Conducted Emissions

Criteria: Clause 15.207(a) Powerline Conducted Emissions

Frequency of Conducted limit (dBμV)

Emission (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Conditions:

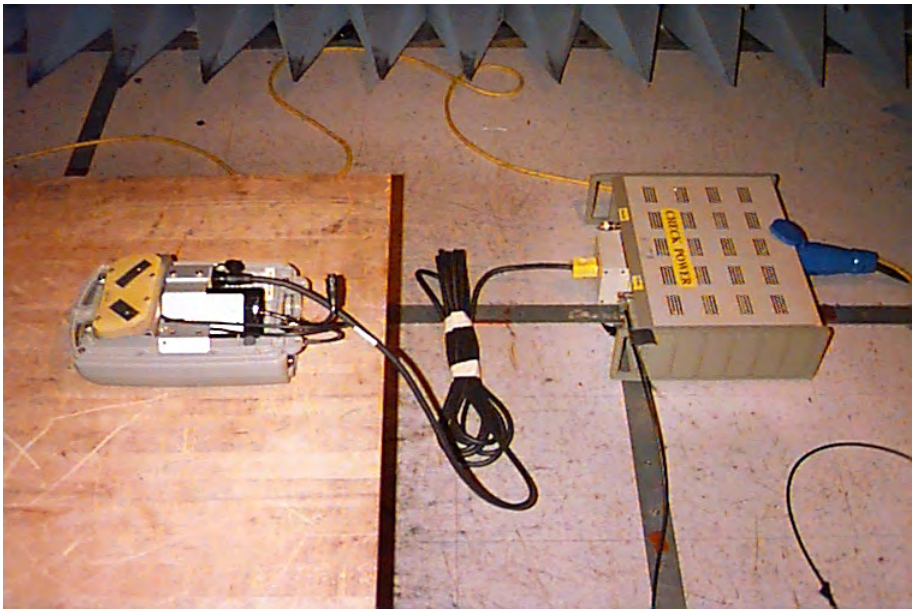
Sample Number:	1	**Temperature:**	22 ºC
Date:	June 30, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

Test Results: See Attached Plots and Tables.

Additional Observations:

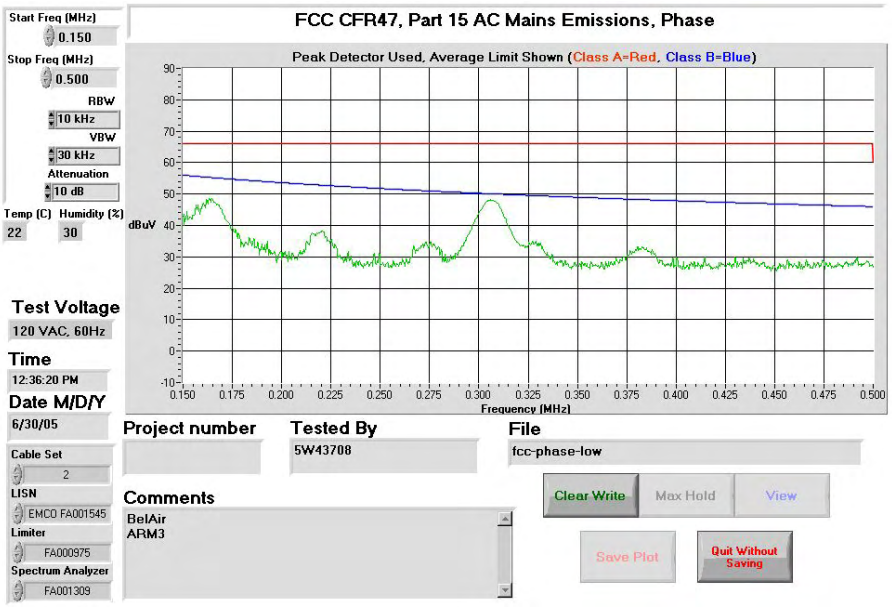
A ferrite core (Steward LFB180100-000) with four turns of wire (bifilar) was connected both to the phase and to the neutral line on the power supply in order to insure that the power line conducted emissions did not exceed the limits.

Conducted Disturbance at Mains, Setup Photos

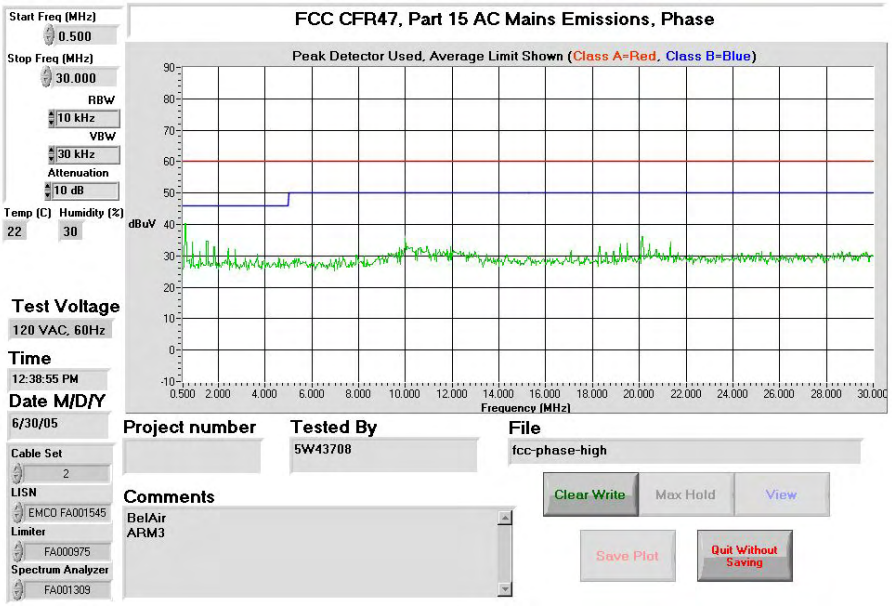


Conducted Disturbance at Mains, Plots

Phase, 0.150 – 0.500 MHz

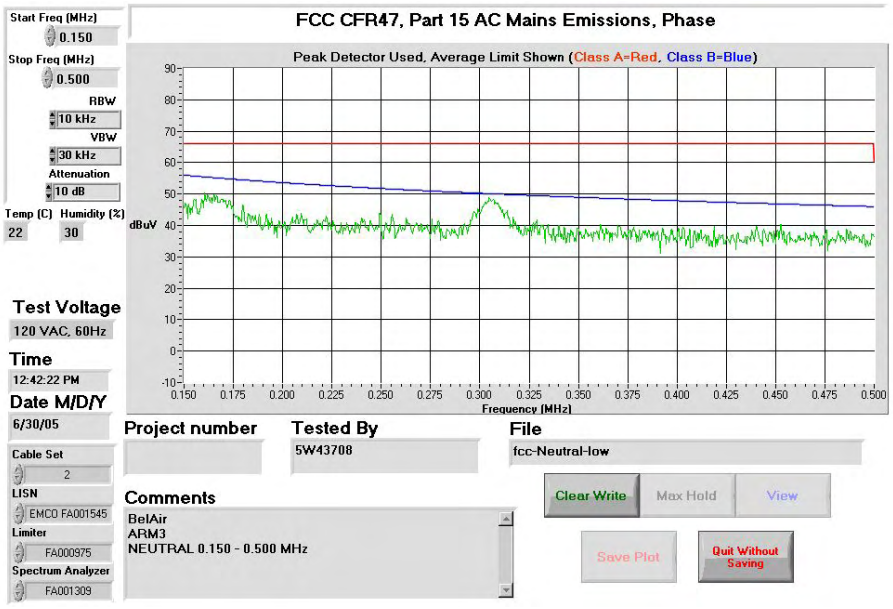


Phase, 0.500 – 30 MHz

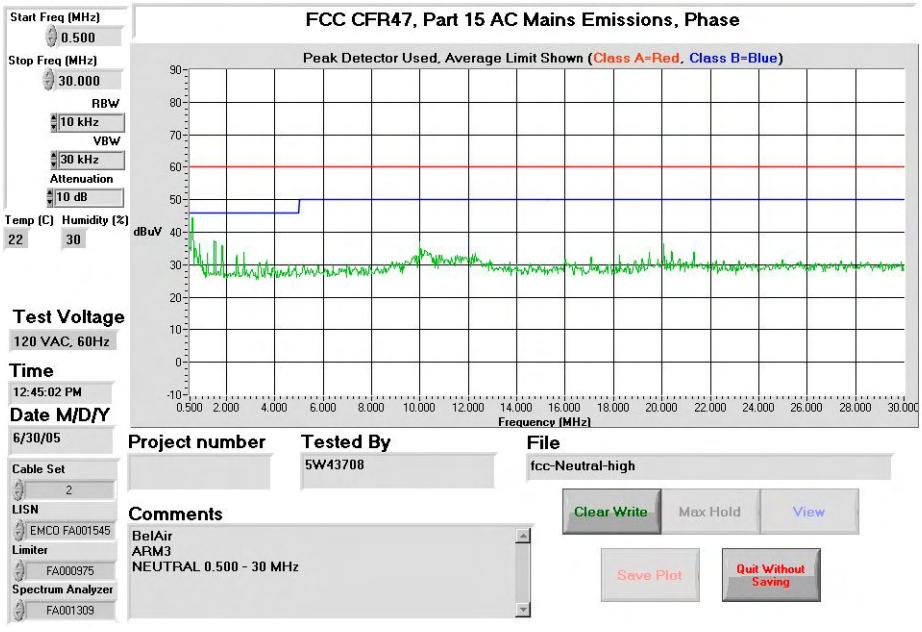


Conducted Disturbance at Mains Plots, continued

Neutral, 0.150 – 0.500 MHz



Neutral, 0.500 – 30 MHz



Test Date: June 30, 2005								
Engineer's Name: Roman Kuleba								
Tested as per: Table Top								
Mains Input Voltage: 120VAC				**Mains Input Frequency:** 60Hz				
Port Investigation Data								
Port under test: AC Mains Input								
Conductor	Frequency (MHz)	Detector	Emission Level (dBuV)	LISN Loss (dB)	Cable Loss (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)
Phase	0.1643	Quasi Peak	44.9	0.00	0.00	44.90	65.2	20.3
		Average	40.8	0.00	0.00	40.80	55.2	14.4
	0.2184	Quasi Peak	31.9	0.00	0.20	32.10	62.9	30.8
		Average	28.1	0.00	0.20	28.30	52.9	24.6
	0.3033	Quasi Peak	48.0	0.00	0.20	48.20	60.2	12.0
		Average	47.9	0.00	0.20	48.10	50.2	2.1
	0.6077	Quasi Peak	40.4	0.00	0.00	40.40	56.0	15.6
		Average	39.9	0.00	0.00	39.90	46.0	6.1
	1.5193	Quasi Peak	33.9	0.00	0.16	34.06	56.0	21.9
		Average	33.7	0.00	0.16	33.86	46.0	12.1
	10.0159	Quasi Peak	29.1	0.20	0.42	29.72	60.0	30.3
		Average	27.8	0.20	0.42	28.42	50.0	21.6
Neutral	0.1643	Quasi Peak	45.4	0.00	0.00	45.40	65.2	19.8
		Average	41.5	0.00	0.00	41.50	55.2	13.7
	0.1638	Quasi Peak	45.4	0.00	0.02	45.42	65.3	19.8
		Average	41.5	0.00	0.02	41.52	55.3	13.7
	0.3031	Quasi Peak	46.5	0.00	0.20	46.70	60.2	13.5
		Average	46.3	0.00	0.20	46.50	50.2	3.7
	0.6062	Quasi Peak	45.4	0.00	0.00	45.40	56.0	10.6
		Average	45.2	0.00	0.00	45.20	46.0	0.8
	10.0169	Quasi Peak	23.6	0.20	0.42	24.22	60.0	35.8
		Average	22.7	0.20	0.42	23.32	50.0	26.7
	20.0316	Quasi Peak	33.6	0.22	0.40	34.22	60.0	25.8
		Average	32.9	0.22	0.40	33.52	50.0	16.5
Notes								
None								
Test Result								
Final Test Result: Pass								

Additional Observations:

Power Lines Conducted measurements were performed using Spectrum Analyzer with Quasi-Peak and Average Detector and RBW set to 9 kHz.

Radiated Emissions within Restricted Bands

Criteria: Clause 15.209(a) Radiated Emissions within Restricted Bands

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400/F (kHz)	300
0.490-1.705	24000/F (kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Conditions:

Sample Number:	1 – 9	**Temperature:**	22 ºC
Date:	May 13 & June 19-22, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

Test Results:

See Attached Table for Results

Note:

The EUT uses a ‘maximum power limit look-up table’ that is recorded in an EEPROM to limit maximum power on a per-channel and per-rate basis. The limits will be set according to the final measurements data from this report that meet certification requirements for maximum power and for restricted bands with margin.

15.209(a) Radiated Emissions within Restricted Bands

	Frequency (MHz)	Antenna	Polarity	RCVD Signal (dBuV)	Ant. Factor (dB)	Amp. Gain / Cable Loss (dB)	Duty Cycle Corr.	Distance Correction	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4824	FA000825	V	63.44	32.95	53.64	0.06	0.00	42.75	74	31.25	Peak
									42.69	54	11.31	Average
2	4824	FA000825	H	64.11	32.95	53.64	0.06	0.00	43.42	74	30.58	Peak
									43.36	54	10.64	Average
3	4874	FA000825	V	72.23	33.06	52.79	0.06	0.00	52.50	74	21.50	Peak
									52.44	54	1.56	Average
4	4874	FA000825	H	72.84	33.06	52.79	0.06	0.00	53.11	74	20.89	Peak
									53.05	54	0.95	Average
5	4924	FA000825	V	63.91	33.17	51.70	0.06	0.00	45.38	74	28.62	Peak
									45.32	54	8.68	Average
6	4924	FA000825	H	67.56	33.17	51.70	0.06	0.00	49.03	74	24.97	Peak
									48.97	54	5.03	Average
7	7311	FA000825	V	51.98	35.97	53.78	0.06	0.00	34.17	74	39.83	Peak
									34.11	54	19.89	Average
8	7311	FA000825	H	49.17	35.97	53.78	0.06	0.00	31.36	74	42.64	Peak
									31.30	54	22.70	Average
9	7386	FA000825	V	49.16	36.13	54.09	0.06	0.00	31.20	74	42.80	Peak
									31.14	54	22.86	Average
10	7386	FA000825	H	49.42	36.13	54.09	0.06	0.00	31.46	74	42.54	Peak
									31.40	54	22.60	Average

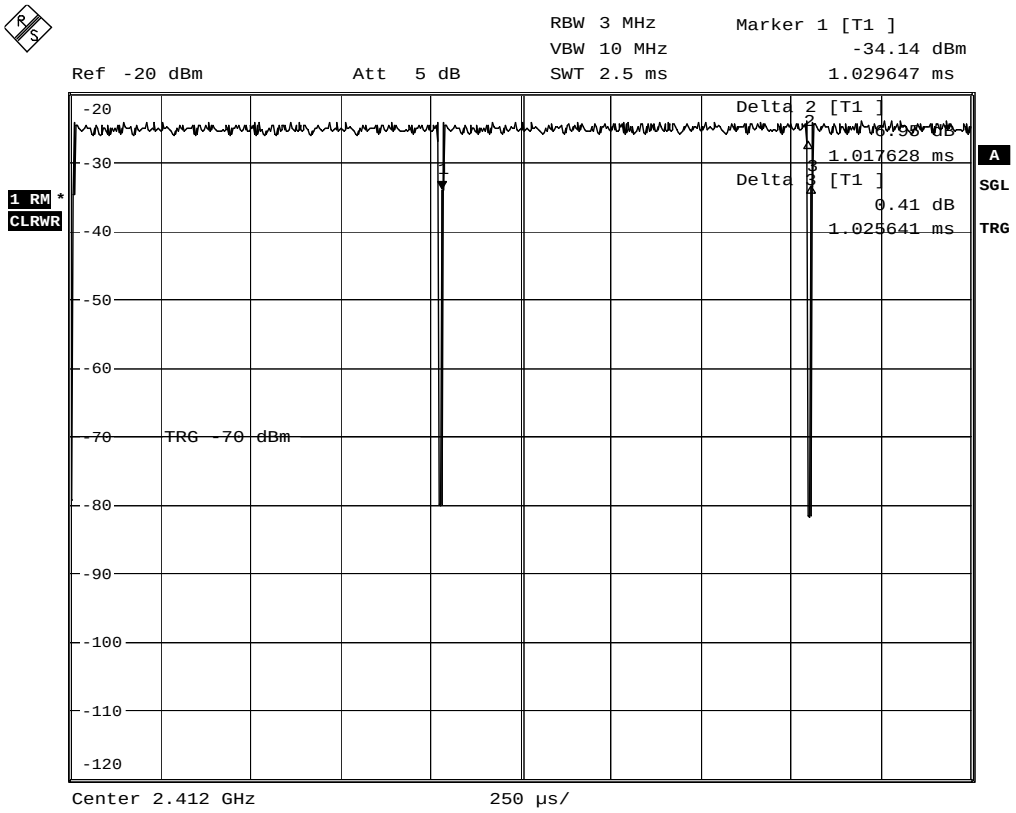
Sample Calculation:

Peak Emission = RCVD Signal (Peak) + AF – G_{AMP} = 63.44 dBuV + 32.95 dB/m – 53.64 dB = 42.75 dBuV/m
Avg. Emission = Peak Emission – Duty Cycle Corr. = 42.75 dBuV/m – 0.06 dB = 42.69 dBuV/m

Additional Observations:

The Spectrum was searched from 30 MHz to the 10th Harmonic.
These results apply to emissions found in the Restricted Bands defined in FCC Part 15 Subpart C, 15.205.
The highest emissions from the EUT were detected by placing the tested module in different positions in 3 different axes and tilting the antenna in different angles to find the maximum in radiation pattern.
All measurements were performed using a Peak Detector with 100 kHz RBW below 1GHz and a 1MHz RBW above 1GHz at a distance of 3 meters.

Duty Cycle:



Date: 27.MAY.2005 10:32:54

Marker 1: 1.029647 ms
Marker 2: $\Delta 2 = T_{ON} = 1.017628$ ms
Marker 3: $\Delta 3 = T_{ON} + T_{OFF} = 1.025641$ ms

$$\text{Duty Cycle} = \frac{T_{ON}}{T_{ON} + T_{OFF}} \cdot 100\% = \frac{\Delta 2}{\Delta 3} \cdot 100\% = \frac{1.017628\,\text{ms}}{1.025641\,\text{ms}} \cdot 100\% = 99.219\%$$

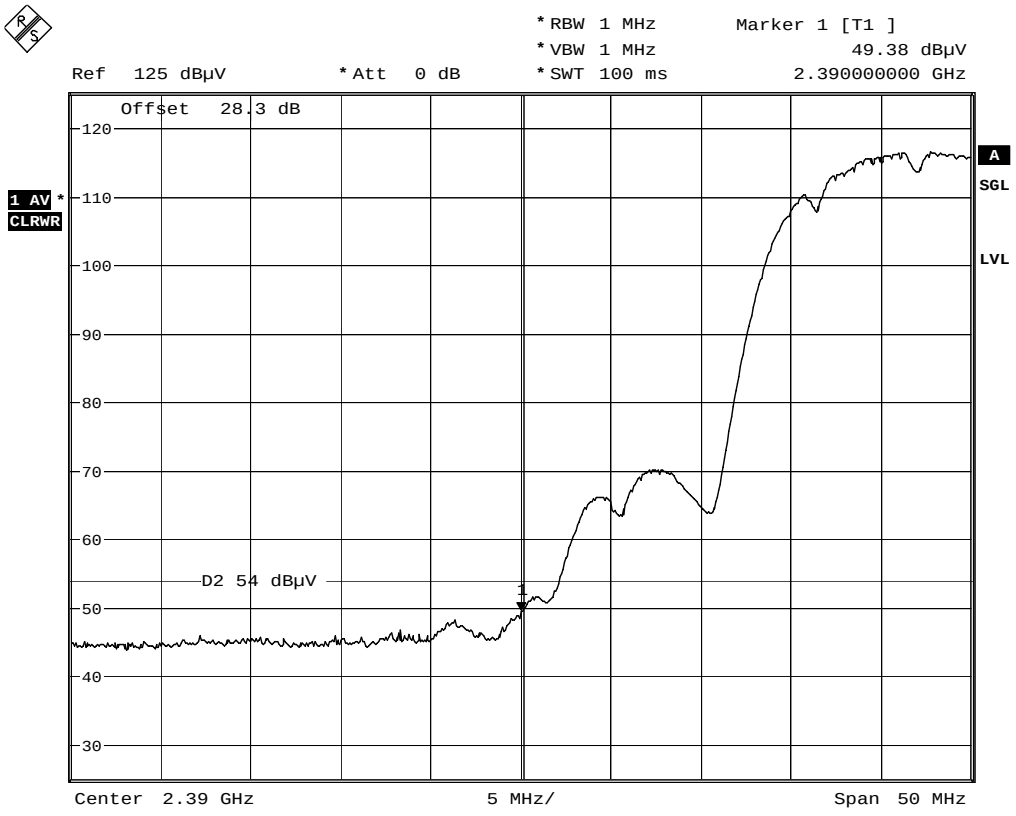
Transmission-on-time within 100 milliseconds period: T = 99.219 ms

$$\text{Duty Cycle Correction} = 20 \cdot \log_{10}\left(\frac{T}{100\,\text{ms}}\right) = 20 \cdot \log_{10}\left(\frac{99.219\,\text{ms}}{100\,\text{ms}}\right) = -0.06\,\text{dB}$$

Radiated Emissions within Restricted Bands - Band Edge

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

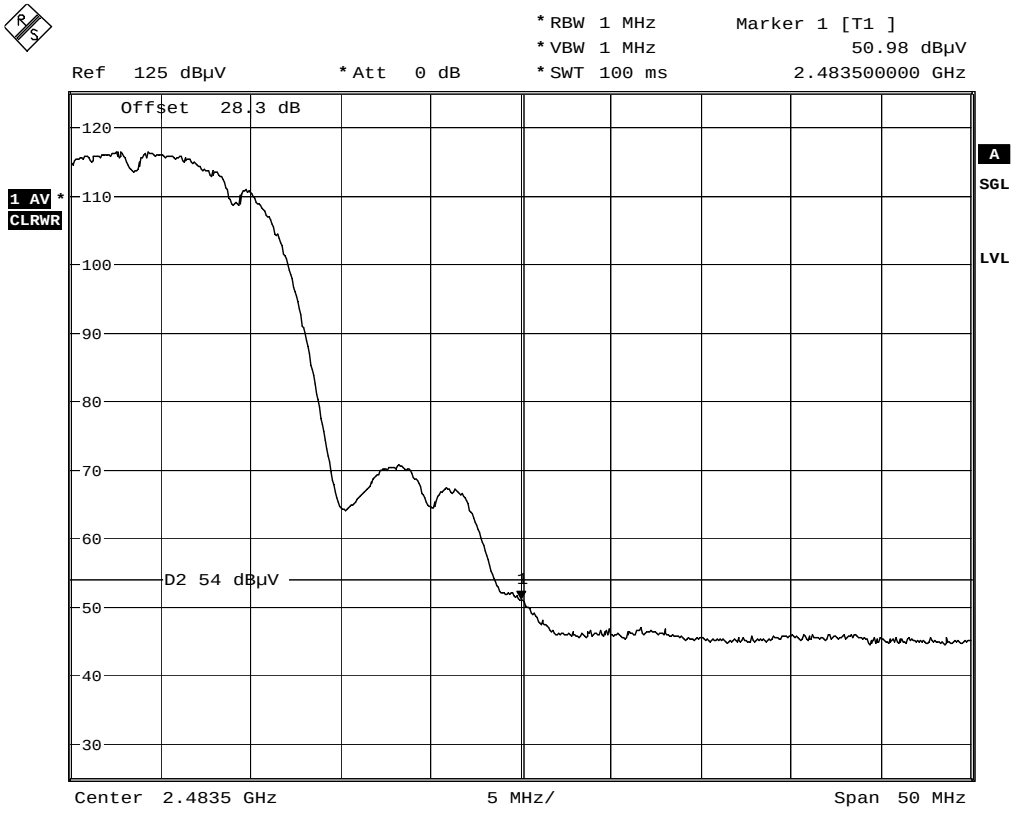
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.78 dBm)
Average Value Measured at 2390 MHz: 49.38 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:00:20

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

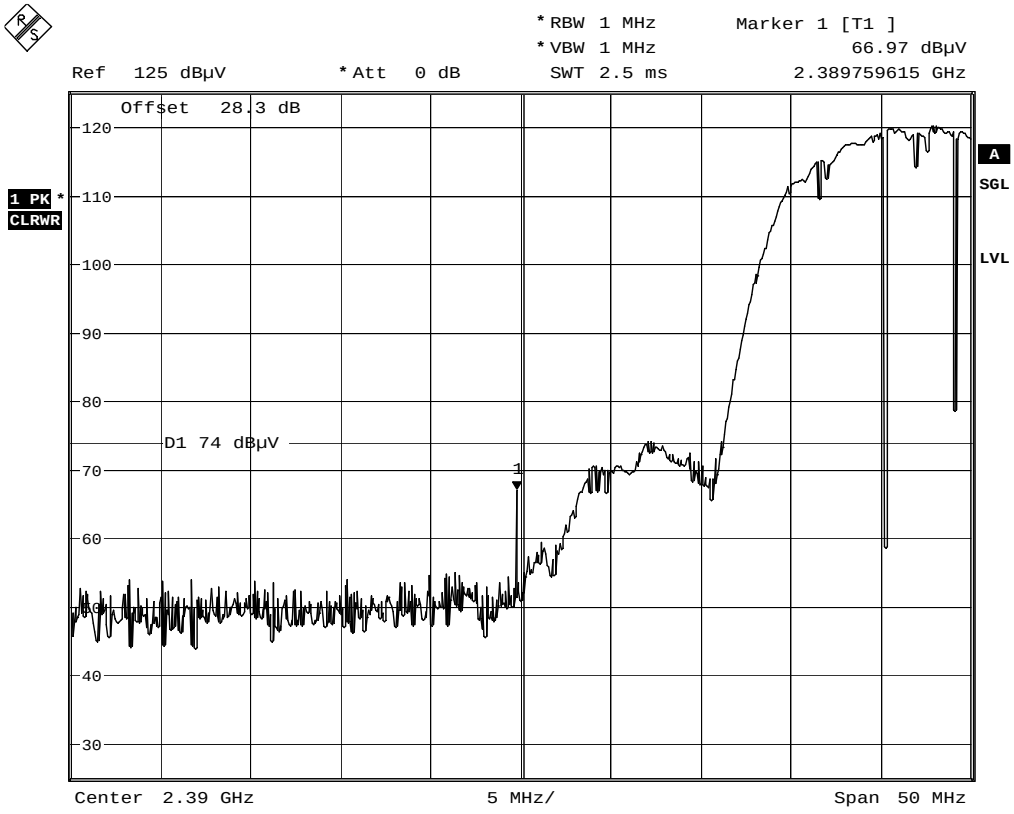
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.94 dBm)
Average Value Measured at 2483.5 MHz: 50.98 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:16:48

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

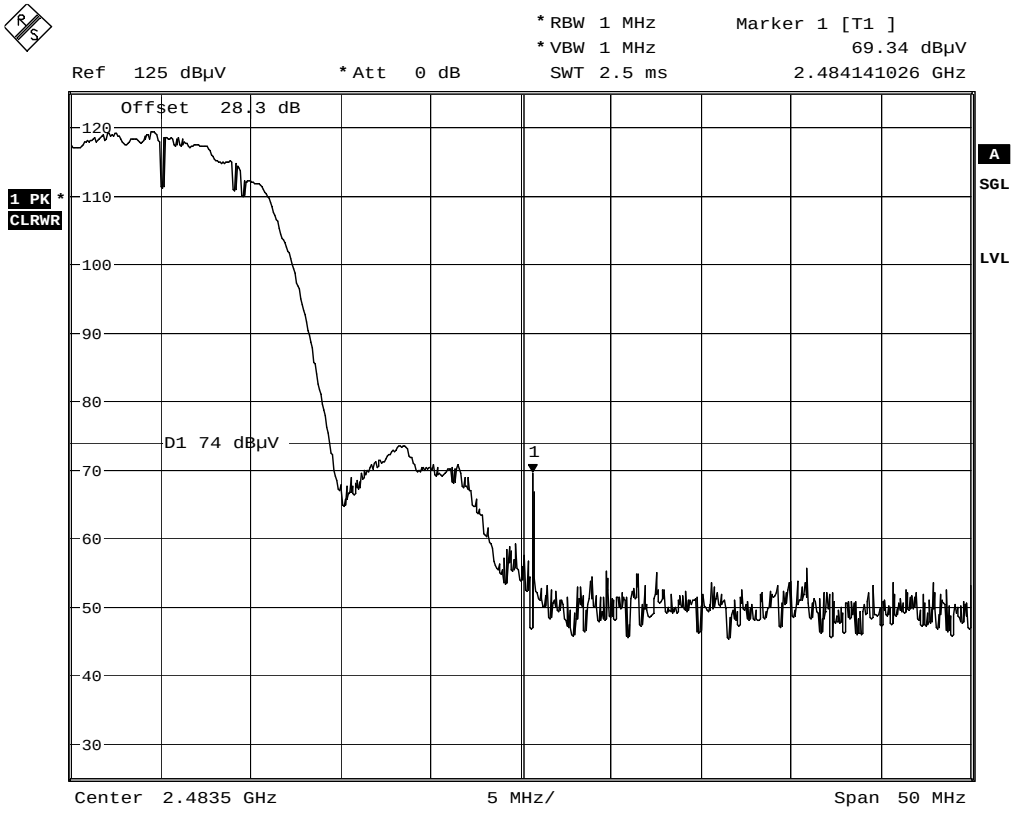
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.78 dBm)
Peak Value Measured at 2390 MHz: 66.97 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:05:40

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

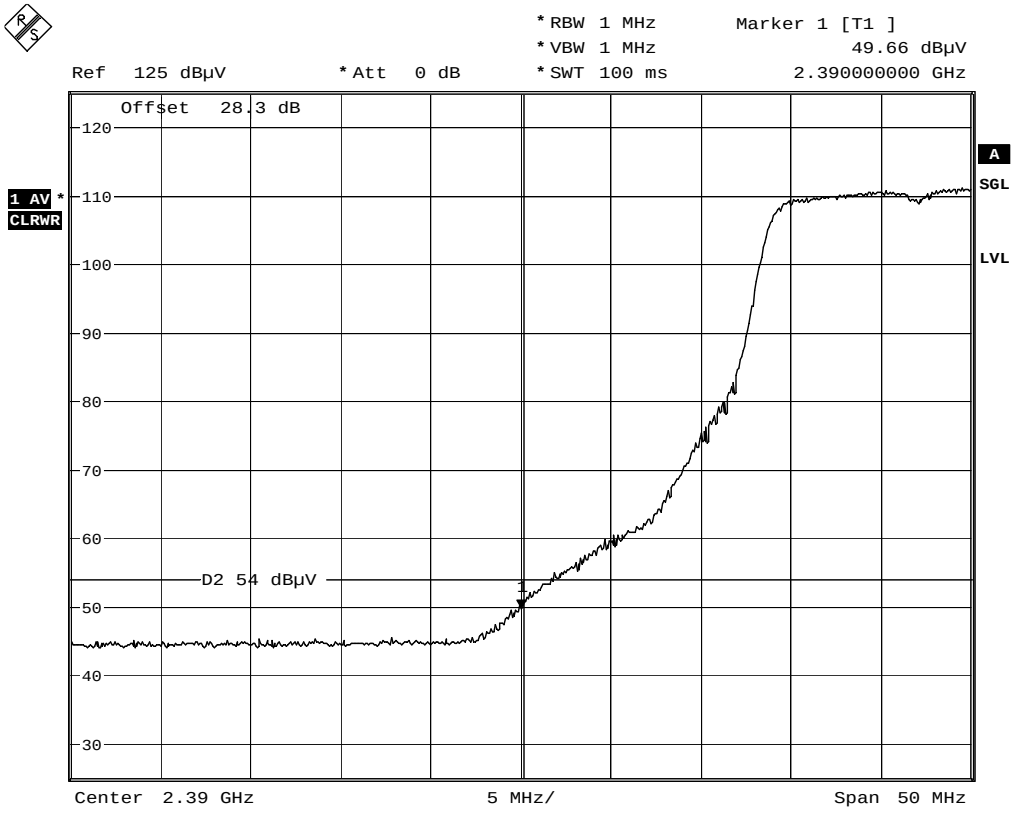
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.94 dBm)
Peak Value Measured at 2483.5 MHz: 69.34 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:18:45

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

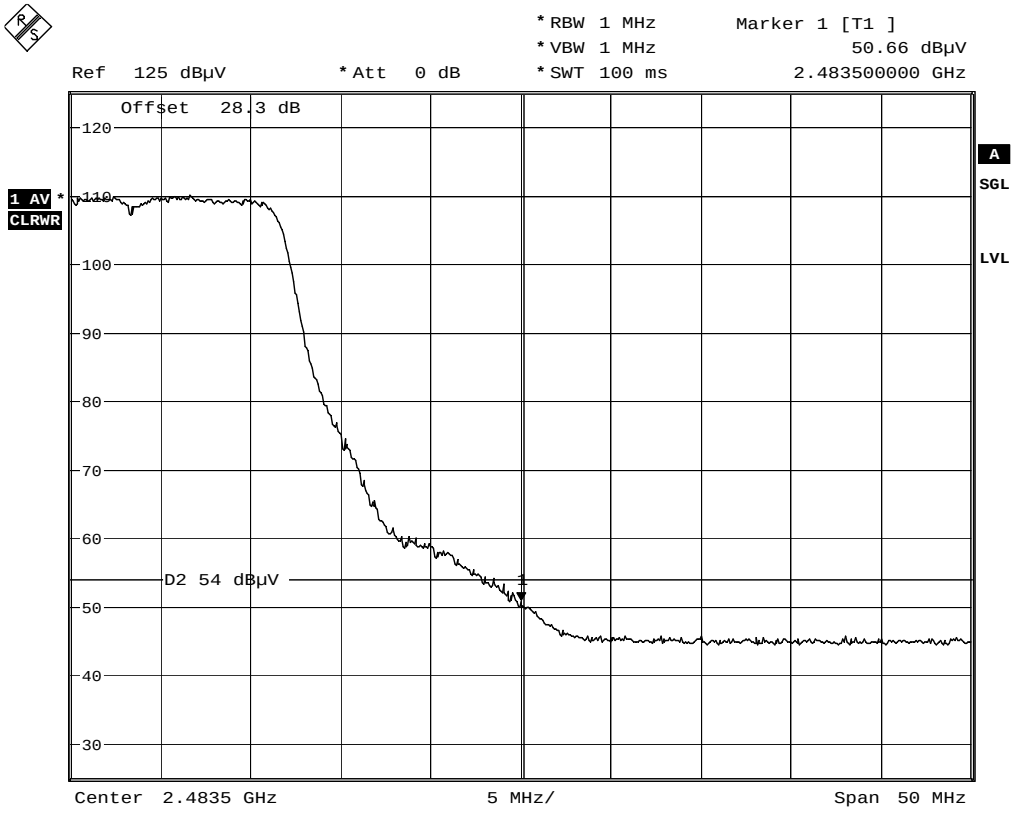
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 6 Mbps, Output Power Level Setting: 102 (22.43 dBm)
Average Value Measured at 2390 MHz: 49.66 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:01:51

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

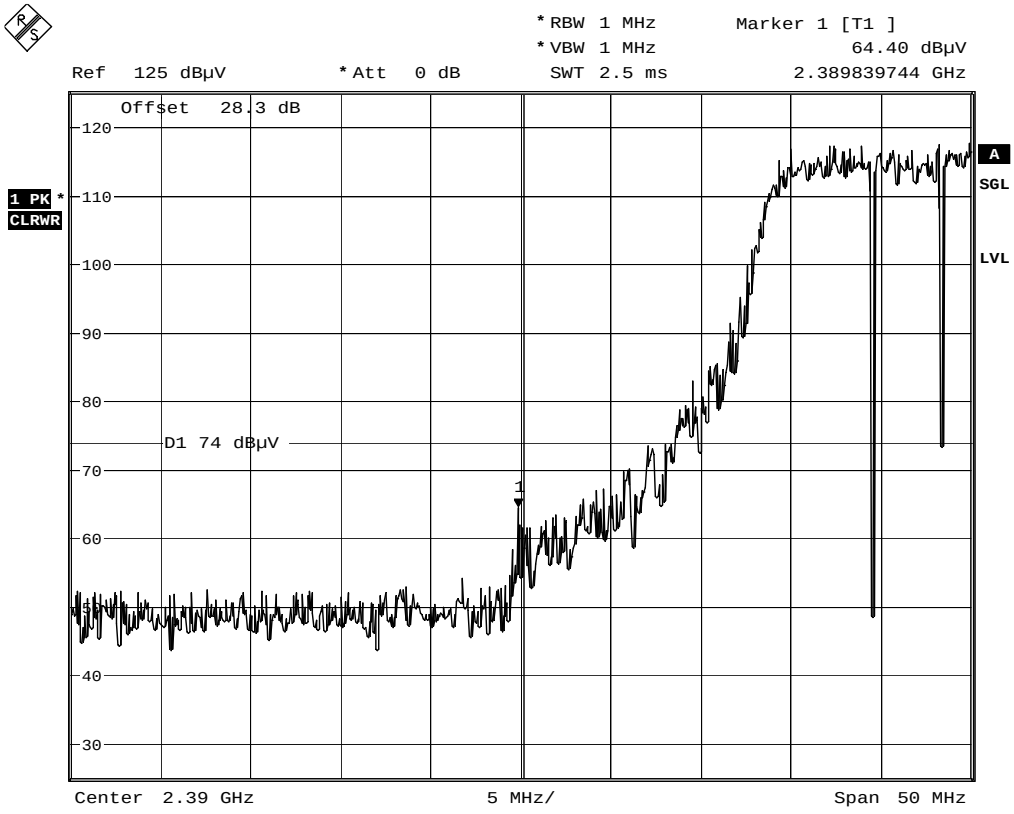
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 6 Mbps, Output Power Level Setting: 102 (21.57 dBm)
Average Value Measured at 2483.5 MHz: 50.66 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:12:46

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

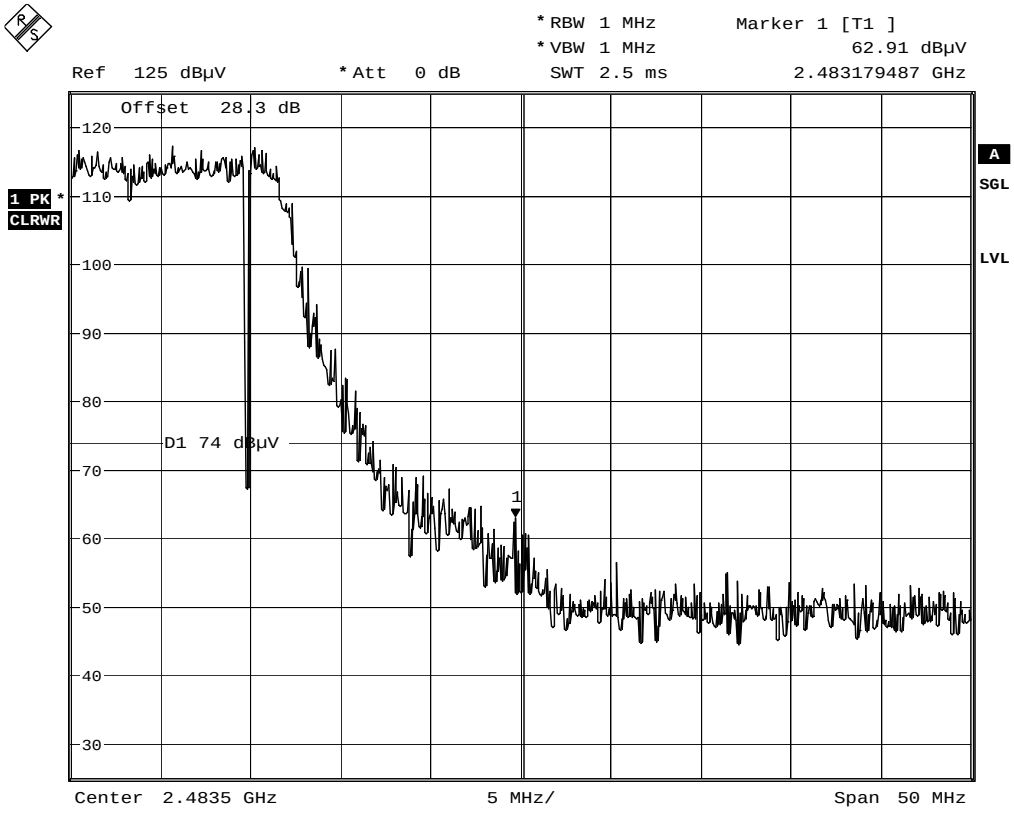
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 6 Mbps, Output Power Level Setting: 102 (22.43 dBm)
Peak Value Measured at 2390 MHz: 64.40 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:07:02

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

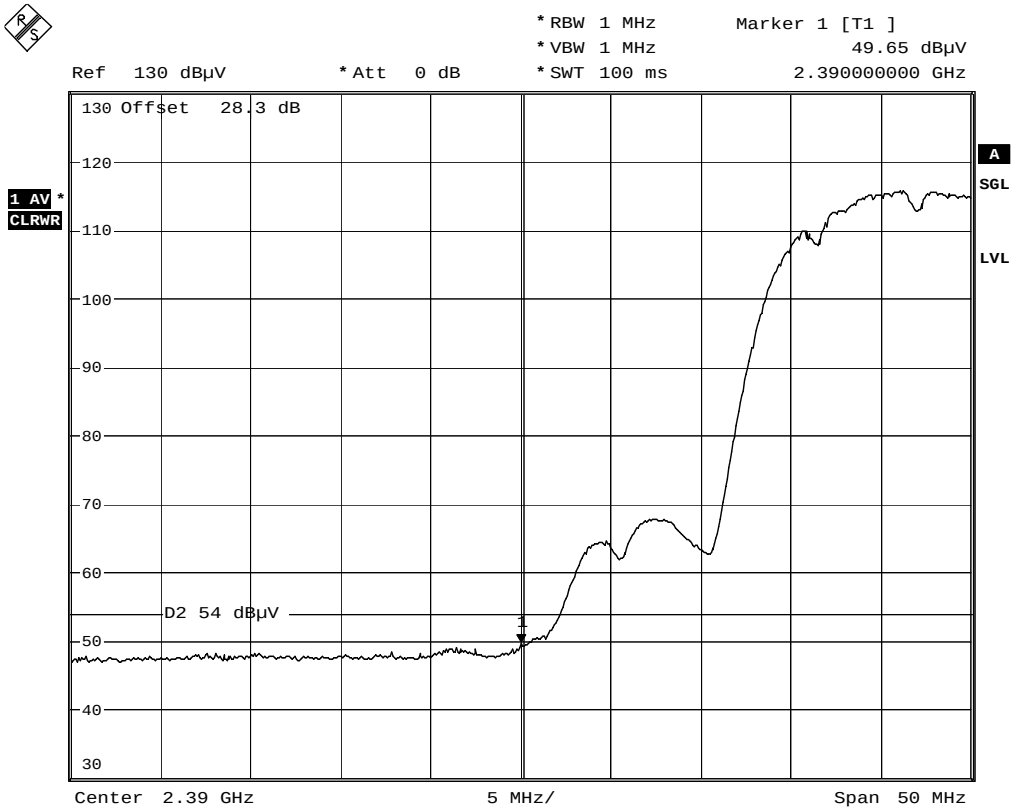
12 dBi Directional Access Antenna, B1BB032AA-A01
Data Rate: 6 Mbps, Output Power Level Setting: 102 (21.57 dBm)
Peak Value Measured at 2483.5 MHz: 62.91 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 16:21:08

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

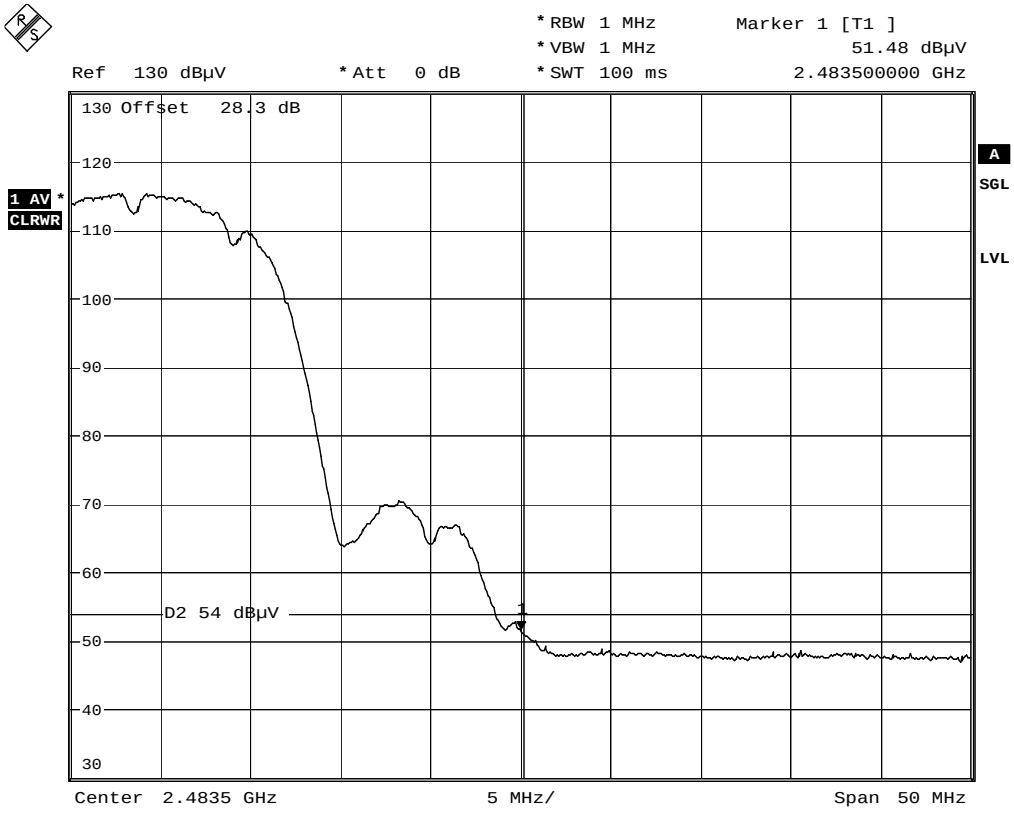
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.55 dBm)
Average Value Measured at 2390 MHz: 49.65 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:46:58

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

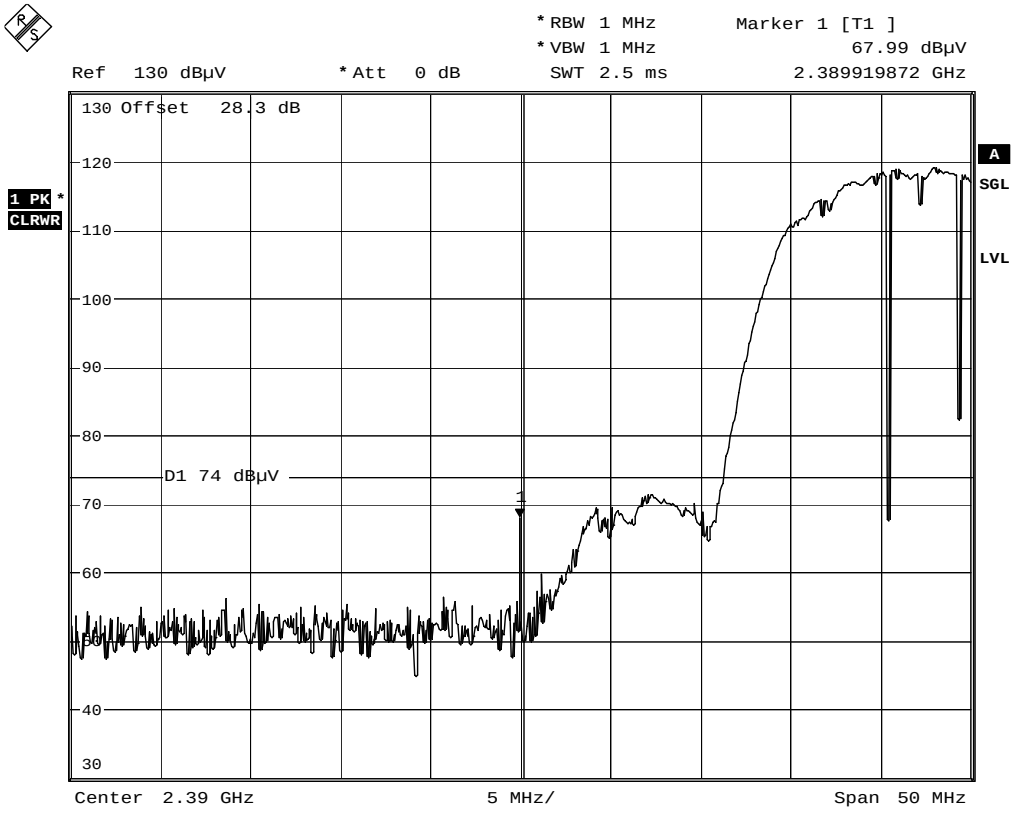
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.35 dBm)
Average Value Measured at 2483.5 MHz: 51.48 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:53:40

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

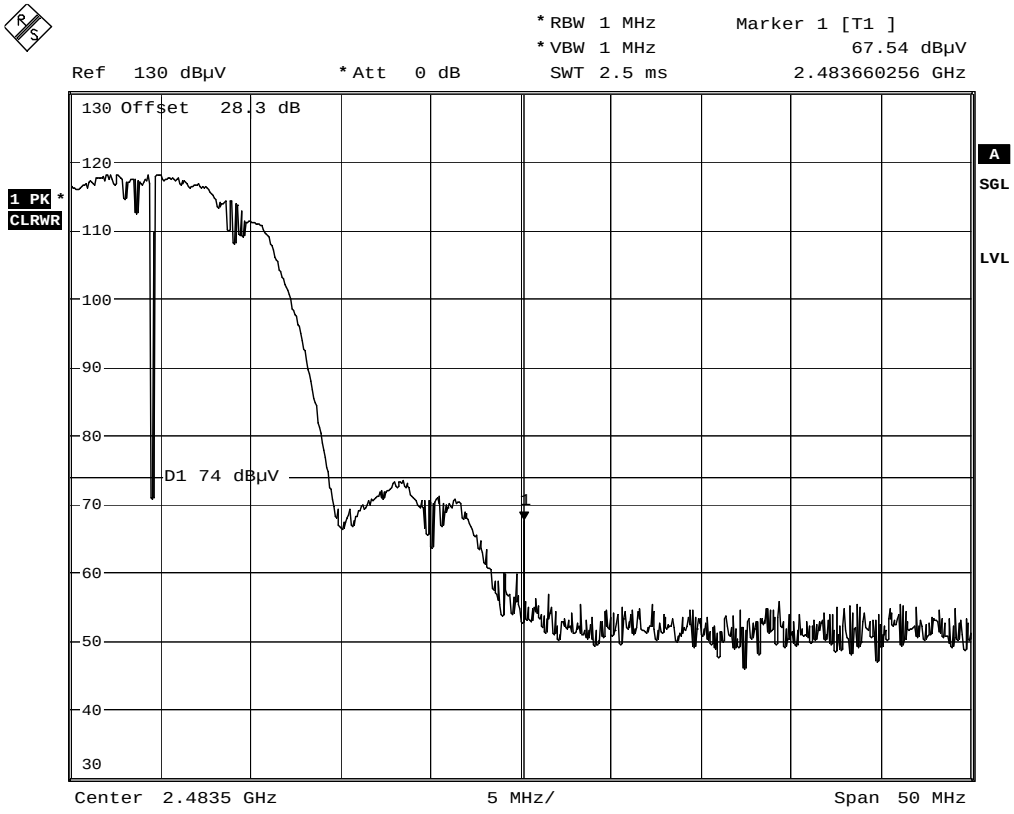
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.55 dBm)
Peak Value Measured at 2390 MHz: 67.99 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:49:34

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

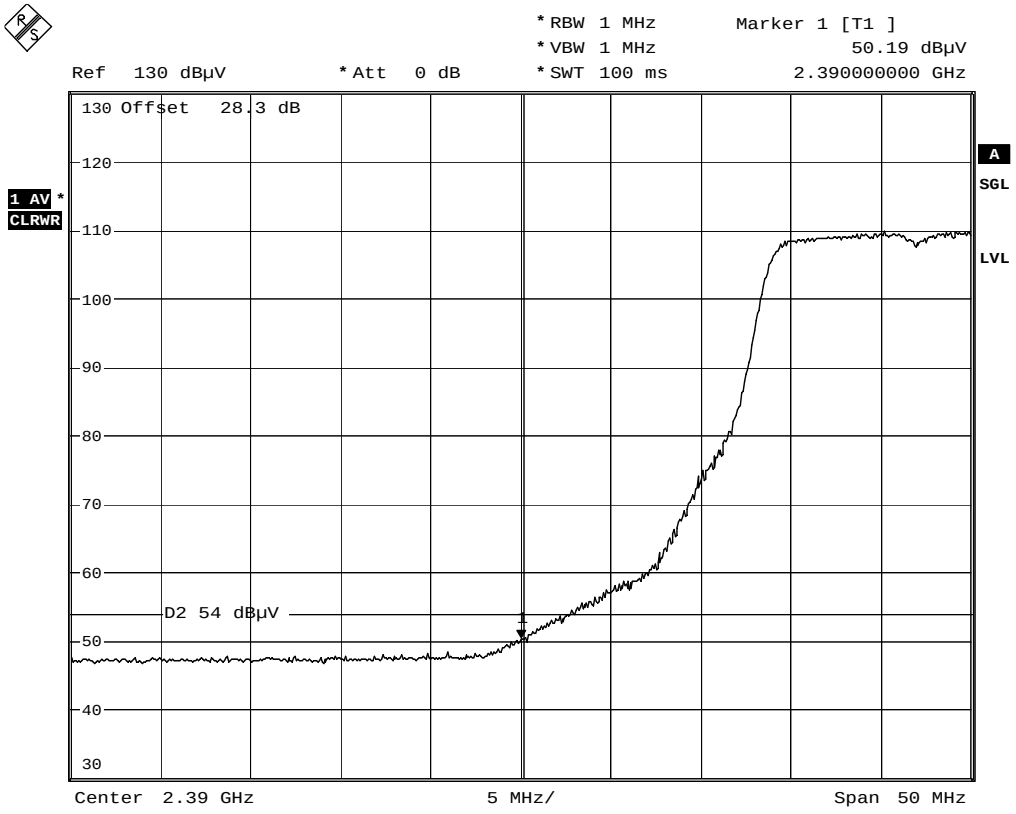
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.35 dBm)
Peak Value Measured at 2483.5 MHz: 67.54 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:57:04

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

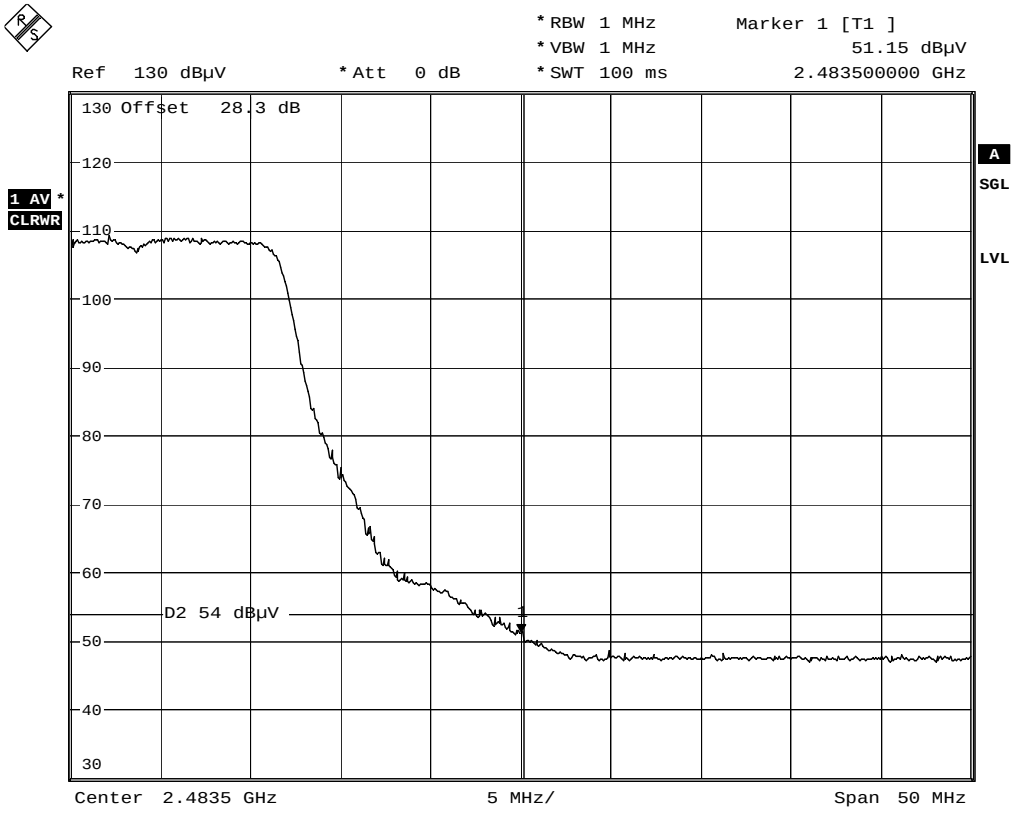
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.50 dBm)
Average Value Measured at 2390 MHz: 50.19 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:42:21

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

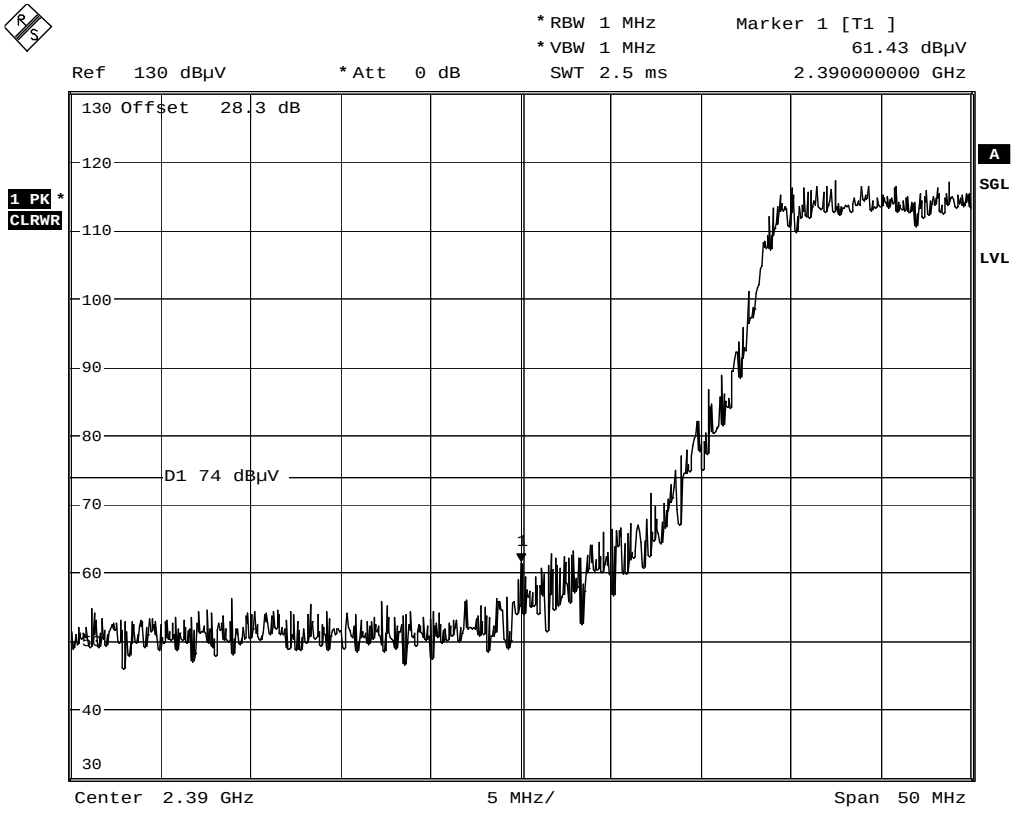
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.16 dBm)
Average Value Measured at 2483.5 MHz: 51.15 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:35:46

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

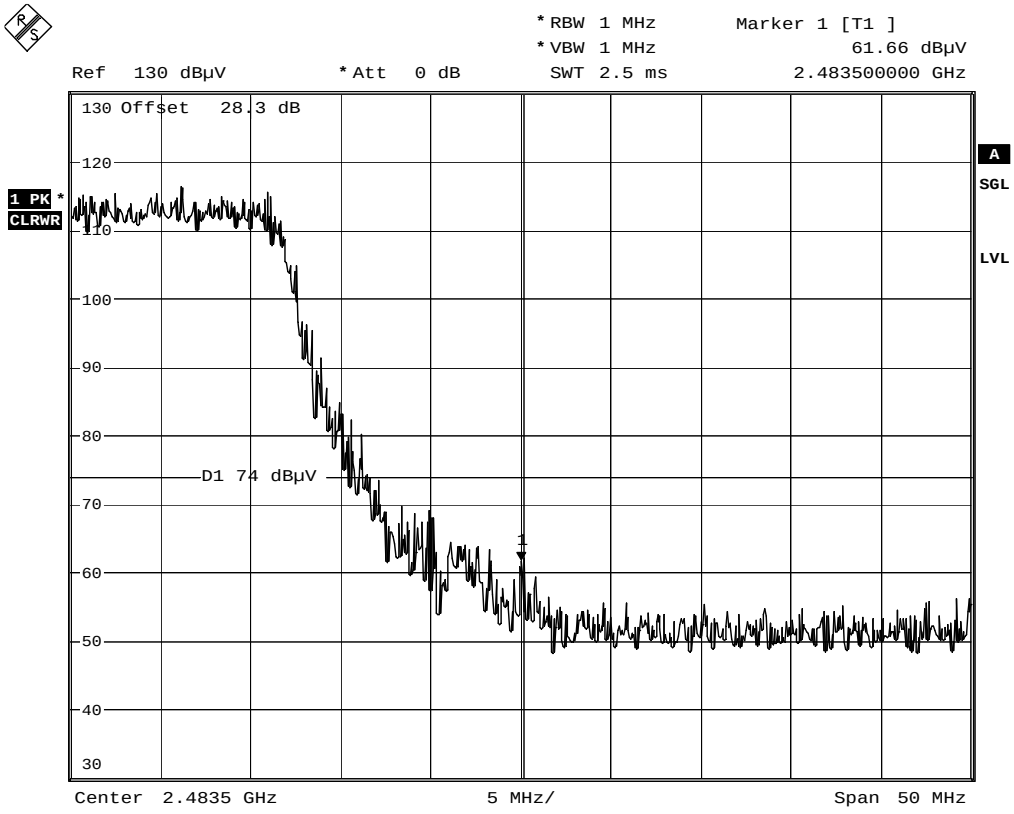
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.50 dBm)
Peak Value Measured at 2390 MHz: 61.43 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:43:59

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

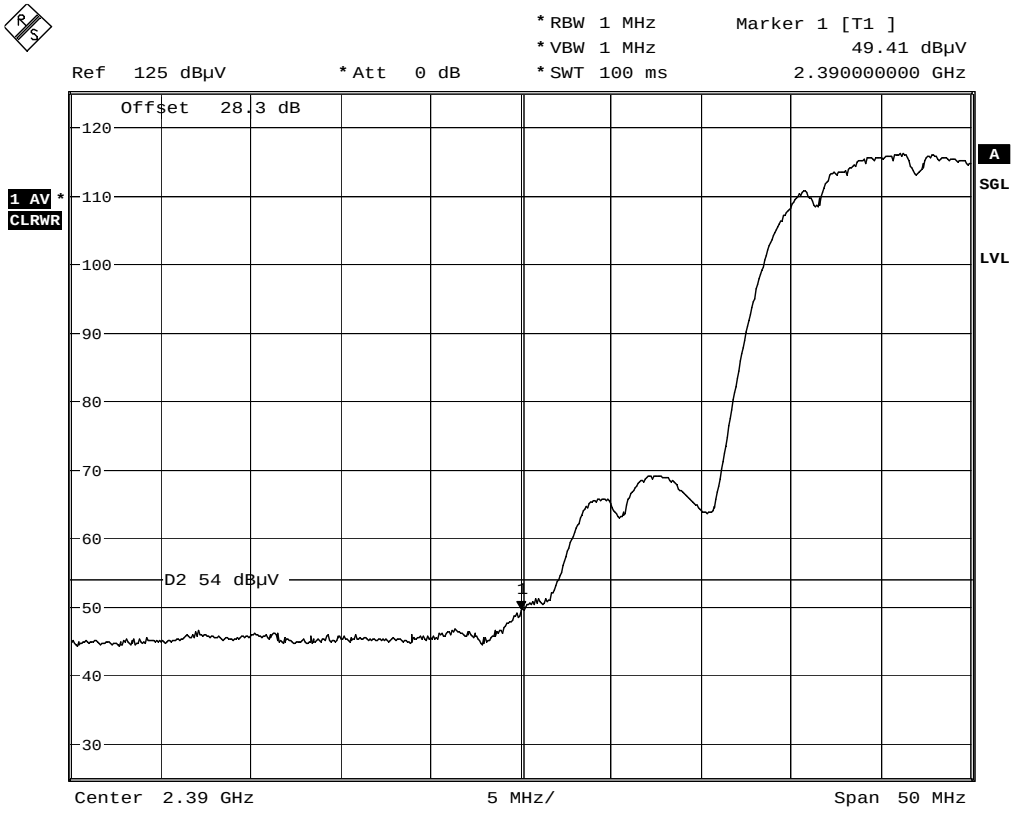
8 dBi Directional Access Antenna, BEL10012-A01
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.16 dBm)
Peak Value Measured at 2483.5 MHz: 61.66 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 23.JUN.2005 08:38:16

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

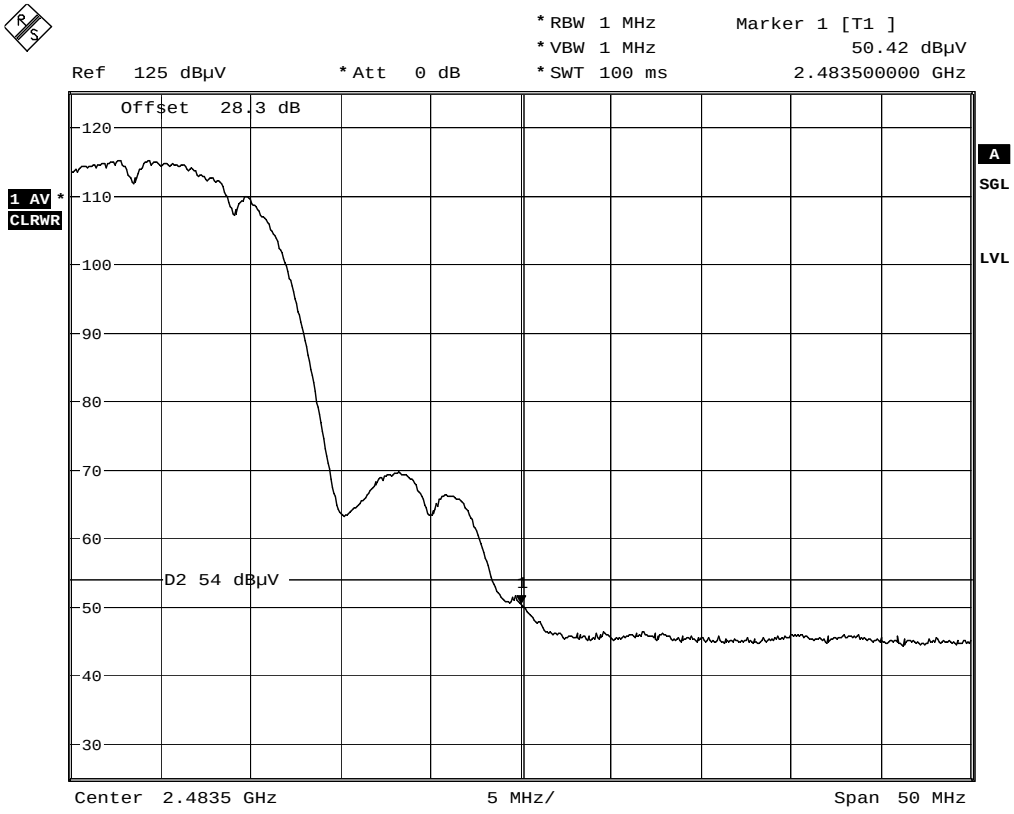
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 1 Mbps, Output Power Level Setting: 99 (24.0 dBm)
Average Value Measured at 2390 MHz: 49.41 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:25:53

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

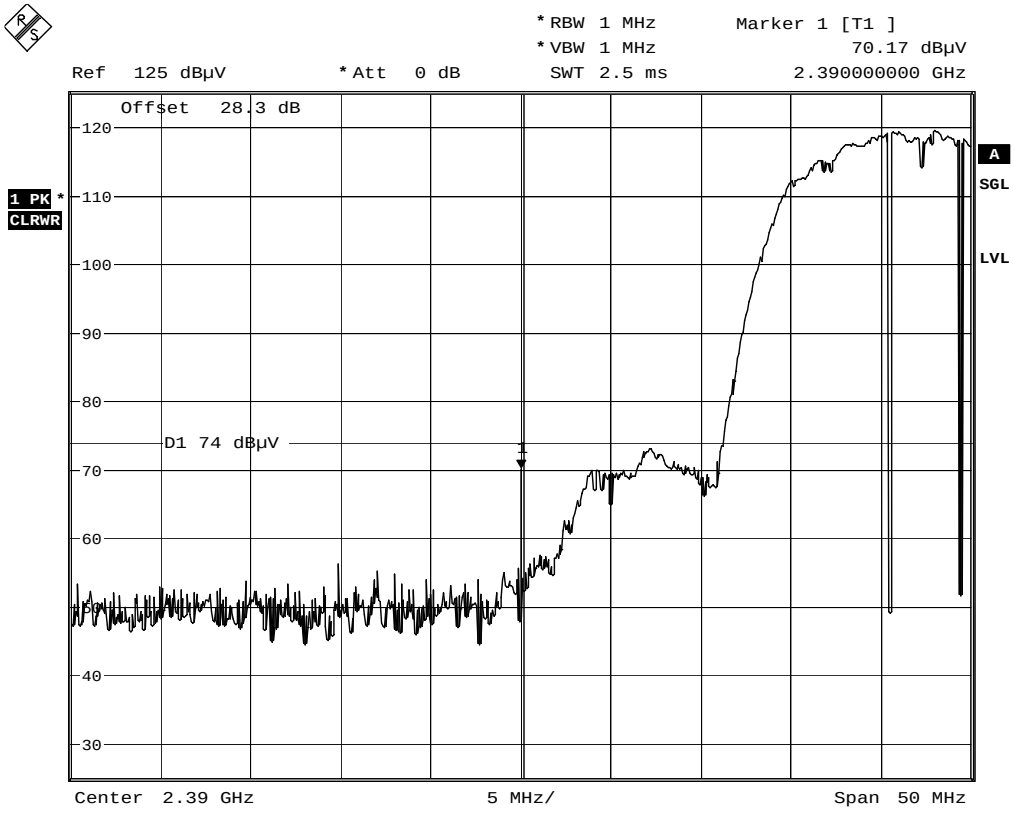
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 1 Mbps, Output Power Level Setting: 99 (24.0 dBm)
Average Value Measured at 2483.5 MHz: 50.42 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:27:51

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

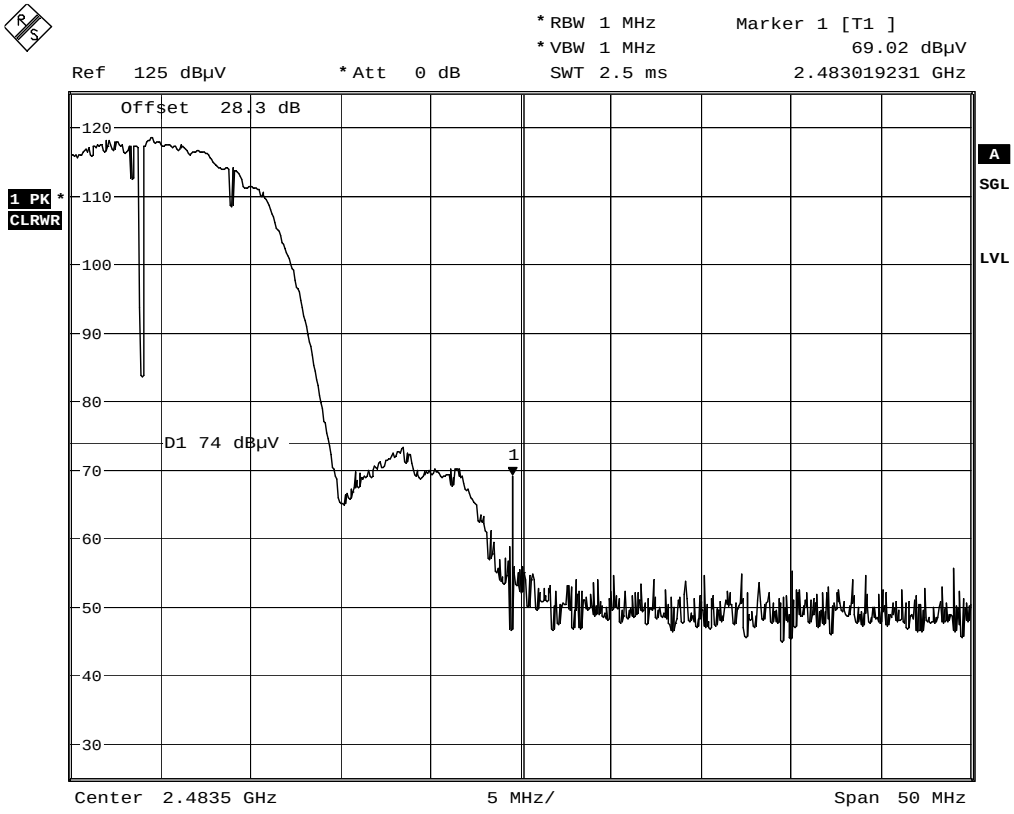
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 1 Mbps, Output Power Level Setting: 99 (24.0 dBm)
Peak Value Measured at 2390 MHz: 70.17 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:21:16

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

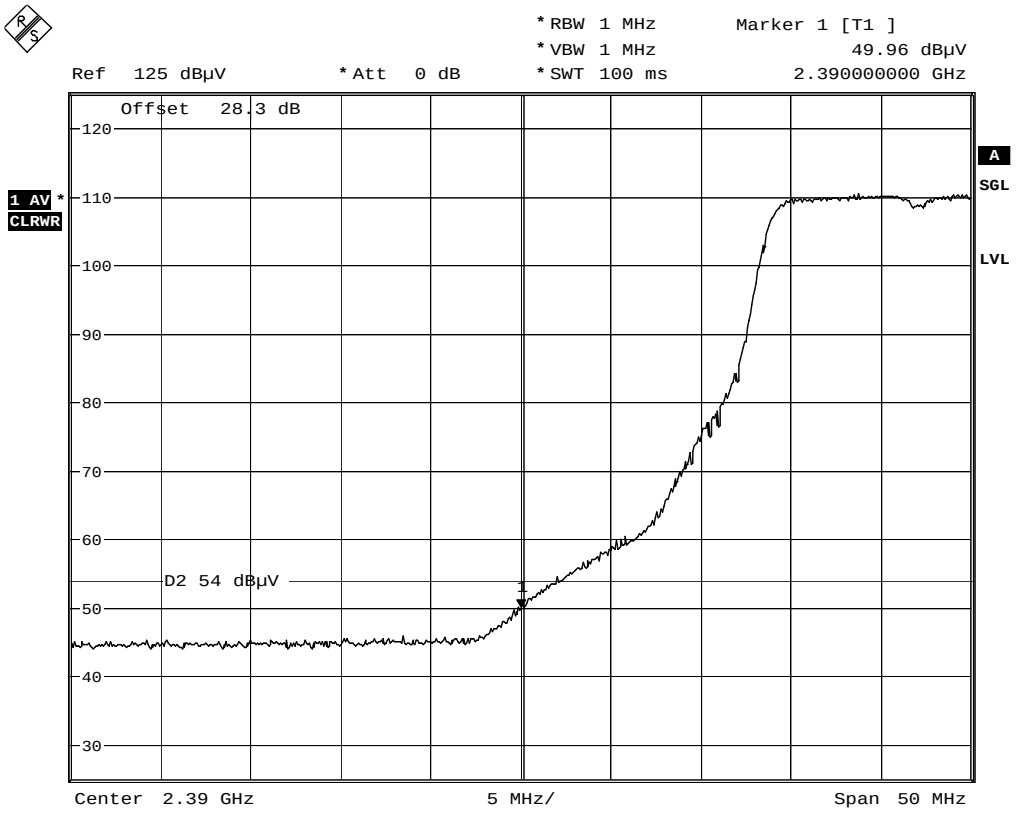
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 1 Mbps, Output Power Level Setting: 99 (24.0 dBm)
Peak Value Measured at 2483.5 MHz: 69.02 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:31:44

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

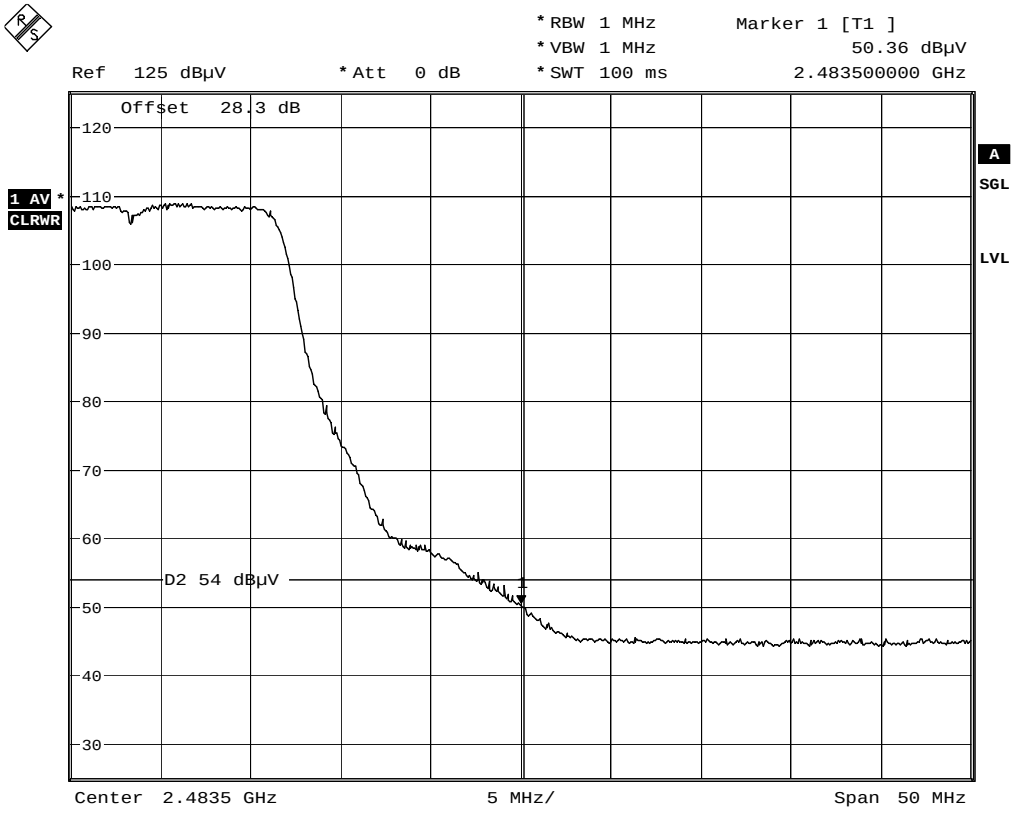
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Average Value Measured at 2390 MHz: 49.96 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:05:44

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

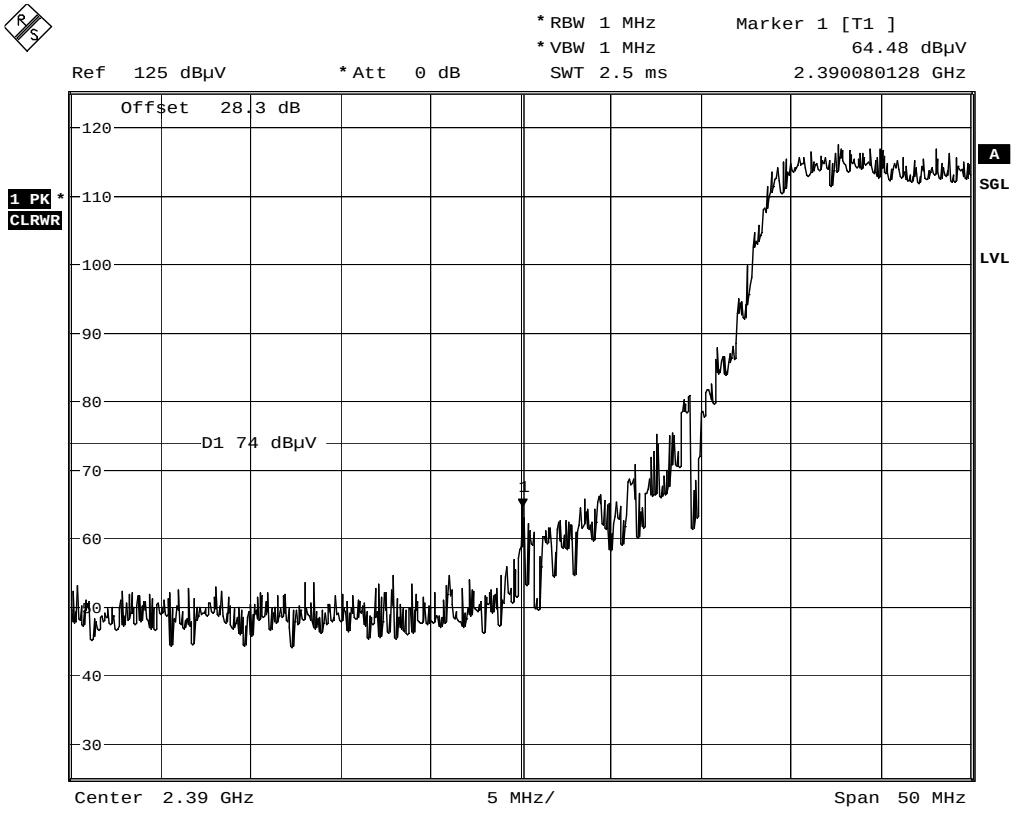
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.27 dBm)
Average Value Measured at 2483.5 MHz: 50.36 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:09:42

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

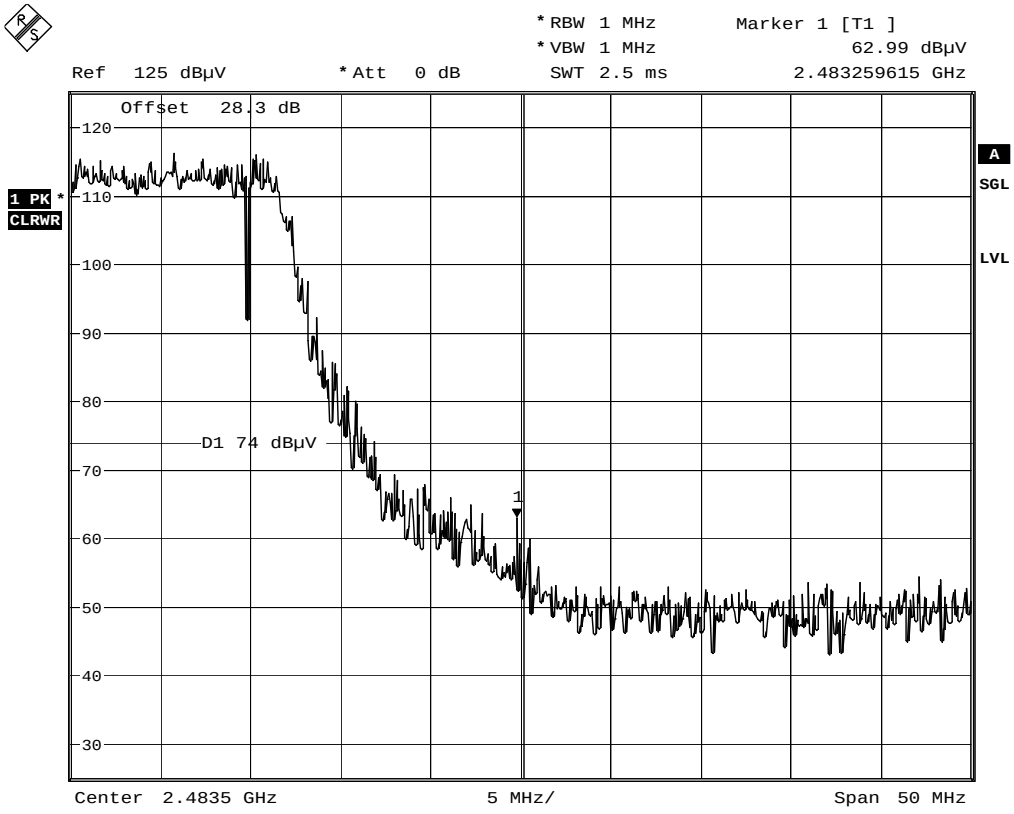
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Peak Value Measured at 2390 MHz: 64.48 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:14:49

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

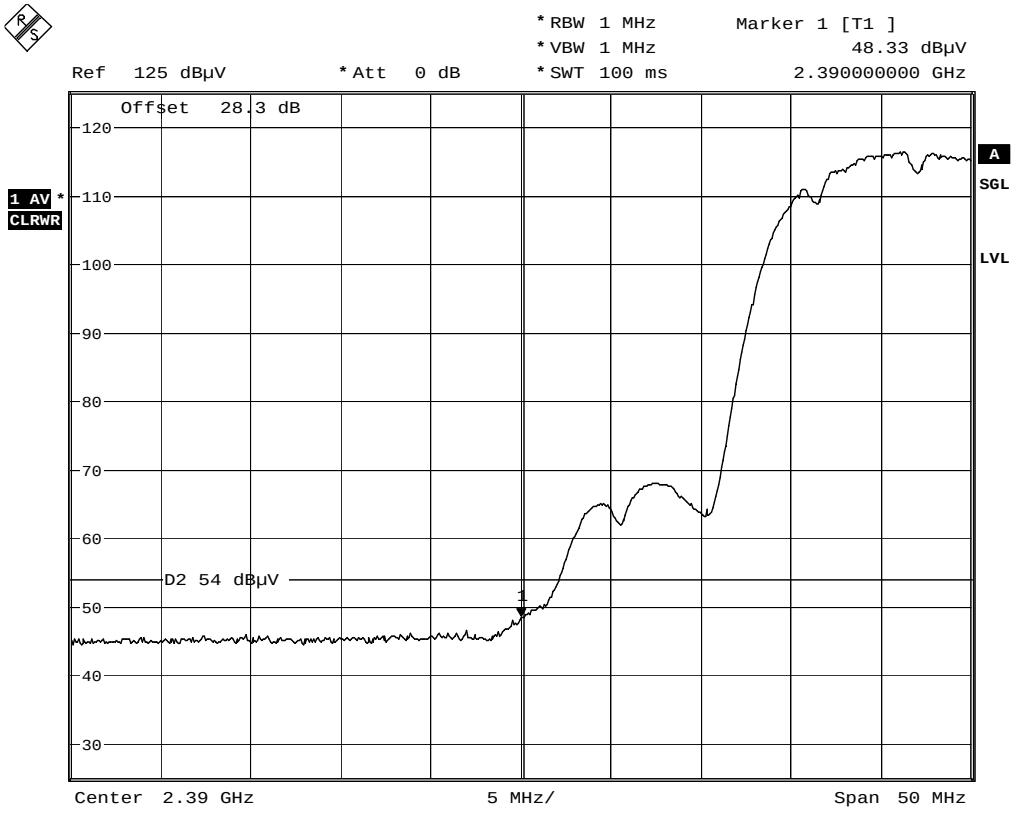
12 dBi Omni-directional Access Antenna, MFB24012 DT2
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.27 dBm)
Peak Value Measured at 2483.5 MHz: 62.99 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:11:15

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

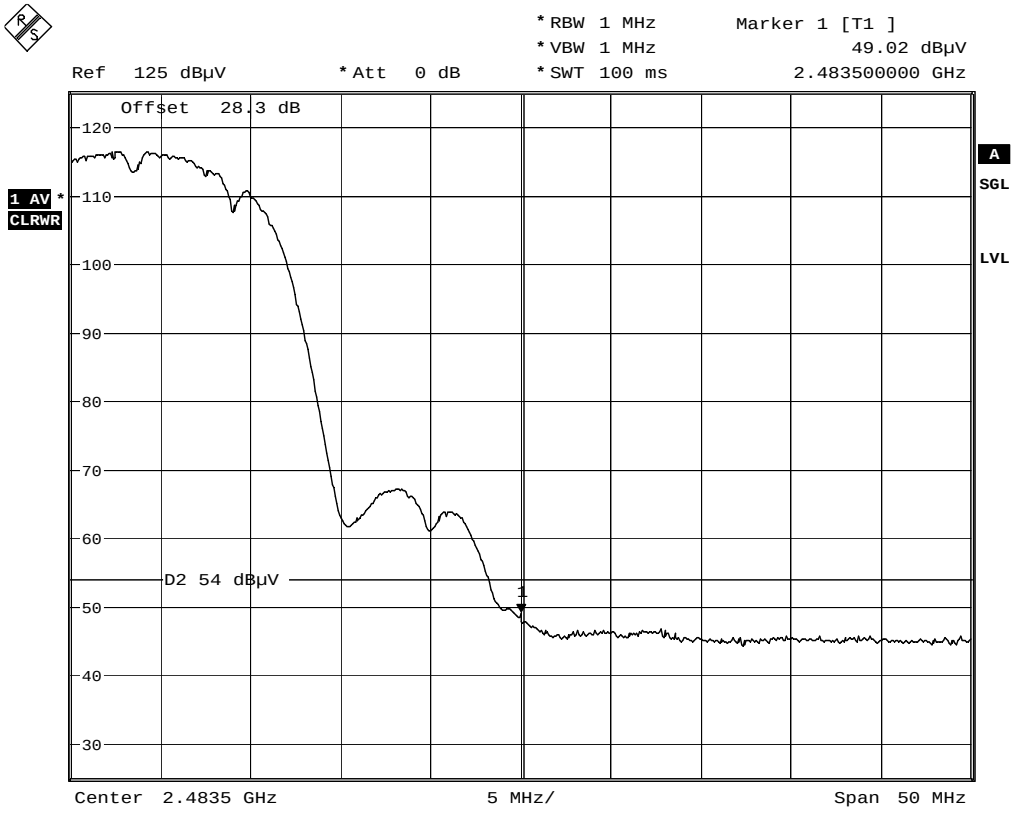
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.78 dBm)
Average Value Measured at 2390 MHz: 48.33 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 19:12:54

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

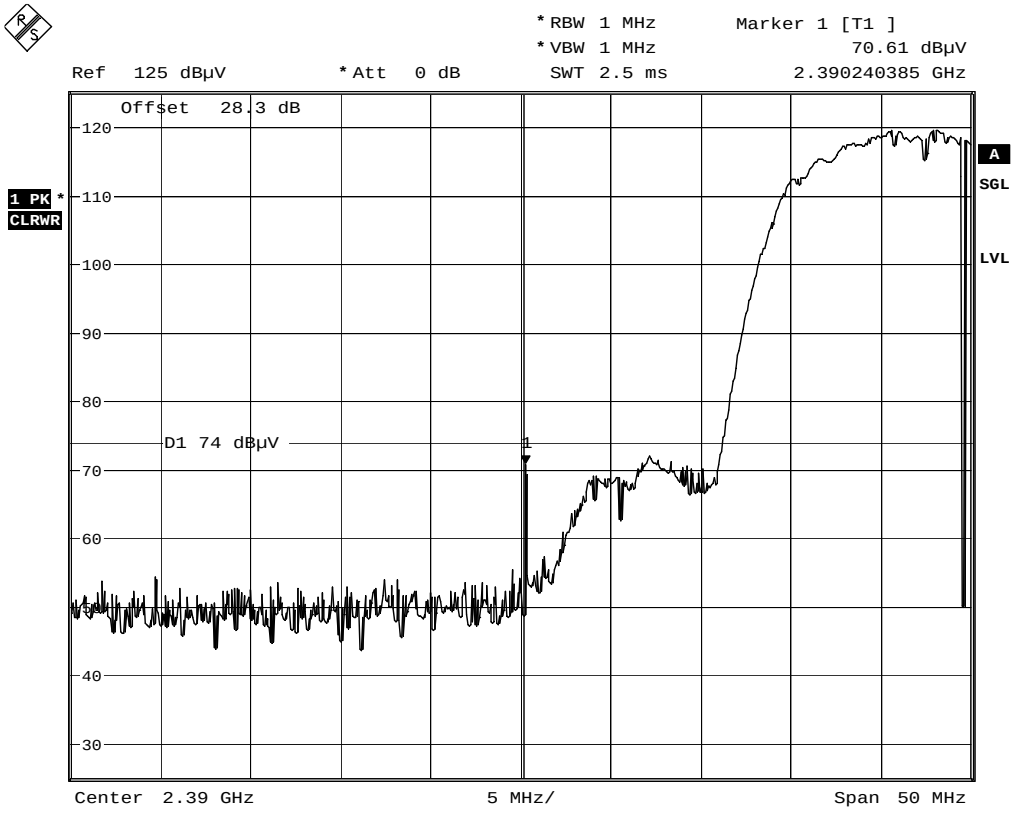
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 1 Mbps, Output Power Level Setting: 100 (24.30 dBm)
Average Value Measured at 2483.5 MHz: 49.02 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 19:00:32

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

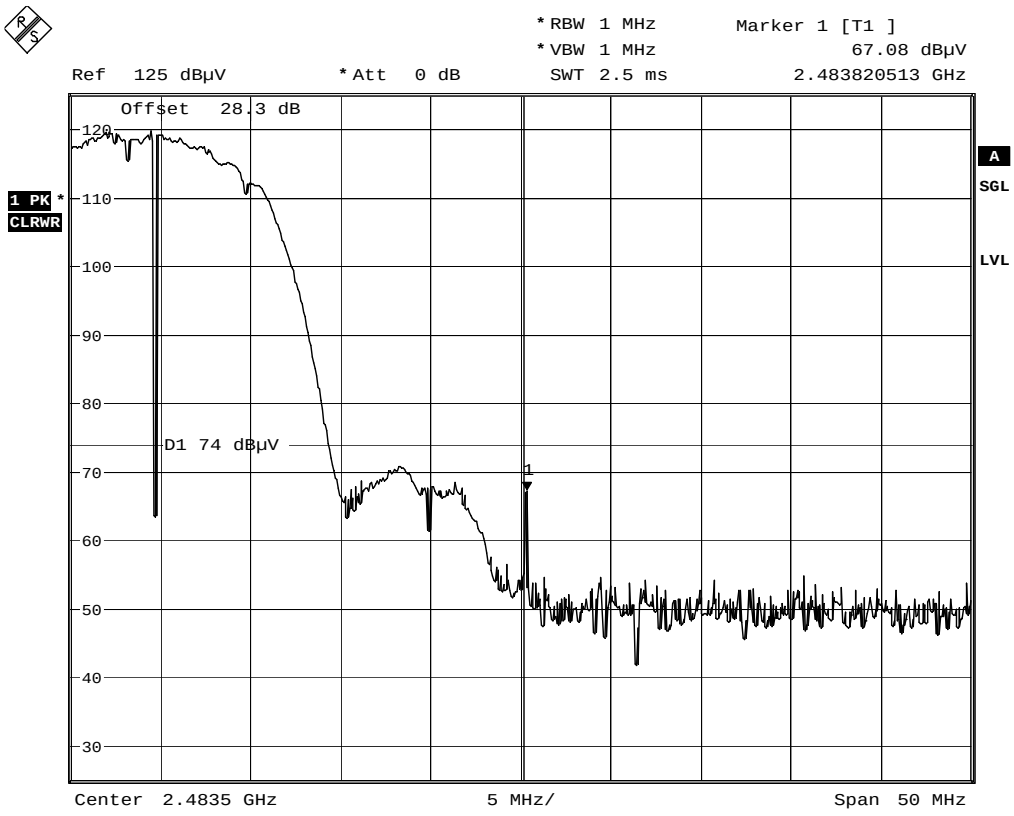
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.78 dBm)
Peak Value Measured at 2390 MHz: 70.61 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 19:09:55

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

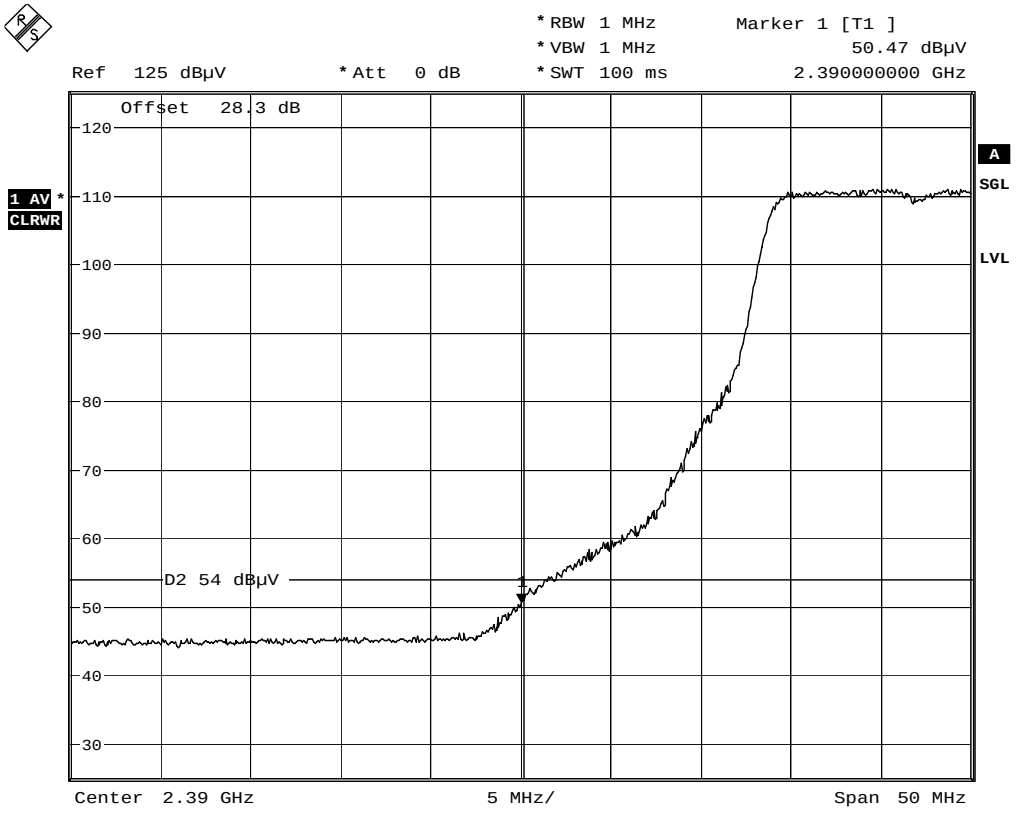
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 1 Mbps, Output Power Level Setting: 100 (24.30 dBm)
Peak Value Measured at 2483.5 MHz: 67.08 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 19:03:26

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

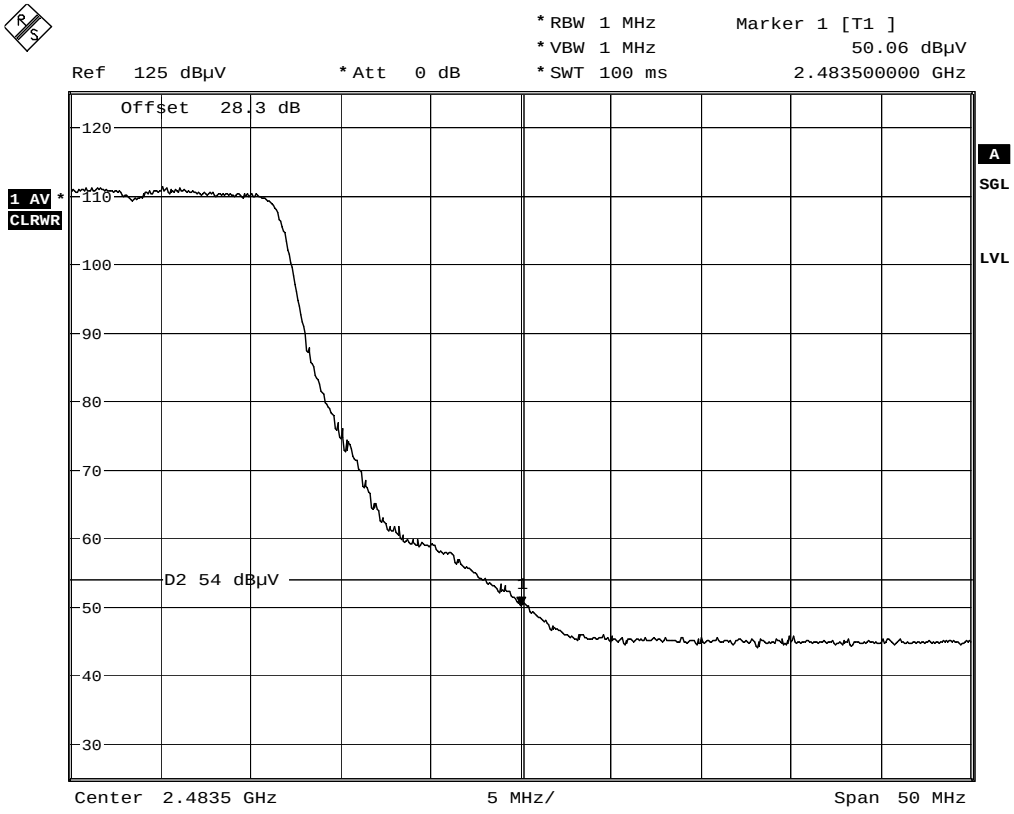
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Average Value Measured at 2390 MHz: 50.47 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 19:19:48

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

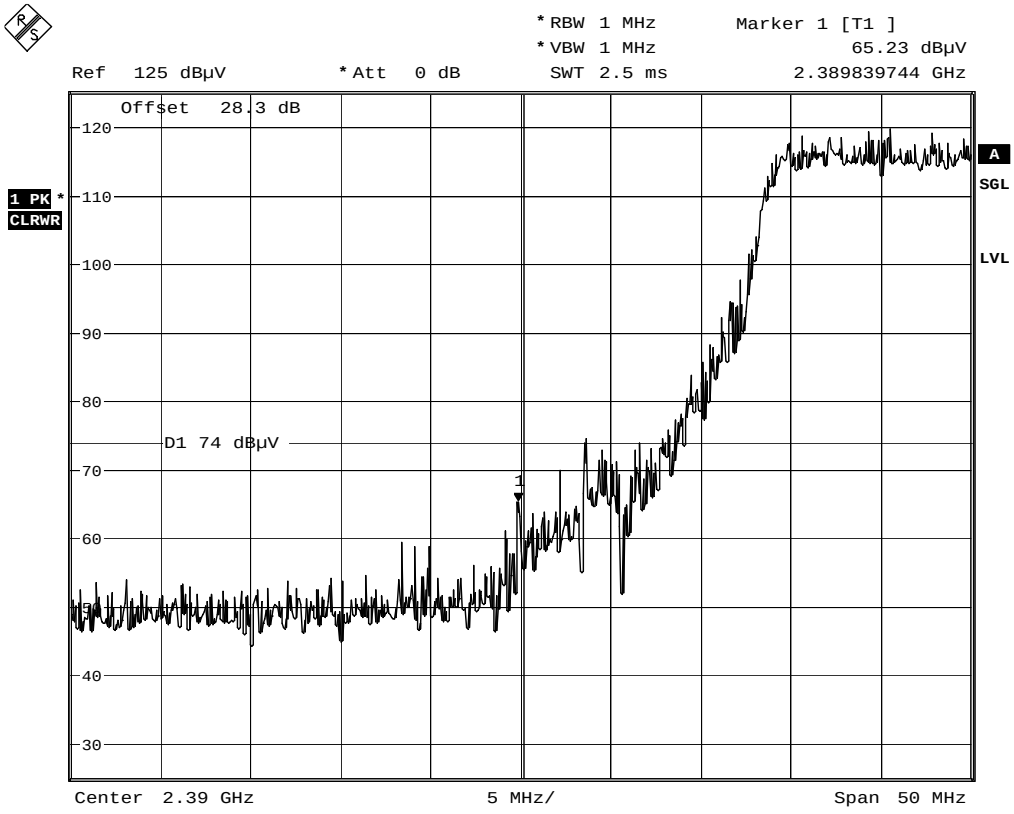
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 6 Mbps, Output Power Level Setting: 100 (21.62 dBm)
Average Value Measured at 2483.5 MHz: 50.06 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 18:58:12

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

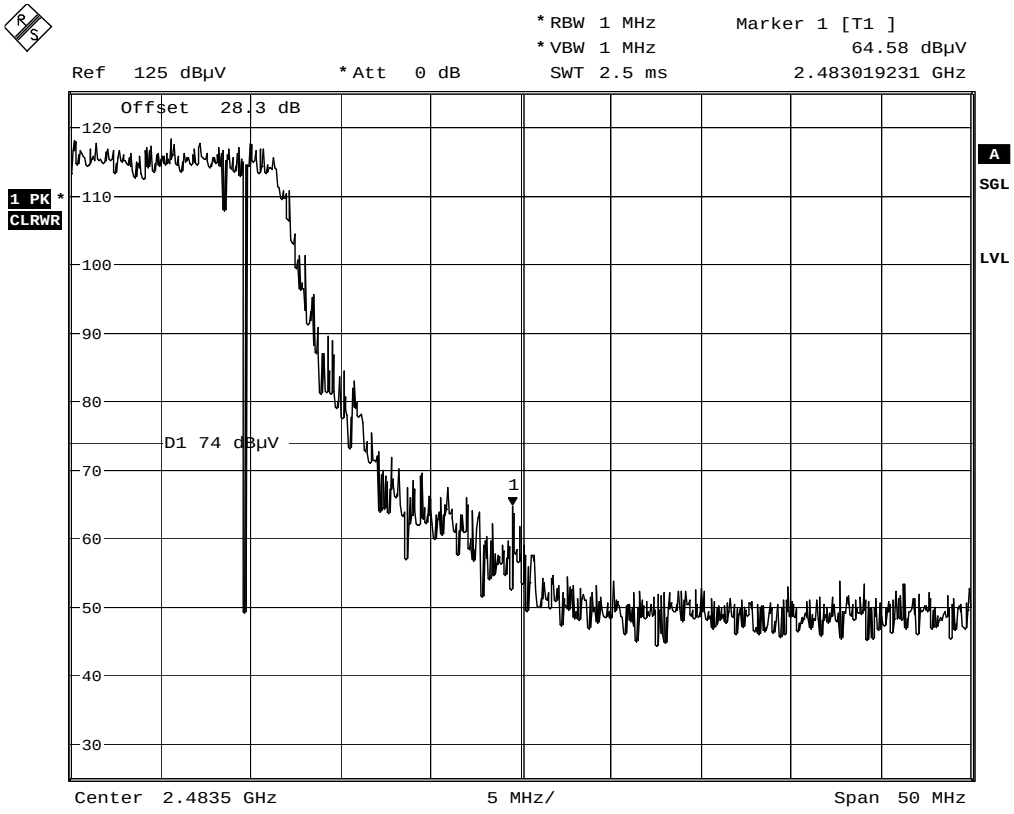
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Peak Value Measured at 2390 MHz: 65.23 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 19:08:04

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

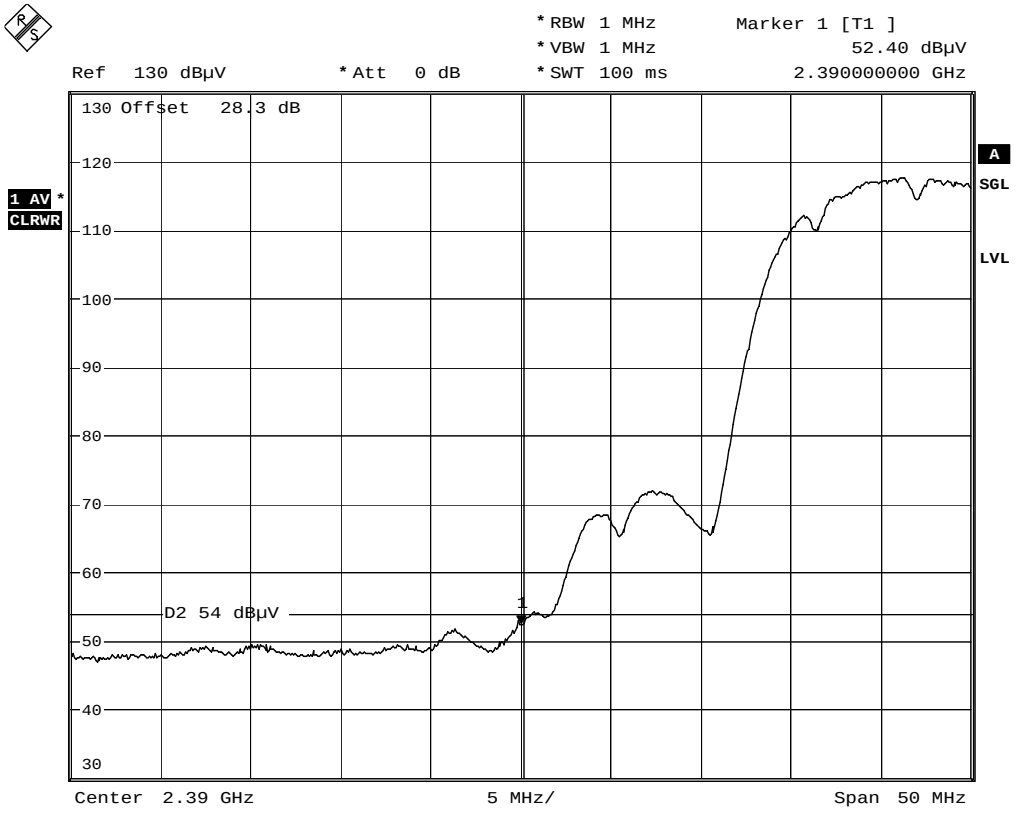
10 dBi Omni-directional Access Antenna, MFB24010
Data Rate: 6 Mbps, Output Power Level Setting: 100 (21.62 dBm)
Peak Value Measured at 2483.5 MHz: 64.58 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 19:05:56

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

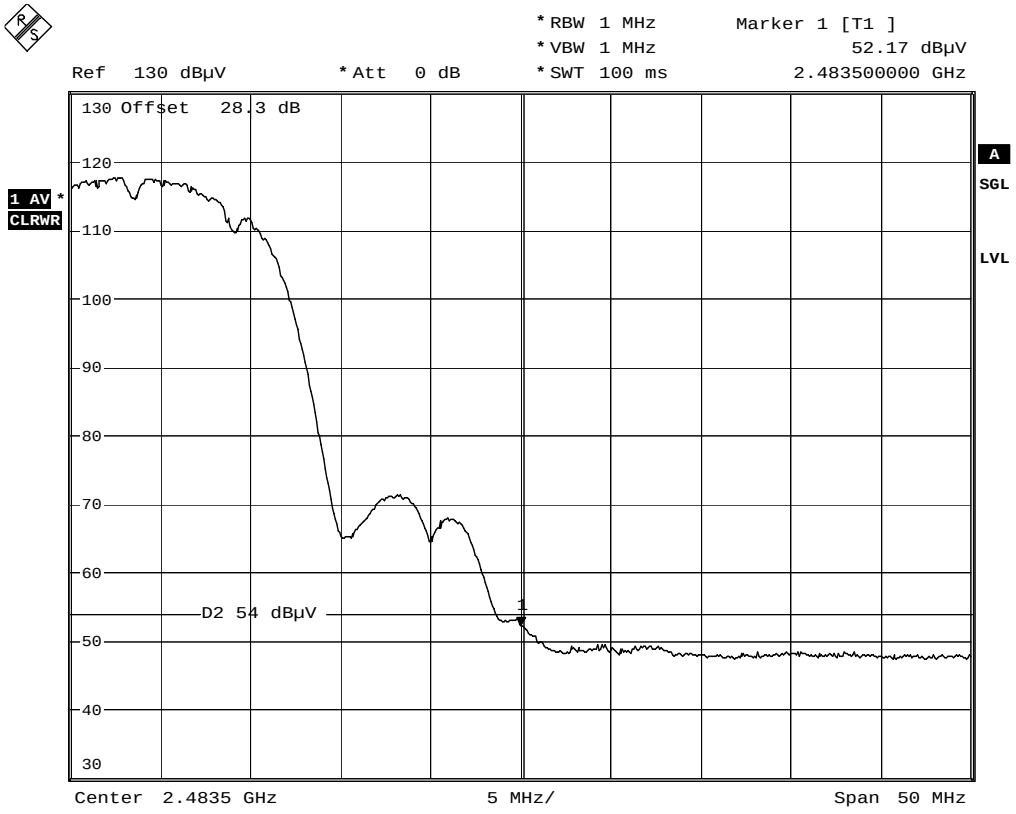
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 1 Mbps, Output Power Level Setting: 108 (25.04 dBm)
Average Value Measured at 2390 MHz: 52.40 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 18:51:39

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

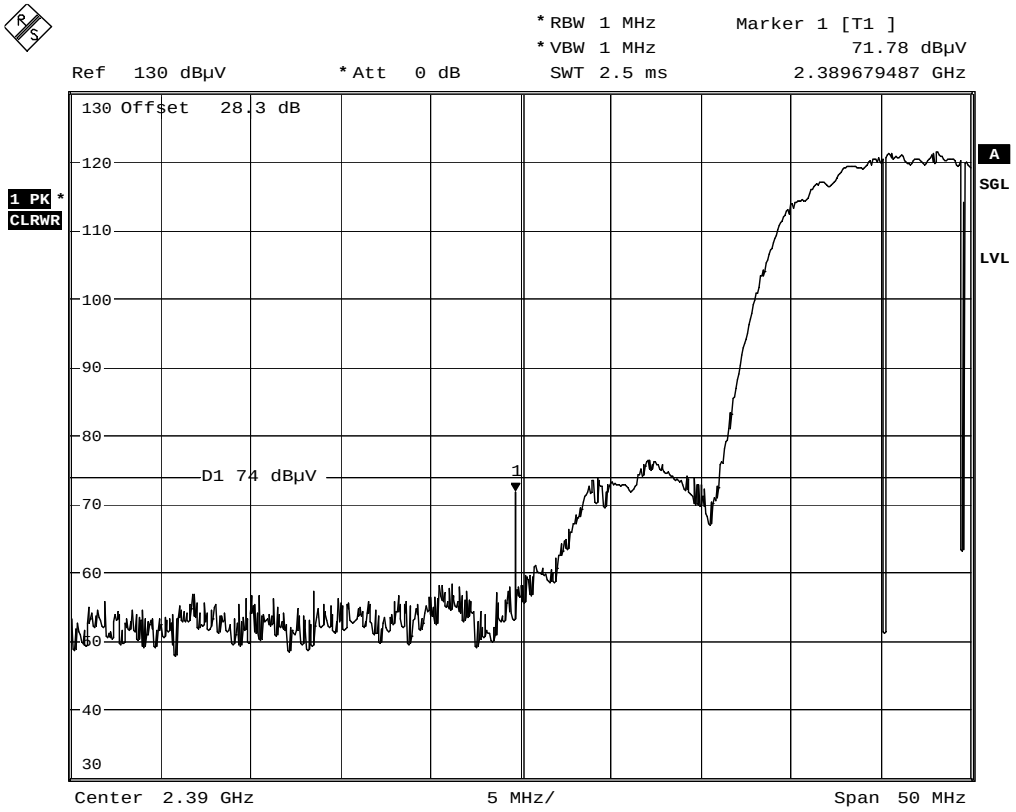
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.94 dBm)
Average Value Measured at 2483.5 MHz: 52.17 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 18:36:54

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

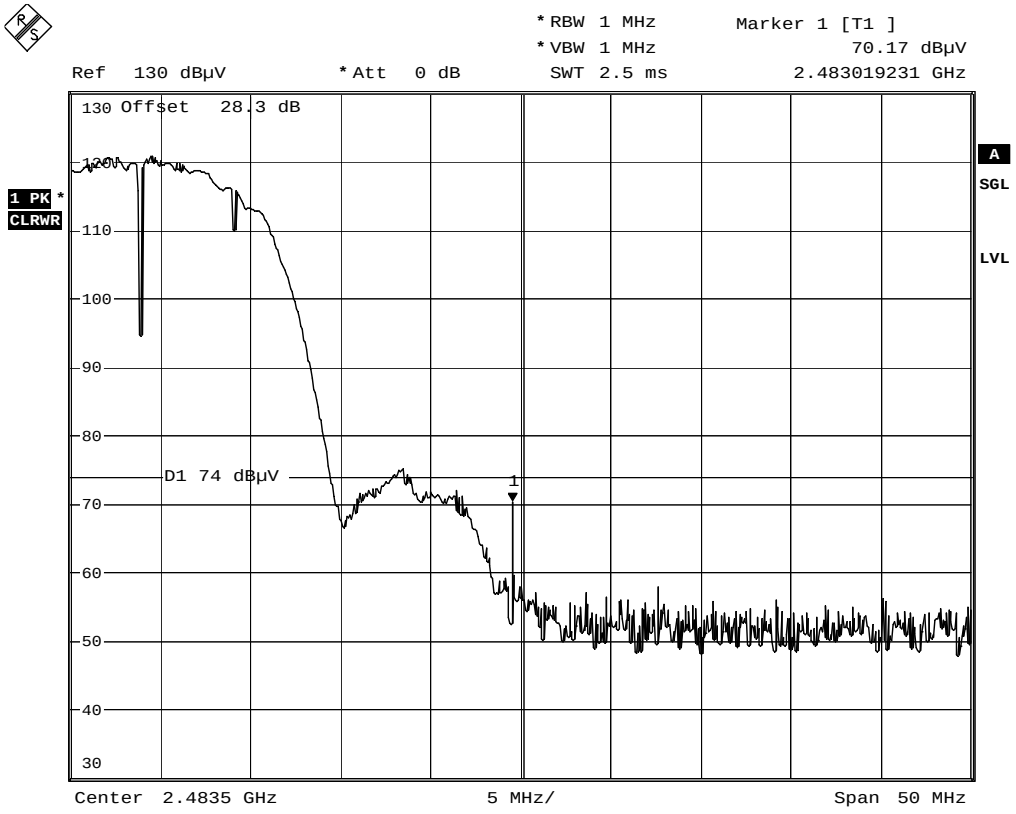
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 1 Mbps, Output Power Level Setting: 108 (25.04 dBm)
Peak Value Measured at 2390 MHz: 71.78 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 18:54:48

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

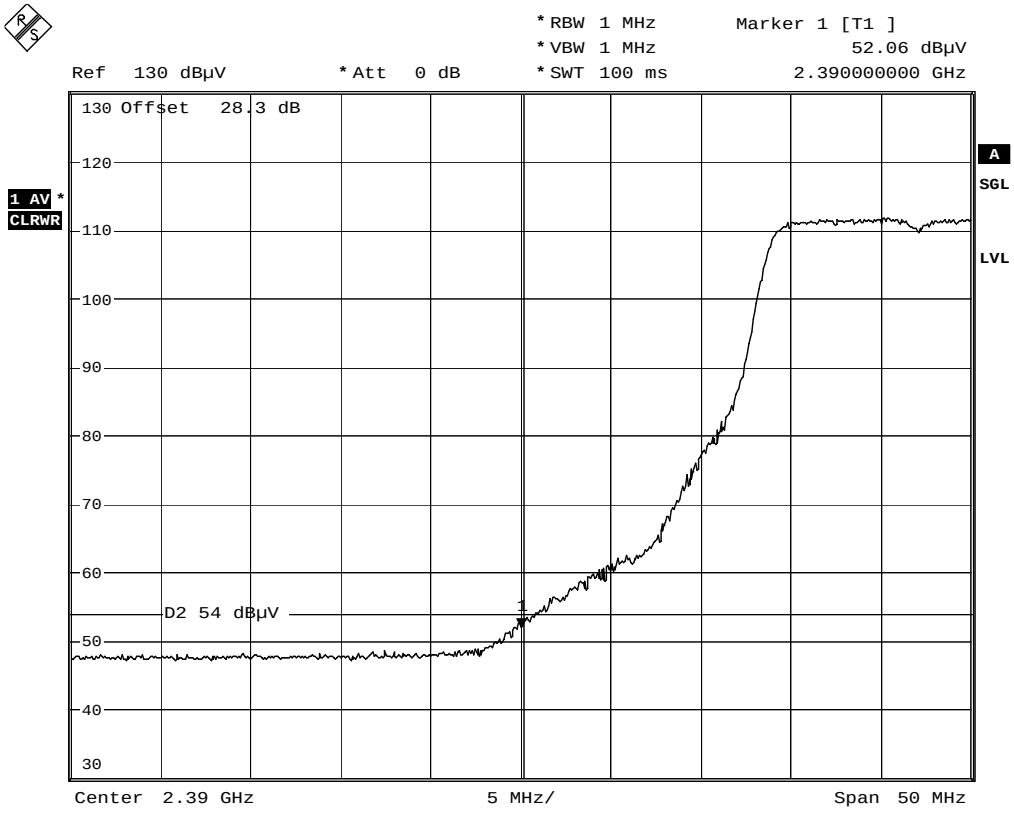
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 1 Mbps, Output Power Level Setting: 102 (24.94 dBm)
Peak Value Measured at 2483.5 MHz: 70.17 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 18:39:07

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

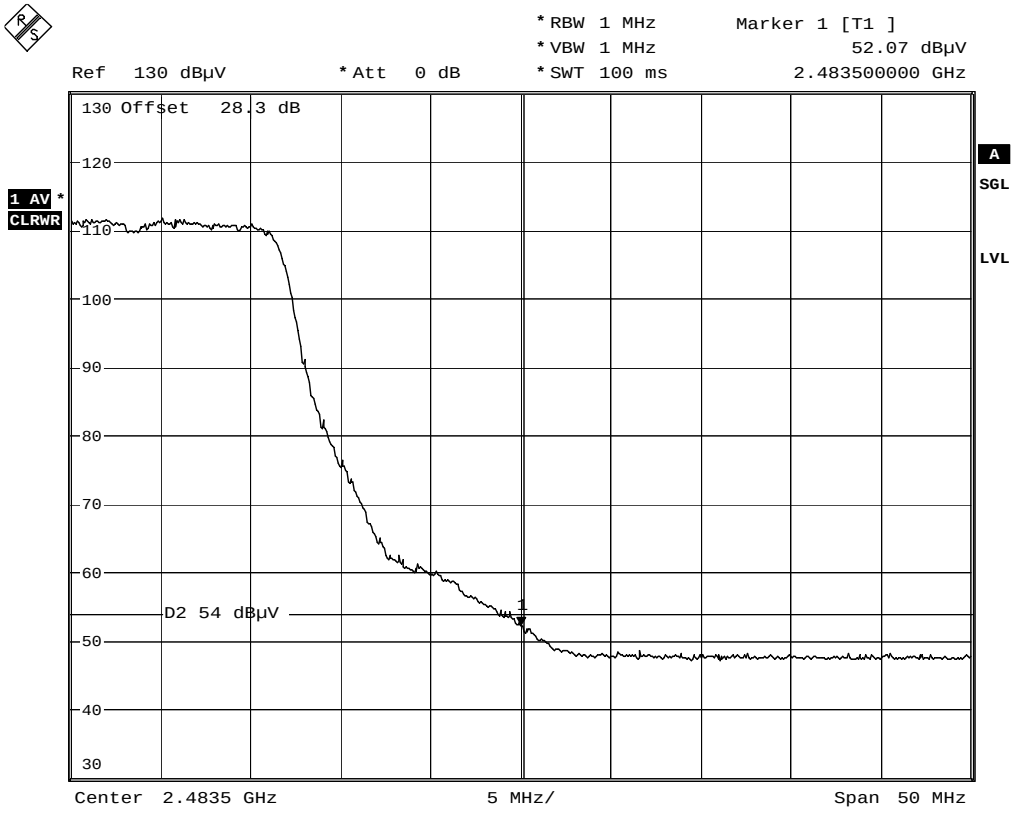
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Average Value Measured at 2390 MHz: 52.06 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:03:54

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

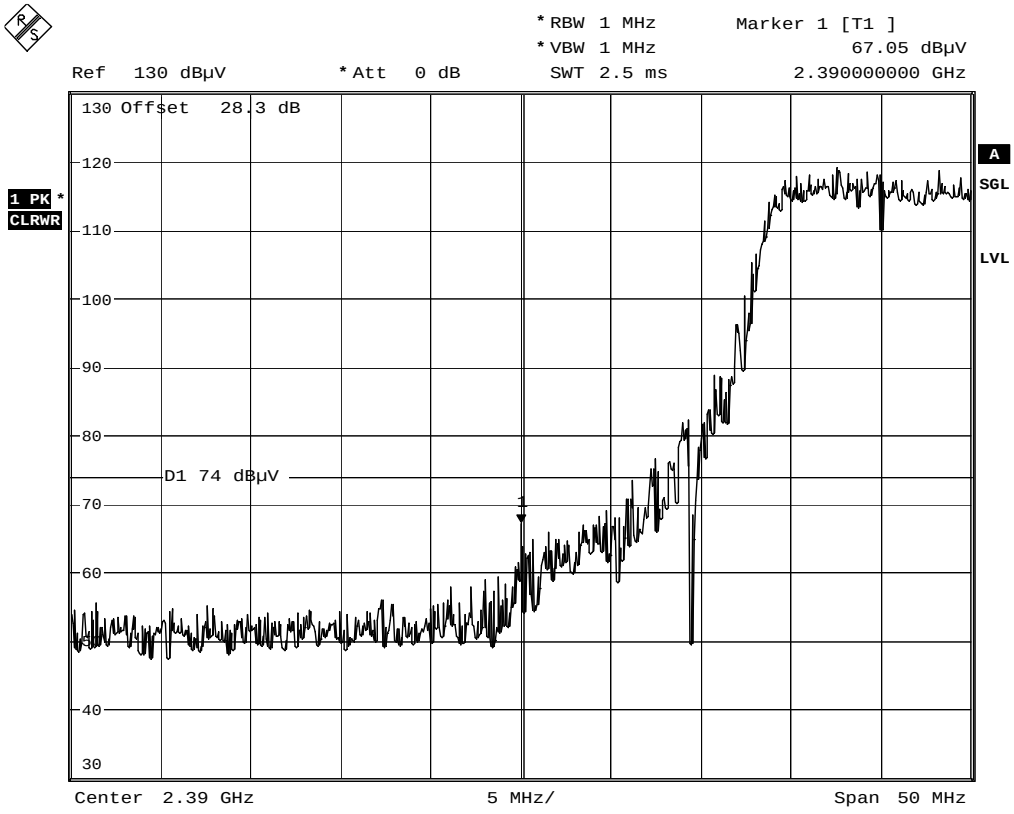
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.27 dBm)
Average Value Measured at 2483.5 MHz: 52.07 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:08:42

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

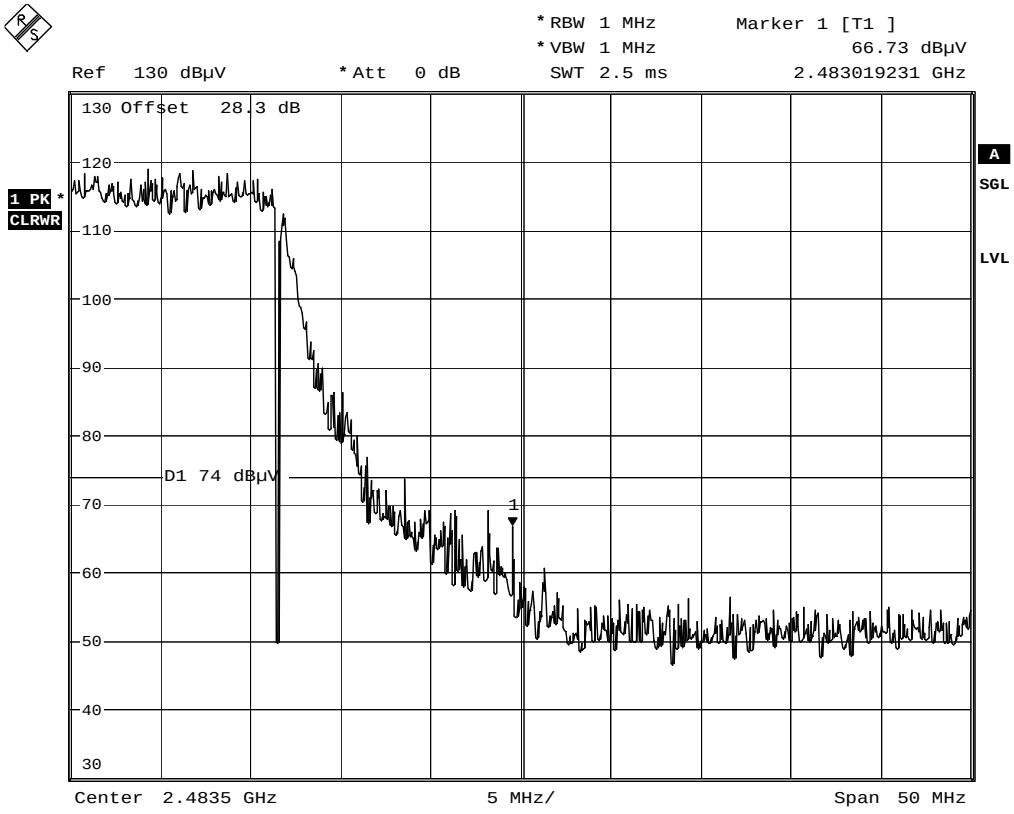
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Peak Value Measured at 2390 MHz: 67.05 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:05:42

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

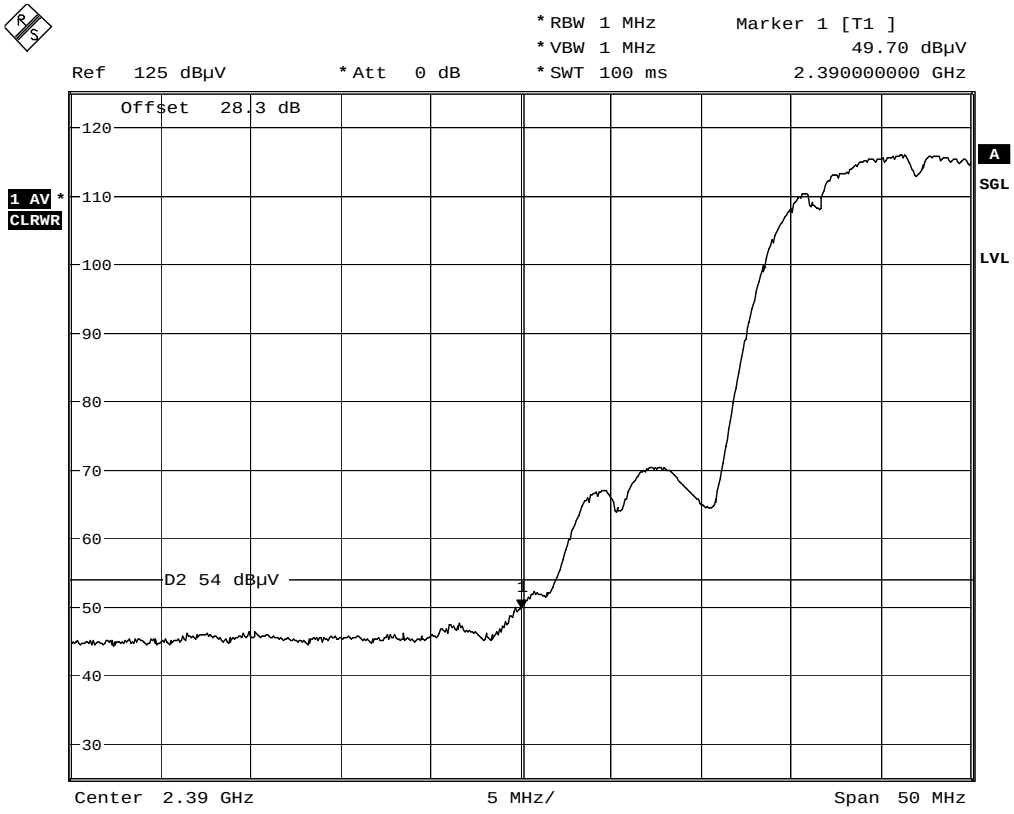
8 dBi Omni-directional Access Antenna, MFB24008
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.27 dBm)
Peak Value Measured at 2483.5 MHz: 66.73 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:11:09

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

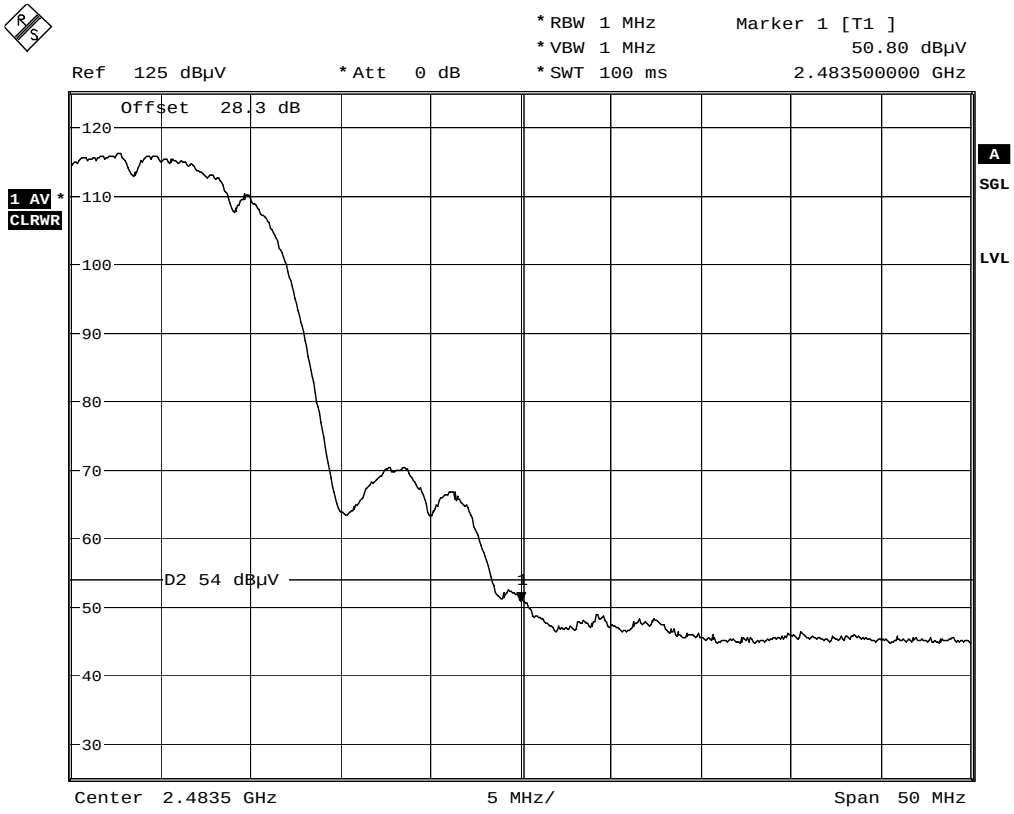
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.55 dBm)
Average Value Measured at 2390 MHz: 49.70 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 20:57:03

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

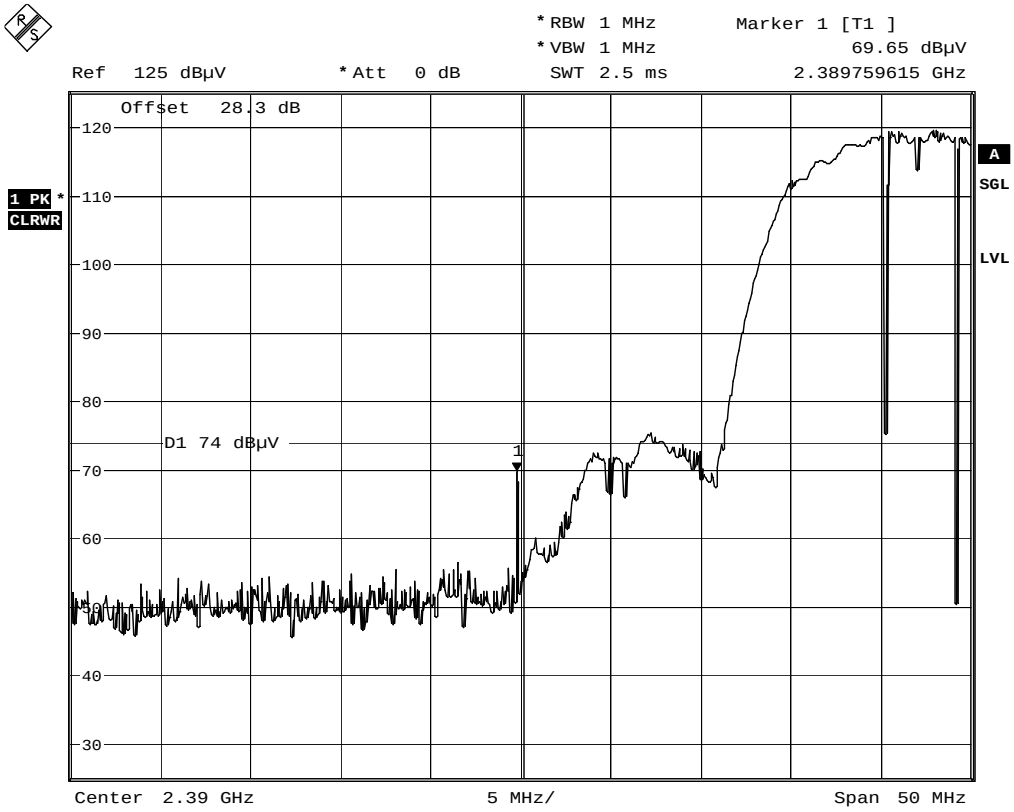
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.35 dBm)
Average Value Measured at 2483.5 MHz: 50.80 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 21:03:34

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

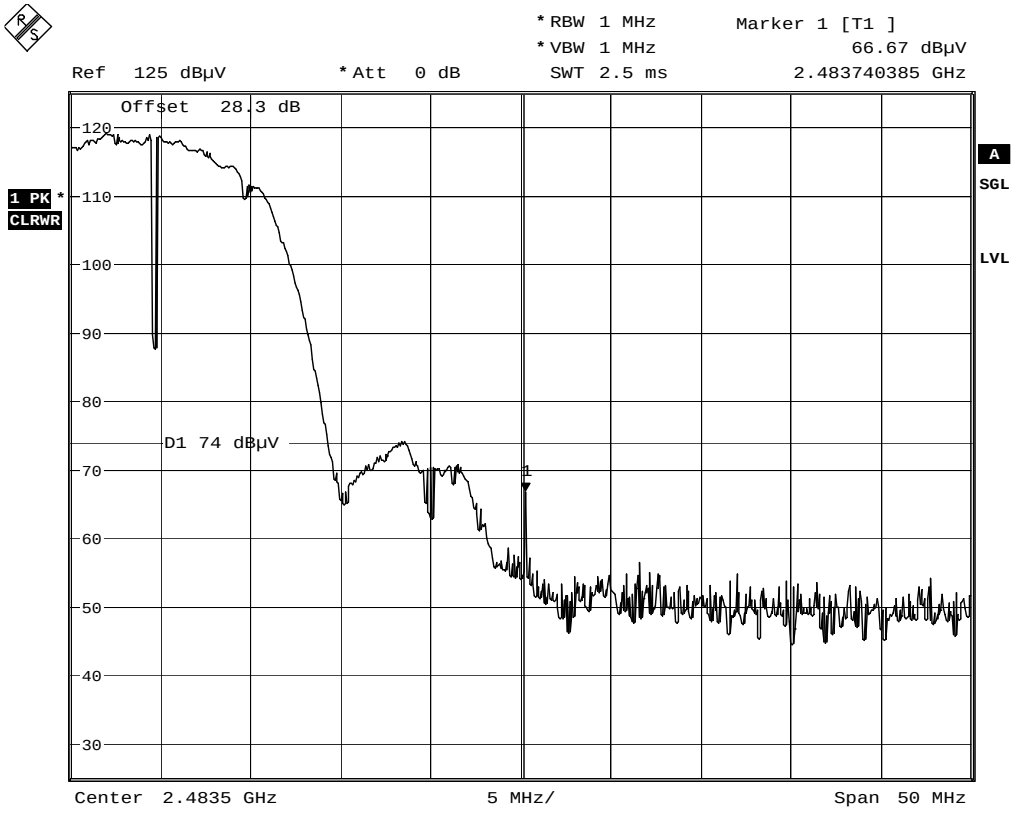
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.55 dBm)
Peak Value Measured at 2390 MHz: 69.65 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 21:17:33

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

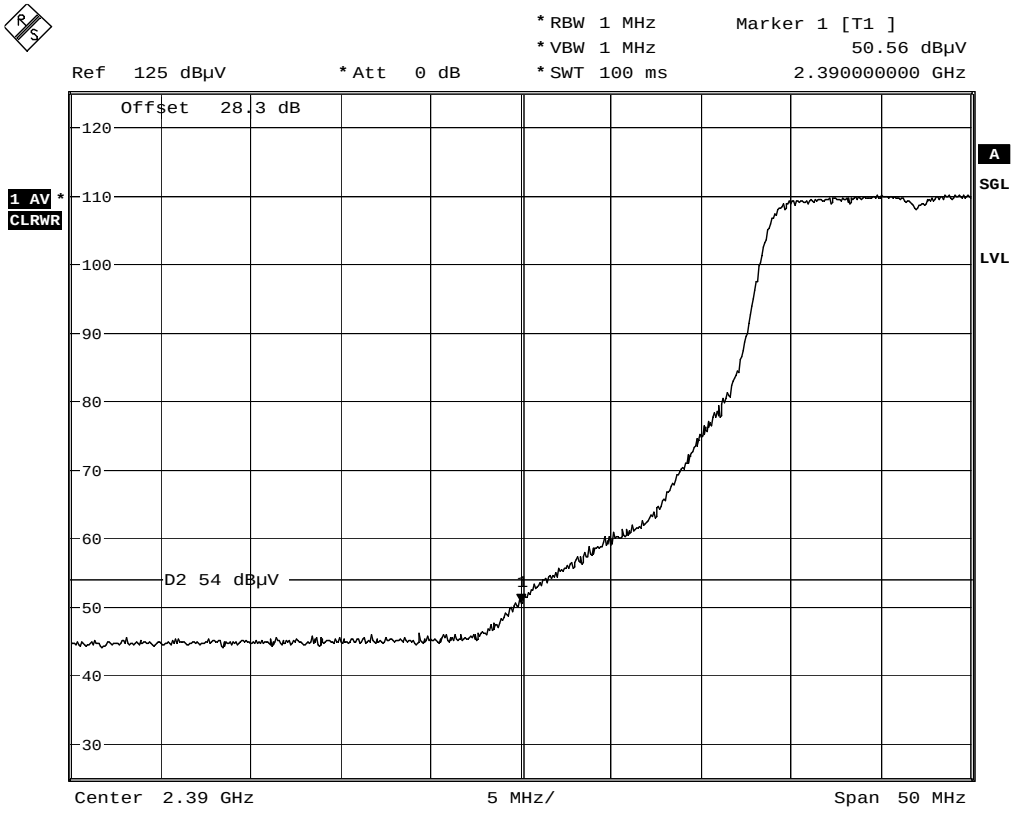
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 1 Mbps, Output Power Level Setting: 120 (25.35 dBm)
Peak Value Measured at 2483.5 MHz: 66.67 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 21:15:04

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

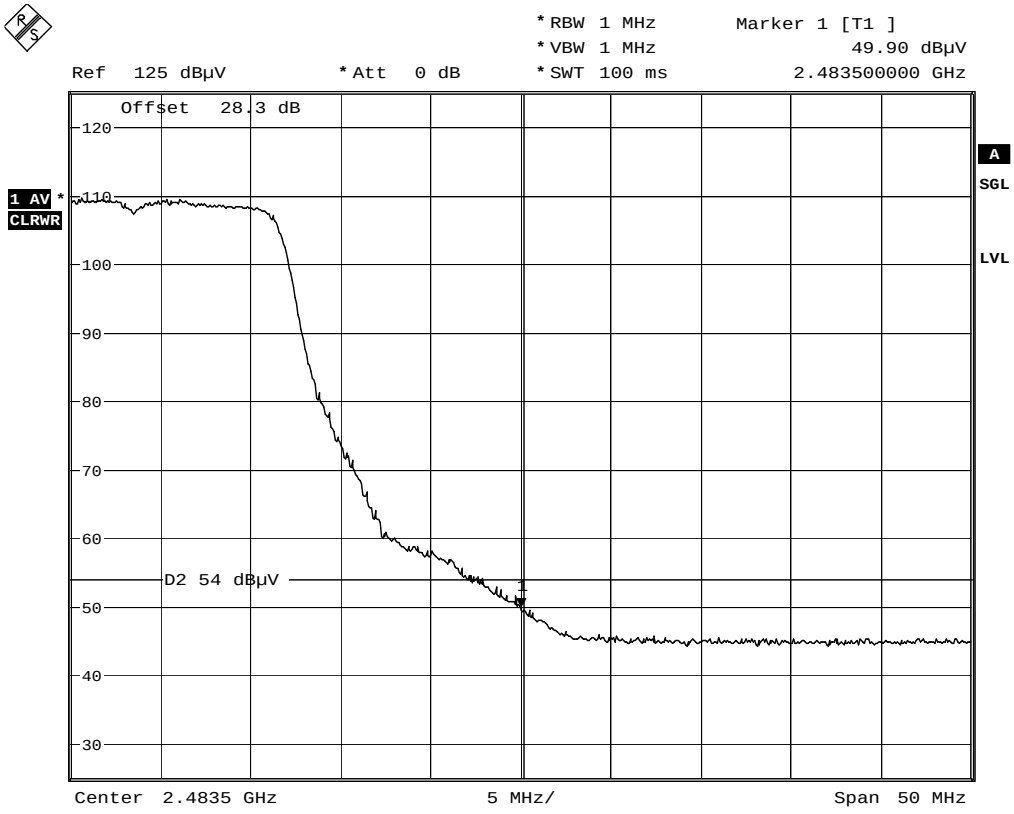
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.50 dBm)
Average Value Measured at 2390 MHz: 50.56 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 20:52:59

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

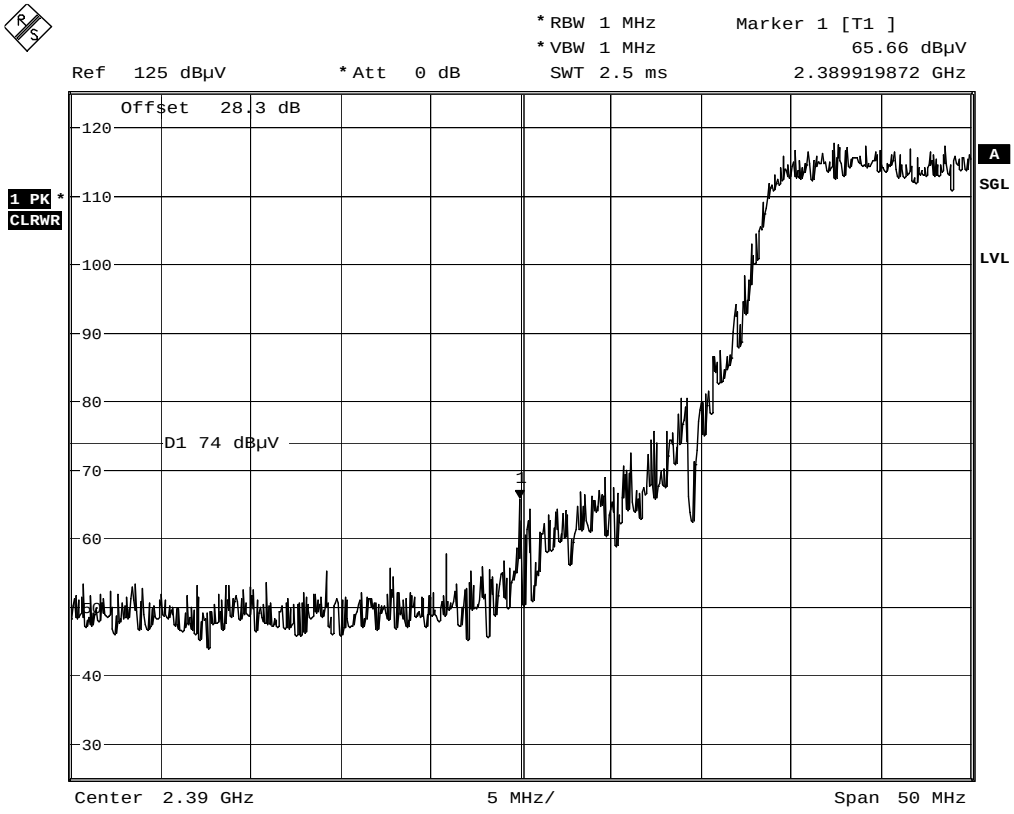
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.16 dBm)
Average Value Measured at 2483.5 MHz: 49.90 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 21:05:43

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

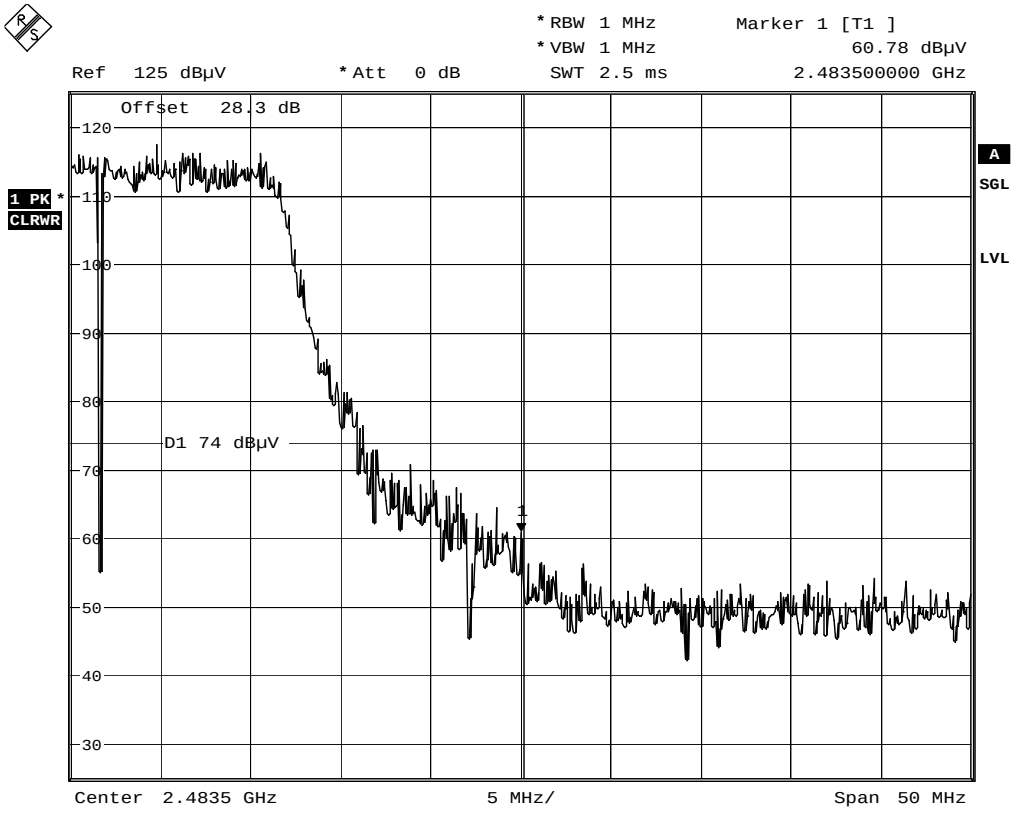
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.50 dBm)
Peak Value Measured at 2390 MHz: 65.66 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 21:19:34

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

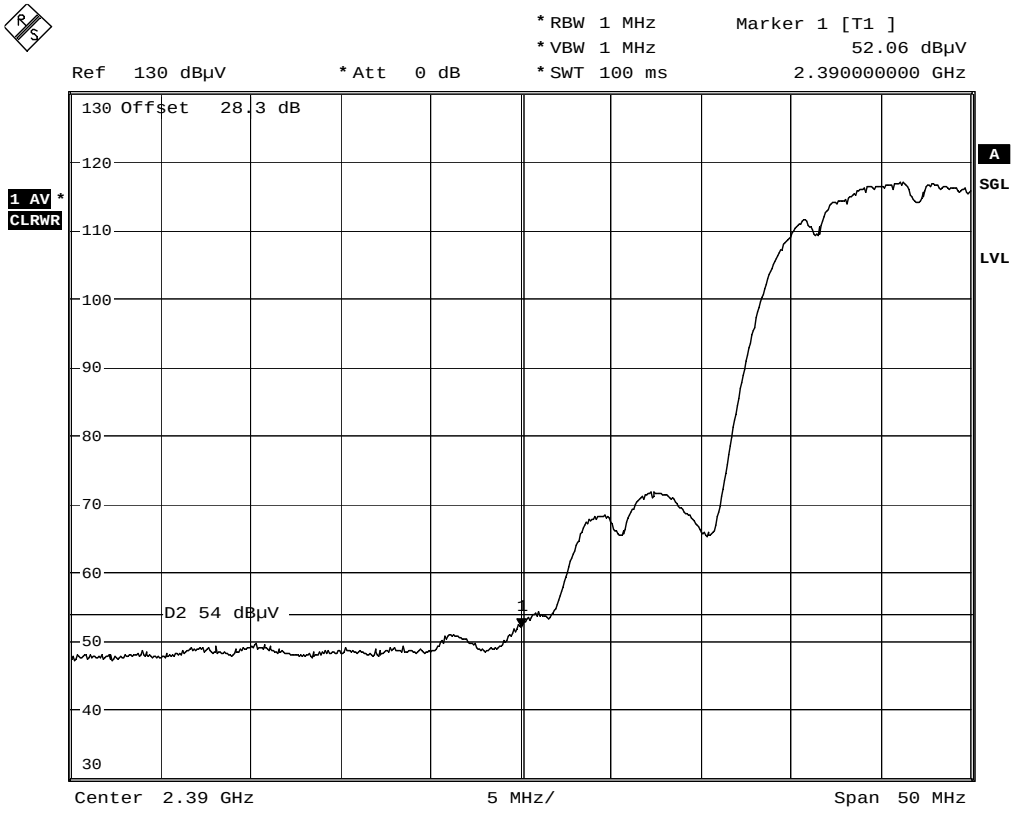
6 dBi Omni-directional Access Antenna, MFB24006
Data Rate: 6 Mbps, Output Power Level Setting: 120 (22.16 dBm)
Peak Value Measured at 2483.5 MHz: 60.78 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 19.JUN.2005 21:13:12

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

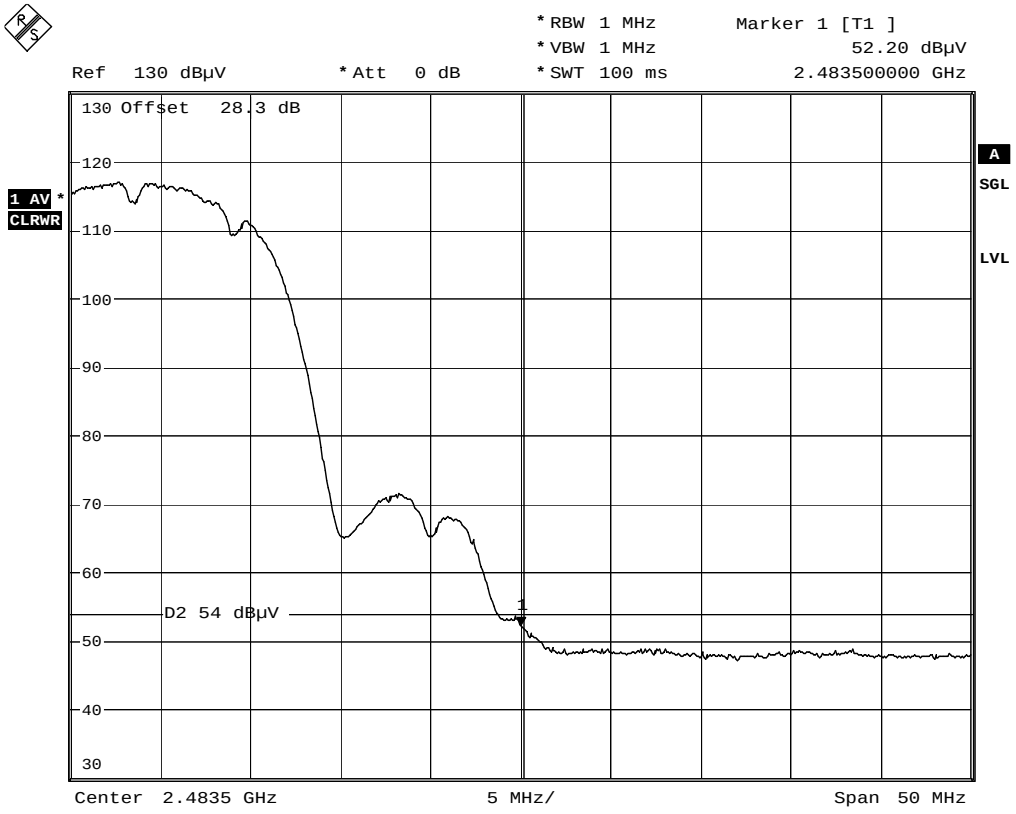
8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 1 Mbps, Output Power Level Setting: 108 (25.04 dBm)
Average Value Measured at 2390 MHz: 52.06 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:56:37

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

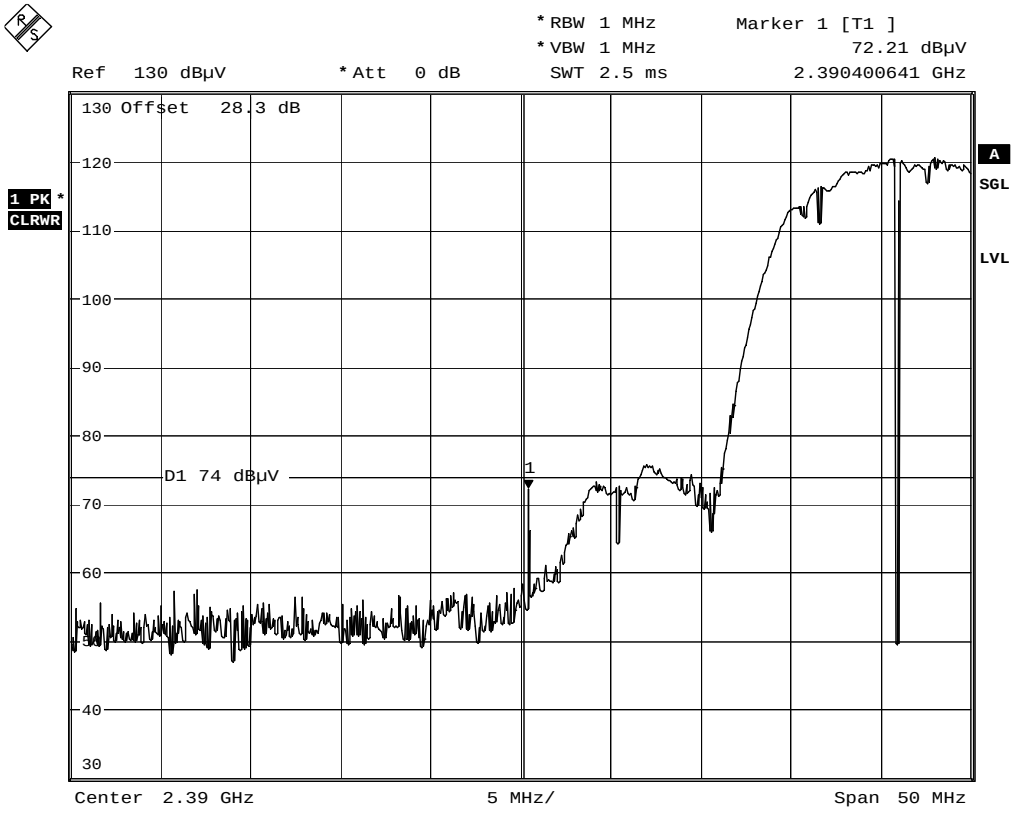
8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 1 Mbps, Output Power Level Setting: 108 (25.73 dBm)
Average Value Measured at 2483.5 MHz: 52.20 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 20:05:25

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

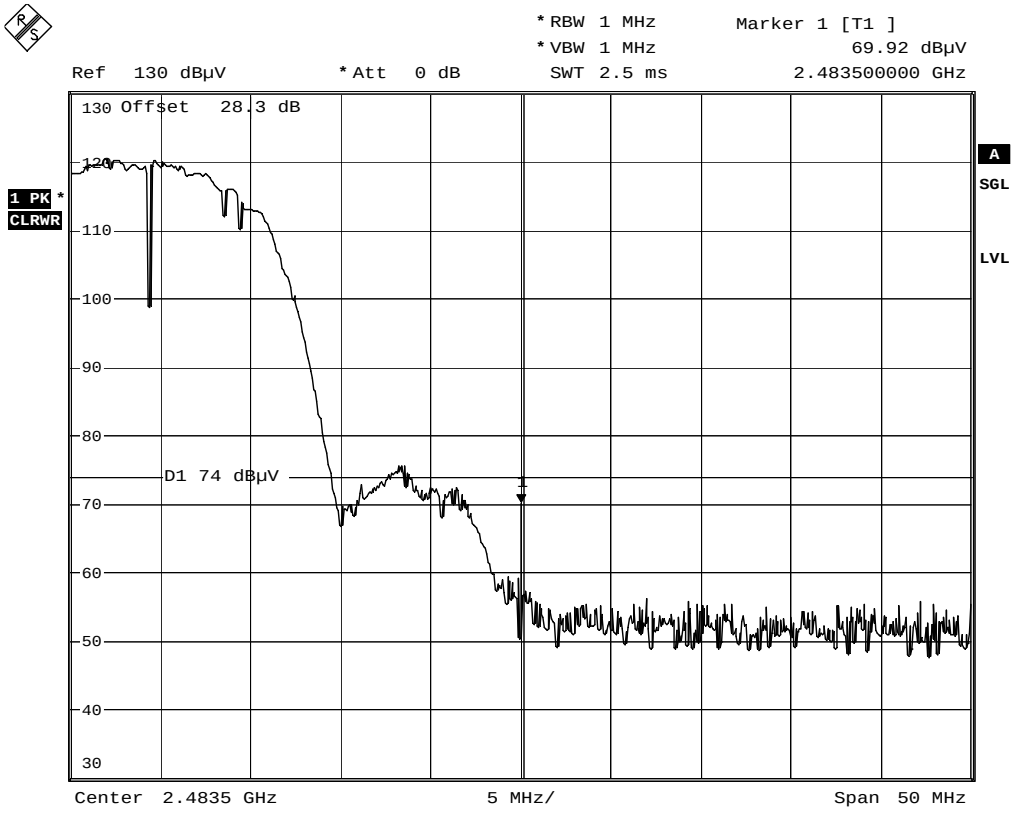
8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 1 Mbps, Output Power Level Setting: 108 (25.04 dBm)
Peak Value Measured at 2390 MHz: 72.21 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:59:55

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

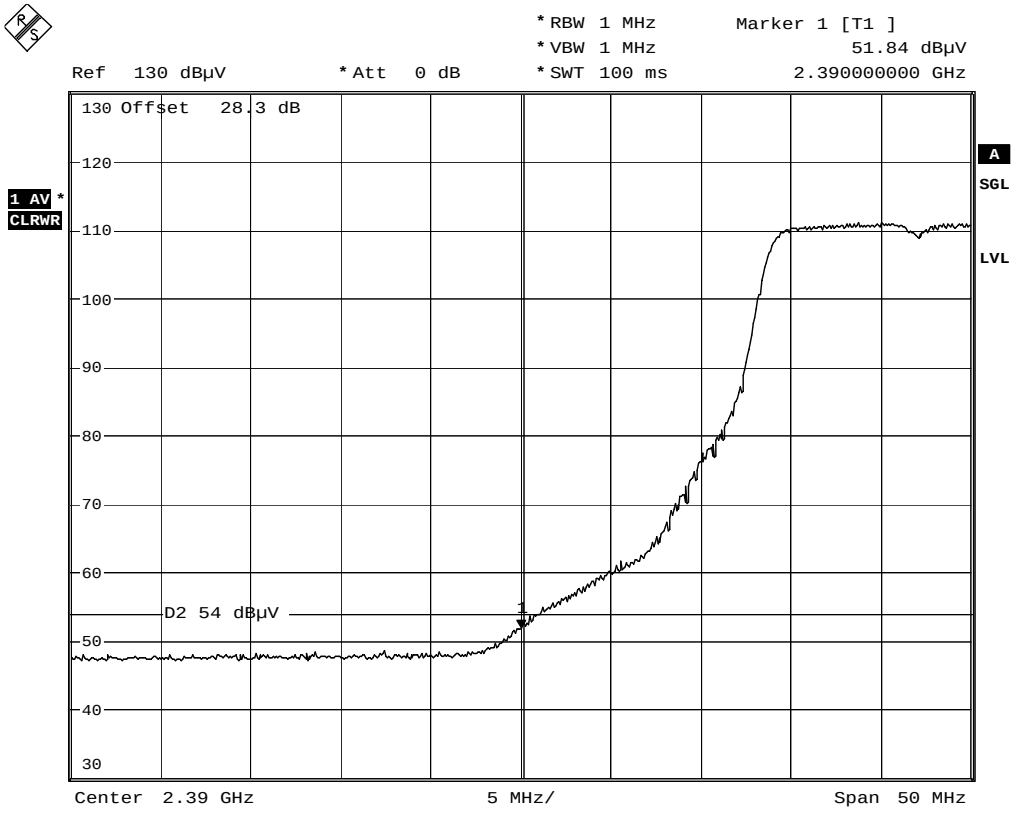
8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 1 Mbps, Output Power Level Setting: 108 (25.73 dBm)
Peak Value Measured at 2483.5 MHz: 69.92 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 20:07:21

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

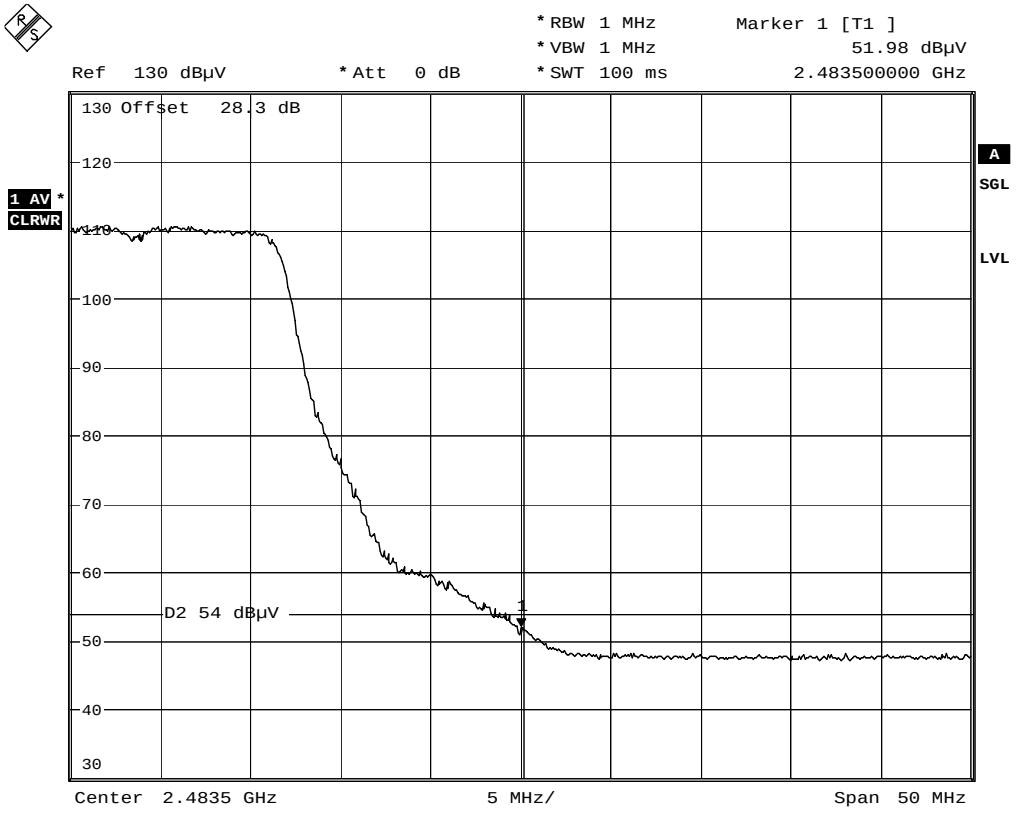
8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Average Value Measured at 2390 MHz: 51.84 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:44:40

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

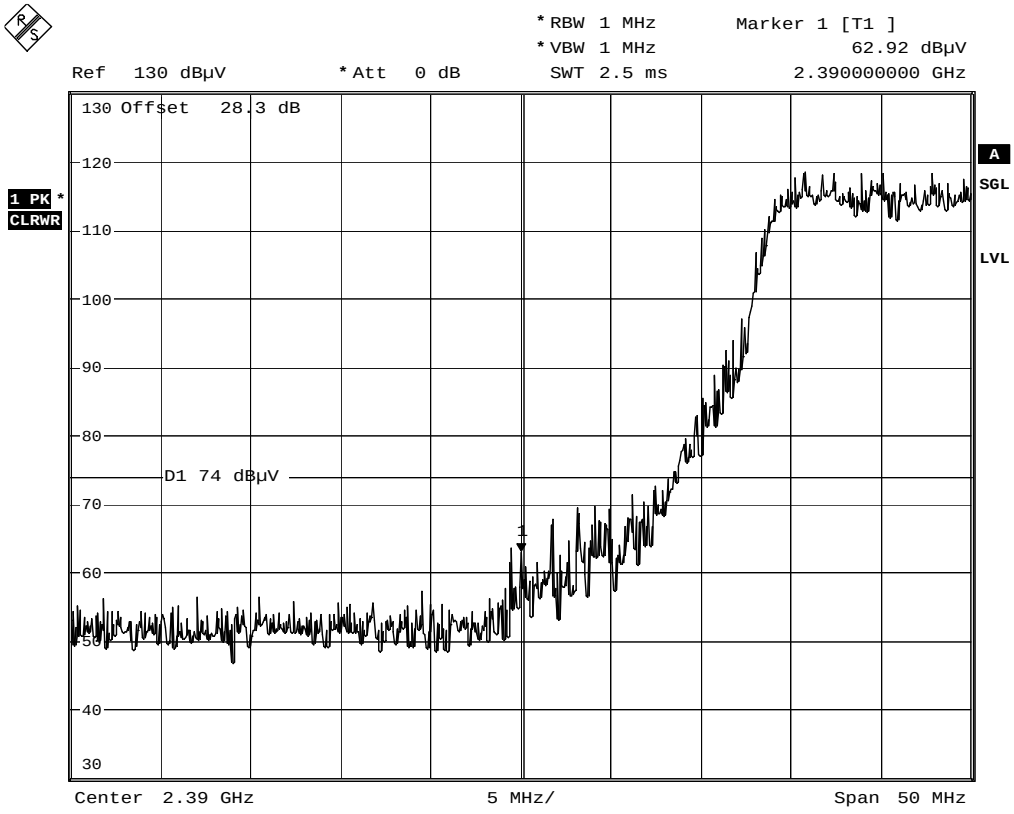
8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 6 Mbps, Output Power Level Setting: 96 (21.36 dBm)
Average Value Measured at 2483.5 MHz: 51.98 dBµV/m, Limit: 54 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:37:18

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

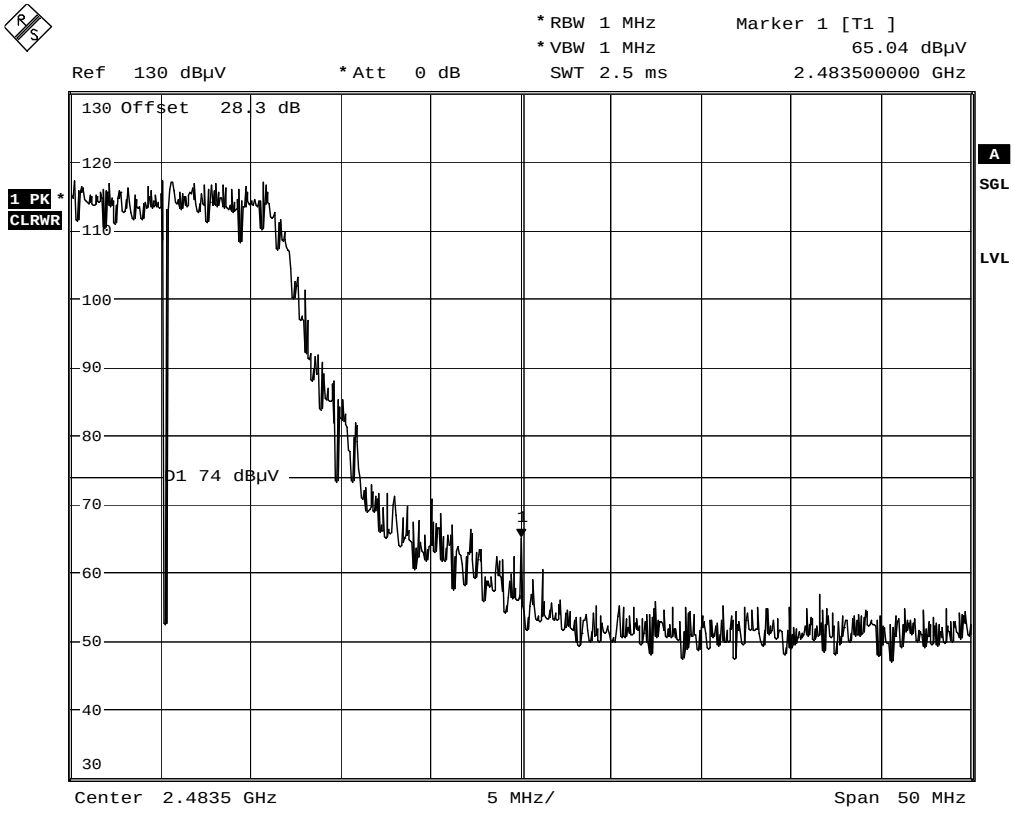
8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 6 Mbps, Output Power Level Setting: 92 (21.89 dBm)
Peak Value Measured at 2390 MHz: 62.92 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:48:36

15.209(a) Radiated Emissions within Restricted Bands - Band Edge

8 dBi Omni-directional Access Antenna, SPDG160
Data Rate: 6 Mbps, Output Power Level Setting: 96 (21.36 dBm)
Peak Value Measured at 2483.5 MHz: 65.04 dBµV/m, Limit: 74 dBµV/m
AF = 28.3 dB/m



Date: 22.JUN.2005 19:38:43

Occupied Bandwidth

Criteria: Clause 15.247(a)(2) Systems using digital modulation techniques

Systems using digital modulation techniques may operate in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands. The minimum 6dB bandwidth shall be at least 500 kHz.

Test Conditions:

Sample Number:	1	**Temperature:**	22 °C
Date:	May 16, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

Test Results:

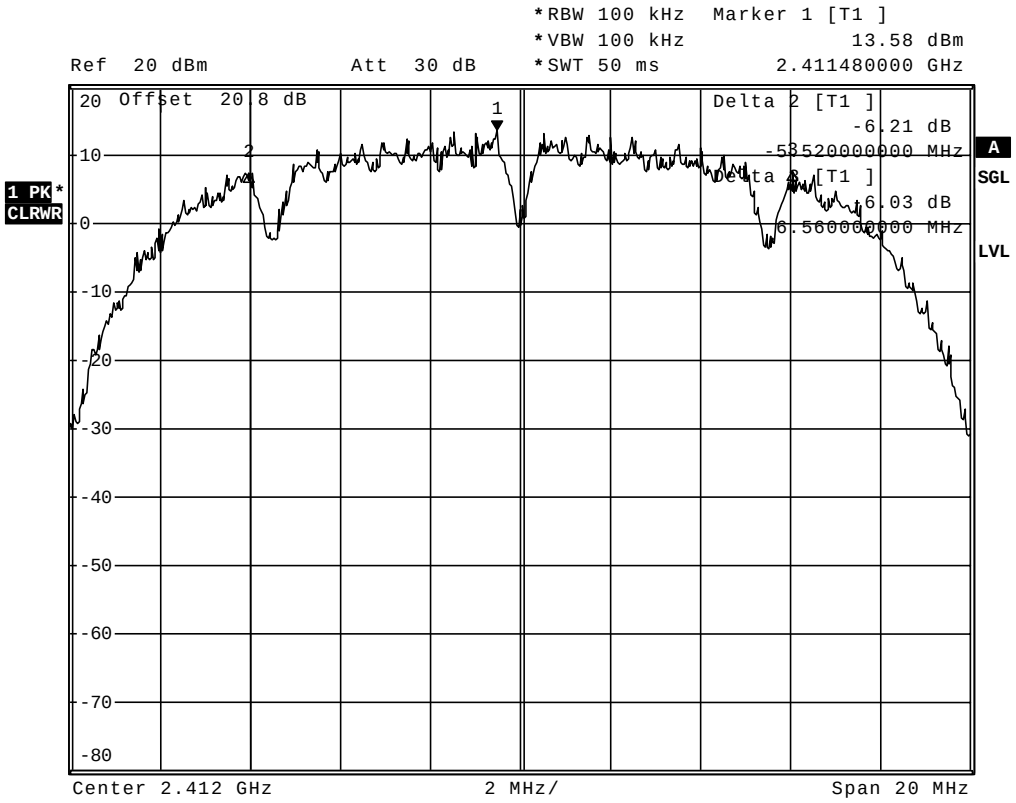
Data Rate/Modulation: 1 Mbps/DSSS (802.11 b)

Channel	Frequency (MHz)	6 dB Occupied BW (MHz)	99% Occupied BW (MHz)
Ch 1	2412	12.08	15.24
Ch 6	2437	12.08	15.40
Ch 11	2462	12.48	15.28

Data Rate/Modulation: 6 Mbps/OFDM (802.11 g)

Channel	Frequency (MHz)	6 dB Occupied BW (MHz)	99% Occupied BW (MHz)
Ch 1	2412	16.48	16.36
Ch 6	2437	16.44	16.40
Ch 11	2462	16.44	16.36

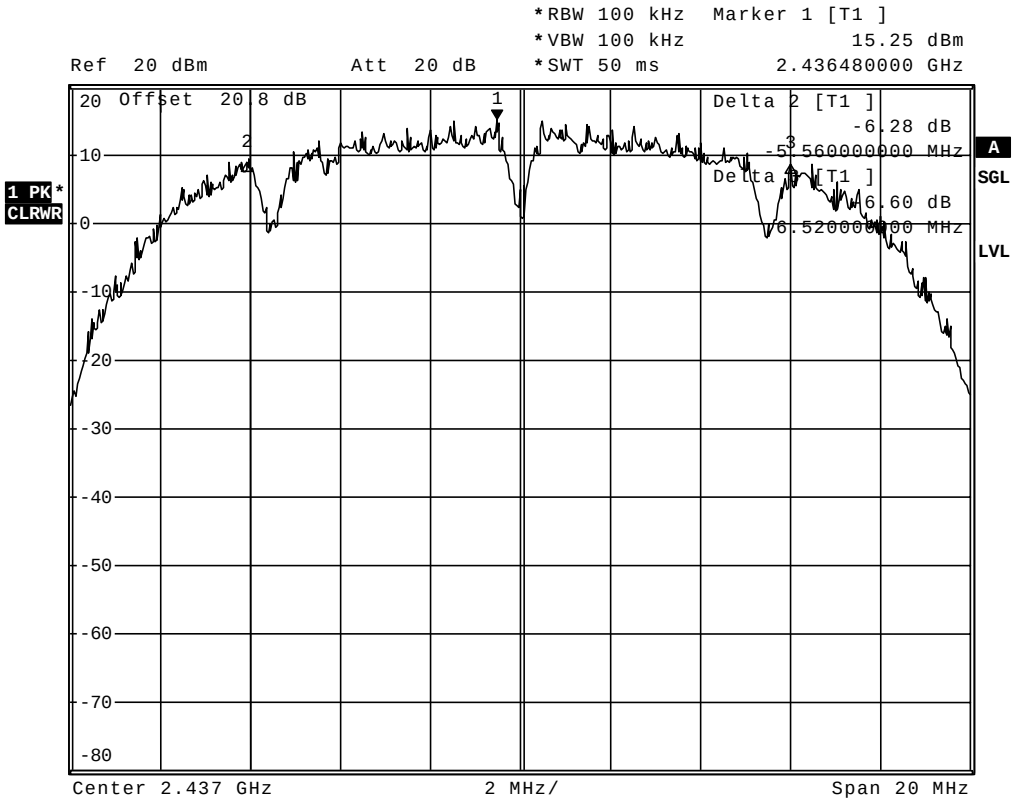
6 dB Occupied Bandwidth
Data Rate/Modulation: 1 Mbps/ DSSS (802.11 b)
Channel 1, 2412 MHz



Date: 16.MAY.2005 13:25:58

OccBW = 5.52 MHz + 6.56 MHz = 12.08 MHz

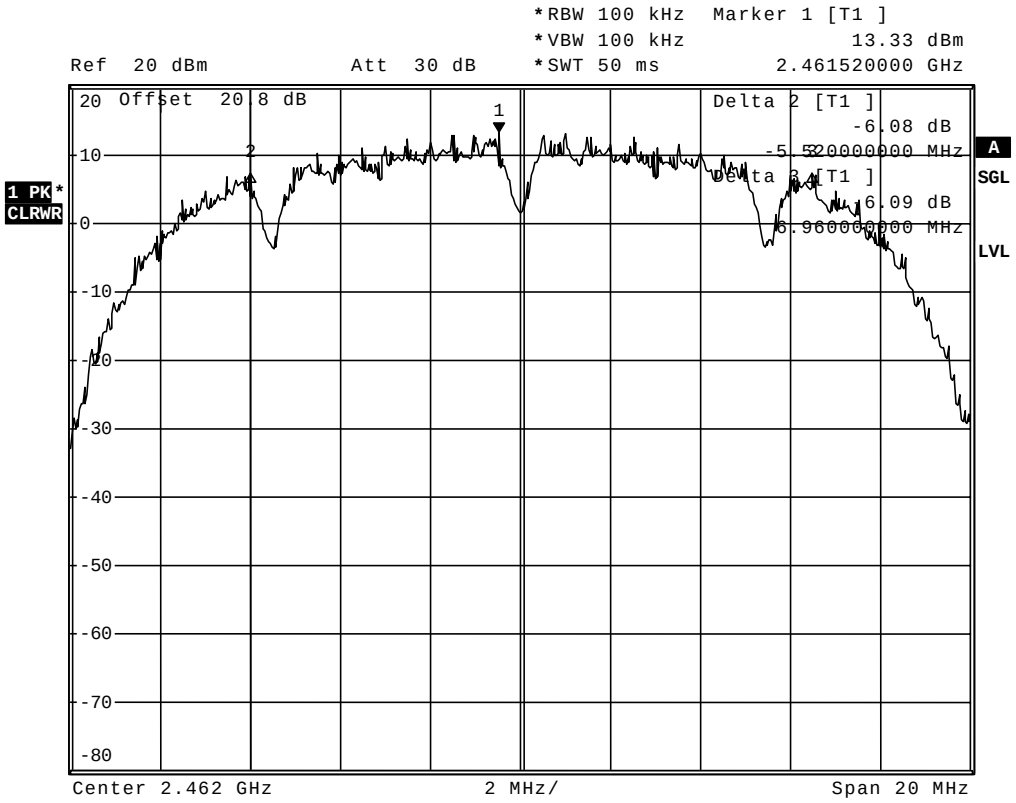
6 dB Occupied Bandwidth
Data Rate/Modulation: 1 Mbps/ DSSS (802.11 b)
Channel 6, 2437 MHz



Date: 16.MAY.2005 13:33:39

OccBW = 5.56 MHz + 6.52 MHz = 12.08 MHz

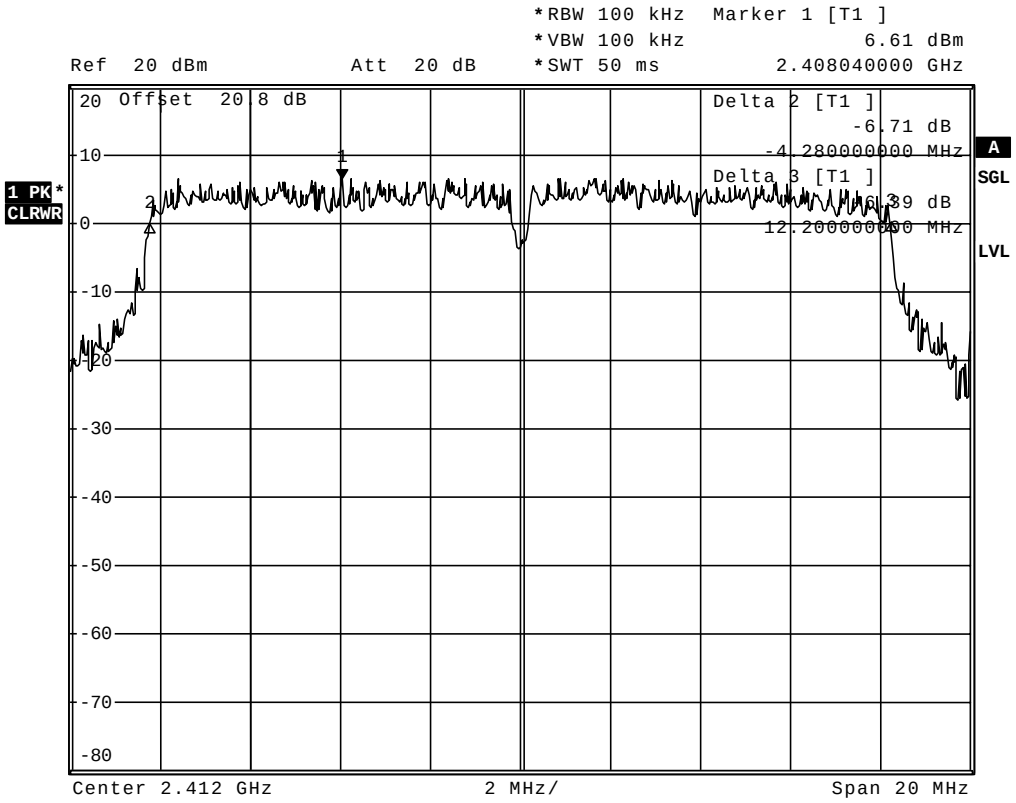
6 dB Occupied Bandwidth
Data Rate/Modulation: 1 Mbps/ DSSS (802.11 b)
Channel 11, 2462 MHz



Date: 16.MAY.2005 13:42:52

OccBW = 5.52 MHz + 6.96 MHz = 12.48 MHz

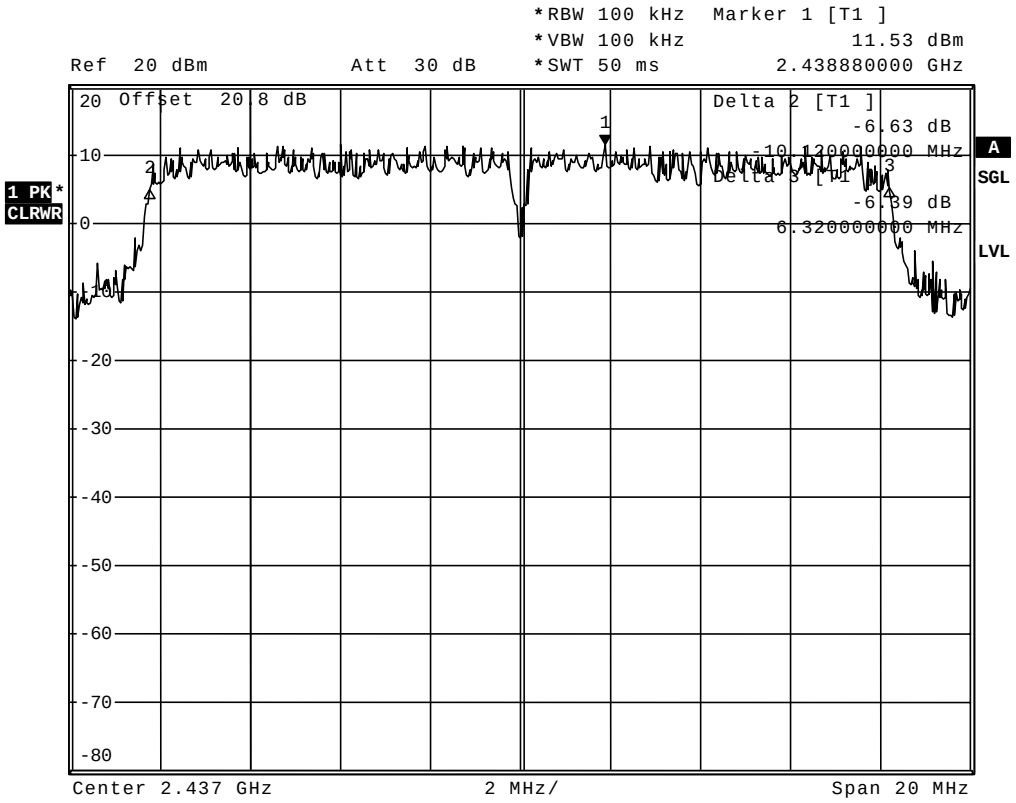
6 dB Occupied Bandwidth
Data Rate/Modulation: 6 Mbps/OFDM (802.11 g)
Channel 1, 2412 MHz



Date: 16.MAY.2005 14:00:02

OccBW = 4.28 MHz + 12.20 MHz = 16.48 MHz

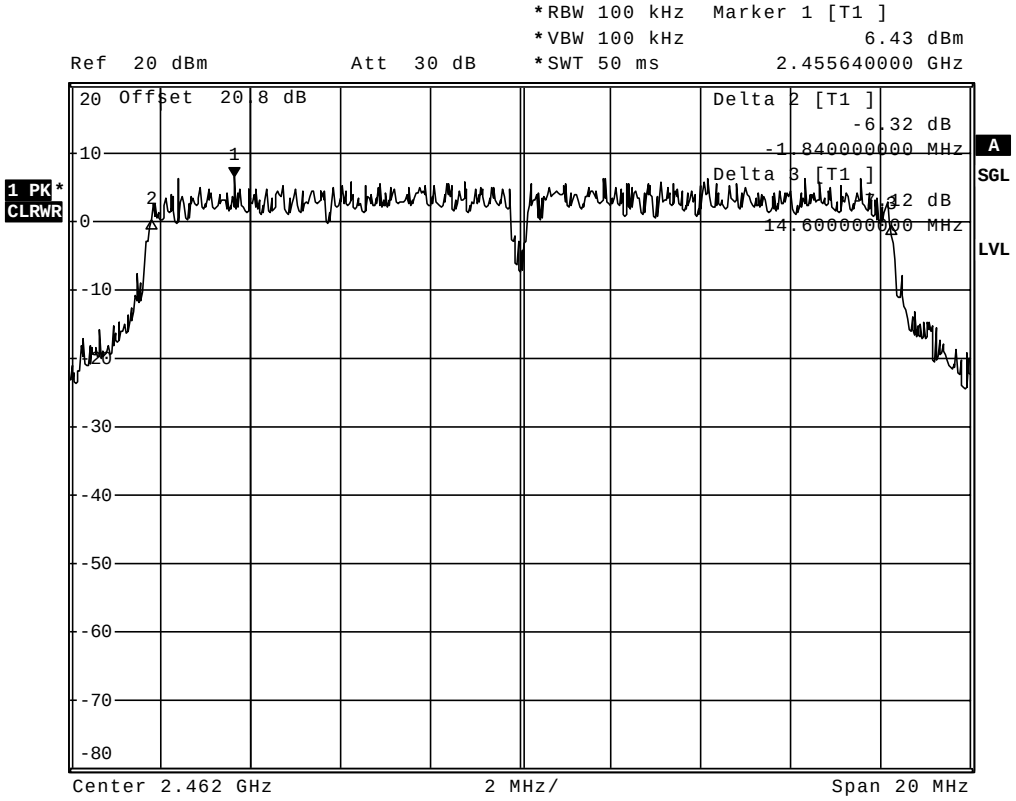
6 dB Occupied Bandwidth
Data Rate/Modulation: 6 Mbps/ OFDM (802.11 g)
Channel 6, 2437 MHz



Date: 16.MAY.2005 14:10:50

OccBW = 10.12 MHz + 6.32 MHz = 16.44 MHz

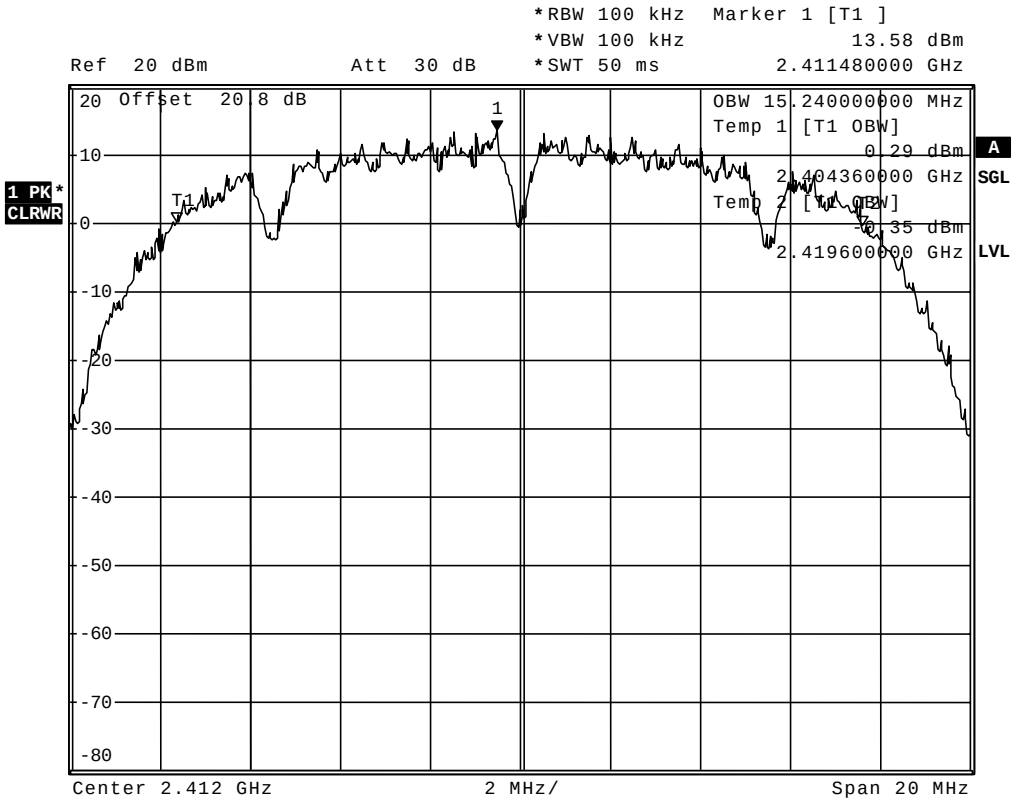
6 dB Occupied Bandwidth
Data Rate/Modulation: 6 Mbps/ OFDM (802.11 g)
Channel 11, 2462 MHz



Date: 16.MAY.2005 14:22:08

OccBW = 1.84 MHz + 14.60 MHz = 16.44 MHz

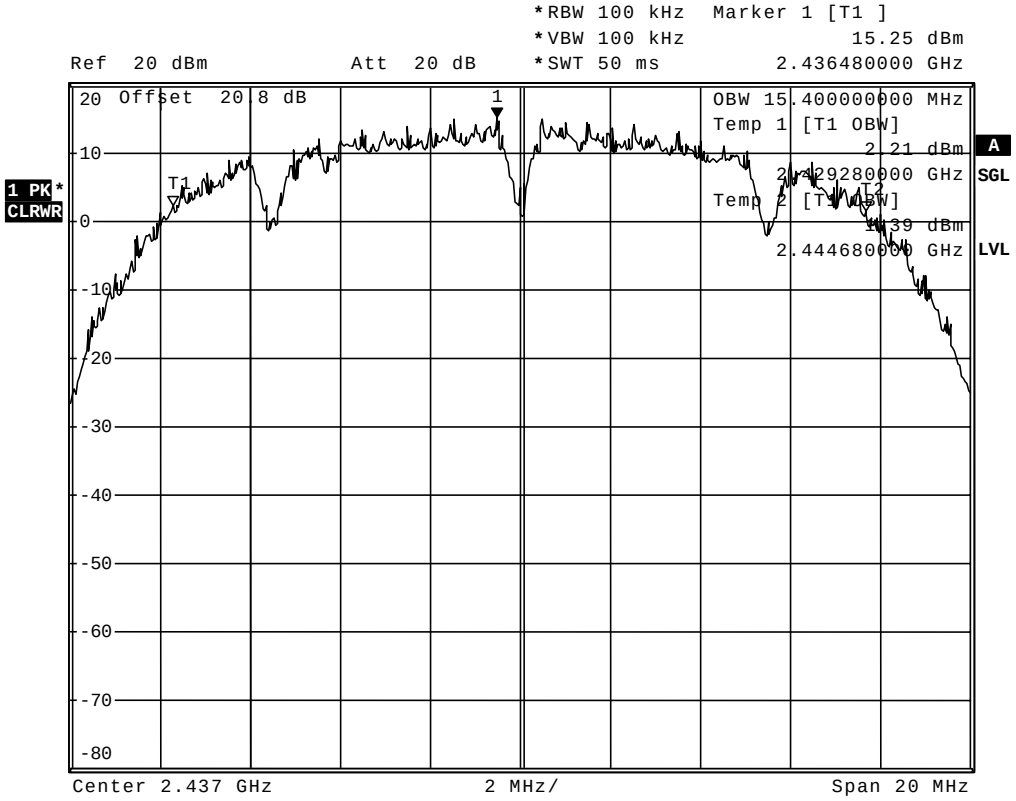
99% Occupied Bandwidth
Data Rate/Modulation: 1 Mbps/DSSS (802.11 b)
Channel 1, 2412 MHz



Date: 16.MAY.2005 13:27:08

OccBW = 15.24 MHz

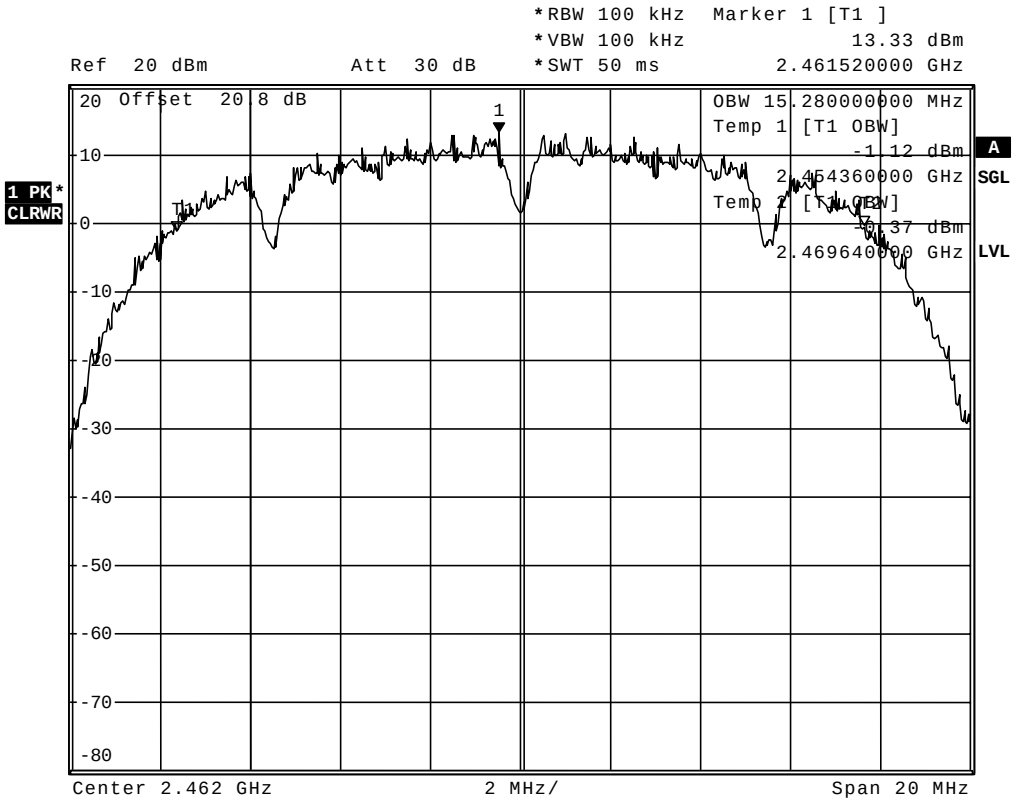
99% Occupied Bandwidth
Data Rate/Modulation: 1 Mbps/ DSSS (802.11 b)
Channel 6, 2437 MHz



Date: 16.MAY.2005 13:37:16

OccBW = 15.40 MHz

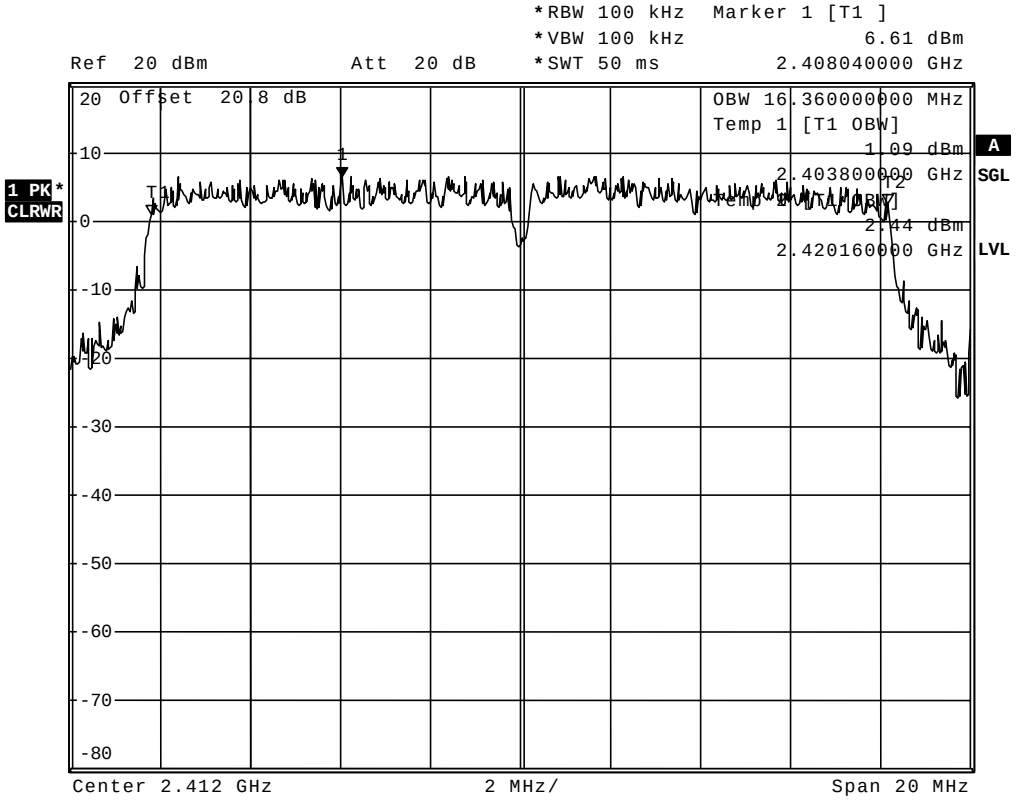
99% Occupied Bandwidth
Data Rate/Modulation: 1 Mbps/ DSSS (802.11 b)
Channel 11, 2462 MHz



Date: 16.MAY.2005 13:44:13

OccBW = 15.28 MHz

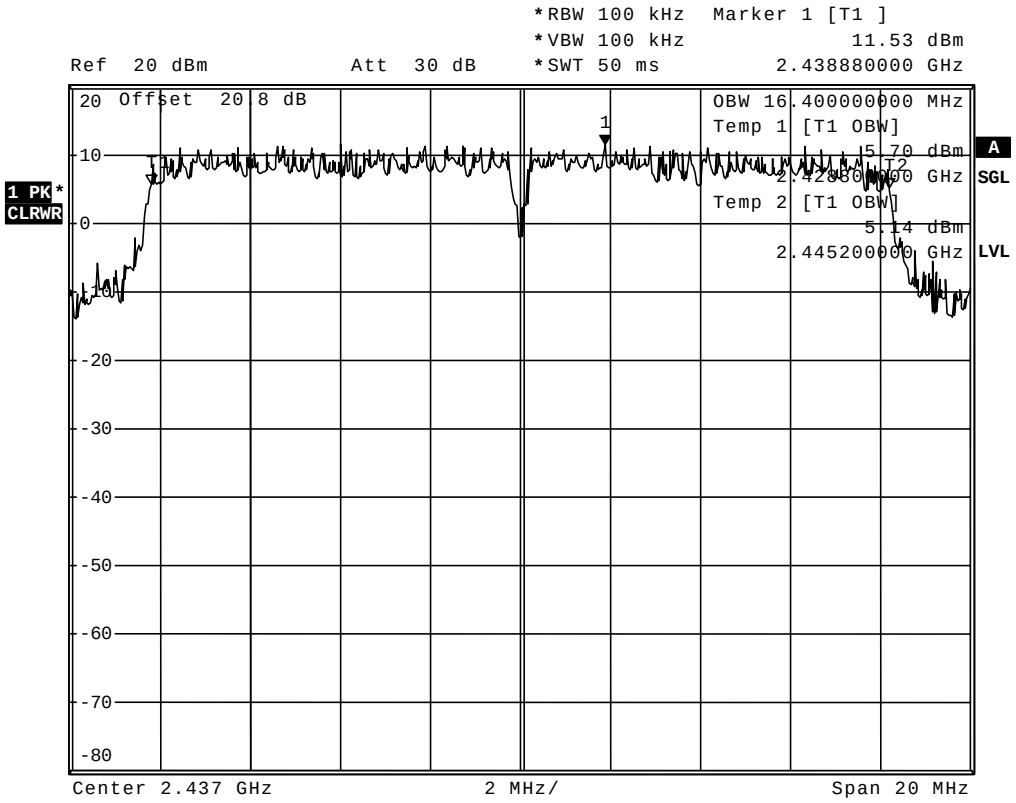
99% Occupied Bandwidth
Data Rate/Modulation: 6 Mbps/OFDM (802.11 g)
Channel 1, 2412 MHz



Date: 16.MAY.2005 14:05:08

OccBW = 16.36 MHz

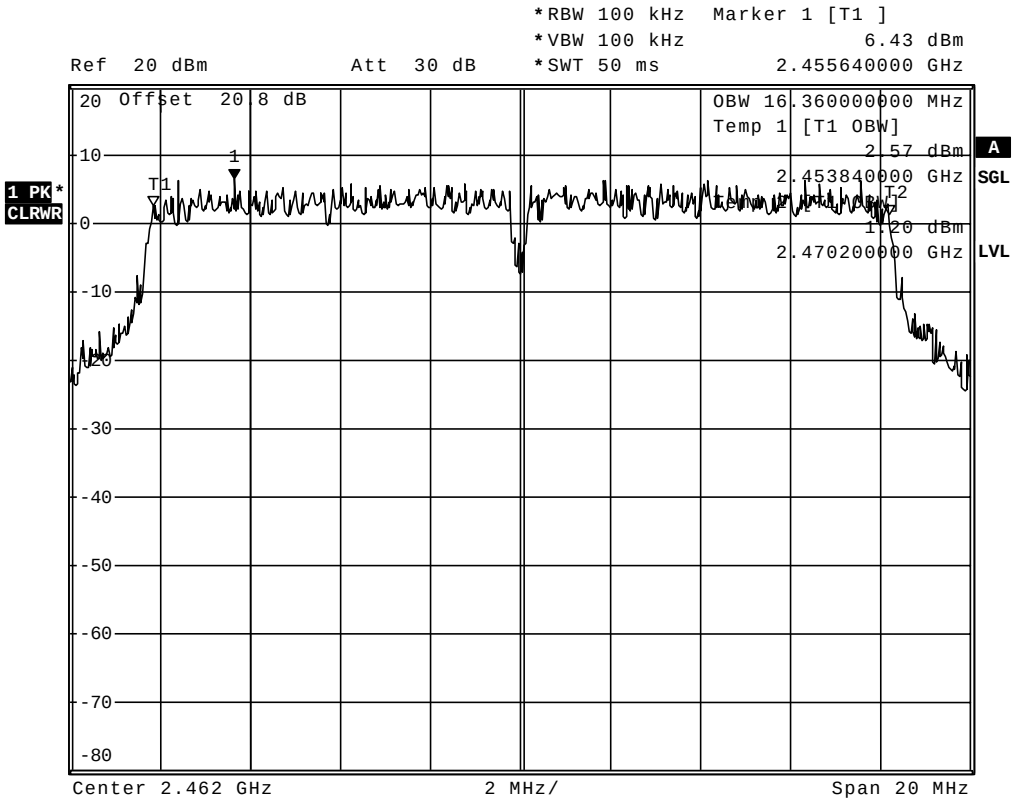
99% Occupied Bandwidth
Data Rate/Modulation: 6 Mbps/ OFDM (802.11 g)
Channel 6, 2437 MHz



Date: 16.MAY.2005 14:12:52

OccBW = 16.40 MHz

99% Occupied Bandwidth
Data Rate/Modulation: 6 Mbps/ OFDM (802.11 g)
Channel 11, 2462 MHz



Date: 16.MAY.2005 14:23:22

OccBW = 16.36 MHz

Maximum Peak Output Power

Criteria: Clause 15.247(b)(3) Maximum peak output power of systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signalling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Conditions:

Sample Number:	1	**Temperature:**	22 °C
Date:	May 30, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

Test Results: See attached tables and plots.

Maximum Peak Output Power (Conducted):

Results in the following tables were obtained by measuring output power in accordance with new FCC guidelines for Measurement of Digital Transmission Systems Operating under Section 15.247 issued on March 23, 2005.

Data Rate/Modulation: 1 Mbps/DSSS (802.11 b)

	Ch 1 2412 MHz		Ch 6 2437 MHz		Ch 11 2462 MHz		
Antenna Gain (dBi)	**Output Power (dBm)**	**Power Level Setting**	**Output Power (dBm)**	**Power Level Setting**	**Output Power (dBm)**	**Power Level Setting**	**Output Power Limit (dBm)**
6	25.55	120	27.48	120	25.35	120	30
8	25.55	120	27.48	120	25.73	108	28
10	24.78	102	26.00	108	24.30	100	26
12	24.00	99	23.98	99	24.00	99	24

Data Rate/Modulation: 6 Mbps/OFDM (802.11 g)

	Ch 1 2412 MHz		Ch 6 2437 MHz		Ch 11 2462 MHz		
Antenna Gain (dBi)	**Output Power (dBm)**	**Power Level Setting**	**Output Power (dBm)**	**Power Level Setting**	**Output Power (dBm)**	**Power Level Setting**	**Output Power Limit (dBm)**
6	22.50	120	27.27	120	22.16	120	30
8	22.50	120	27.27	120	22.16	120	28
10	21.89	92	25.69	108	21.62	100	26
12	22.43	102	23.94	101	21.57	102	24

Note:

The EUT uses a ‘maximum power limit look-up table’ that is recorded in an EEPROM to limit maximum power on a per-channel and per-rate basis. The limits will be set according to the final measurements data from this report that meet certification requirements for maximum power and for restricted bands with margin.

Criteria: Clause 15.247(b)(4) Maximum peak output power

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Test Conditions:

Sample Number:	1	**Temperature:**	22 °C
Date:	May 30, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

Test Results:
Maximum Peak Output Power:

Limit: 30 dBm conducted, 36 dBm EIRP

Data Rate: 1 Mbps

Level Setting: 120
Measured conducted output power = 27.48 dBm
Maximum output power = 27.48 dBm + 8.00 dBi = 35.48 dBm EIRP

Level Setting: 108
Measured conducted output power = 26.00 dBm
Maximum output power = 26.00 dBm + 10.00 dBi = 36.00 dBm EIRP

Level Setting: 99
Measured conducted output power = 23.98 dBm
Maximum output power = 23.98 dBm + 12.00 dBi = 35.98 dBm EIRP

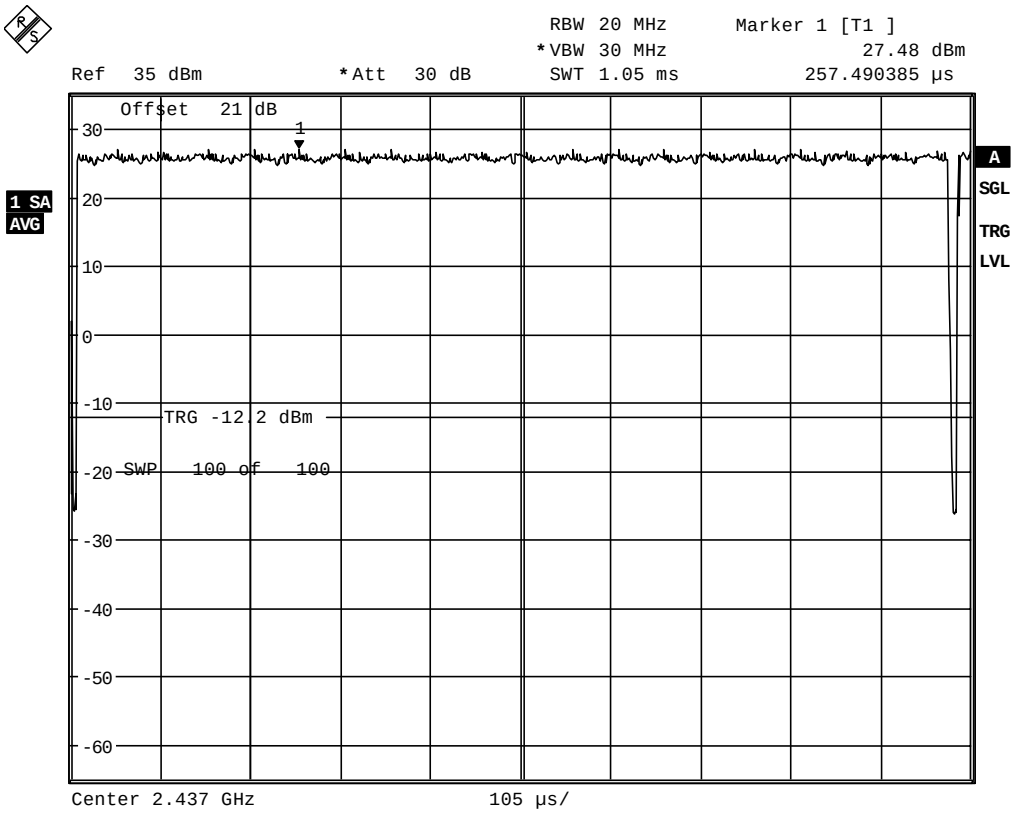
Data Rate: 6 Mbps

Level Setting: 120
Measured conducted output power = 27.27 dBm
Maximum output power = 27.27 dBm + 8.00 dBi = 35.27 dBm EIRP

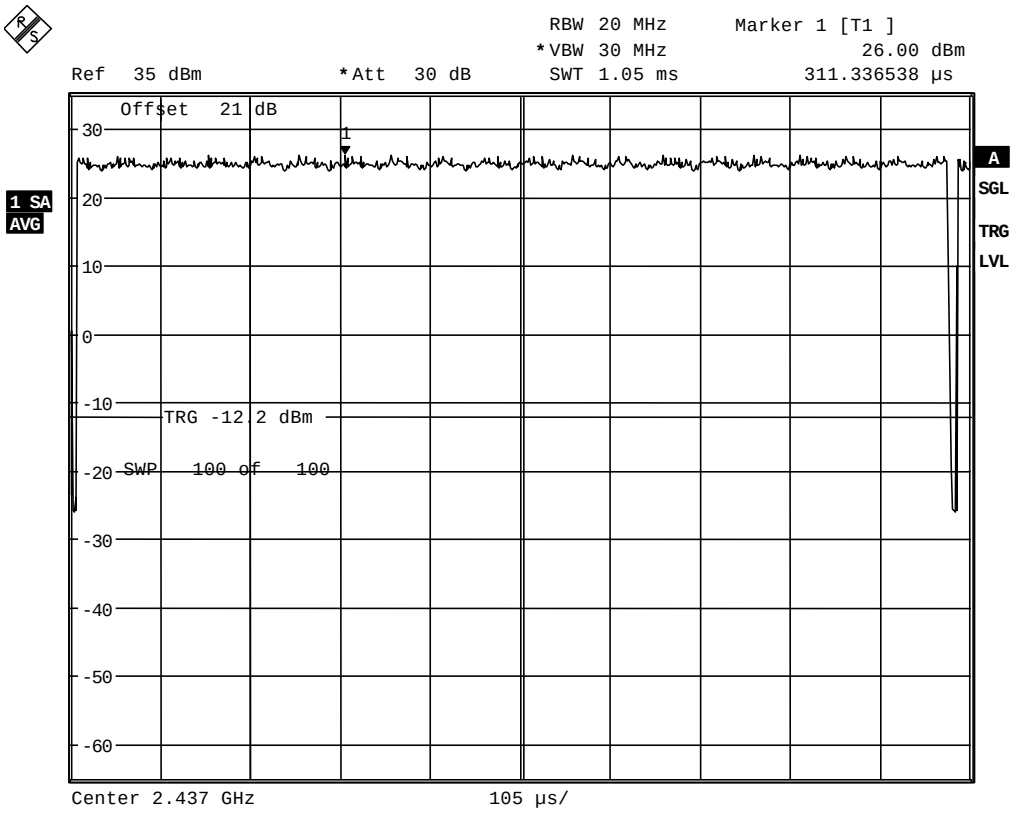
Level Setting: 108
Measured conducted output power = 25.69 dBm
Maximum output power = 25.69 dBm + 10.00 dBi = 35.69 dBm EIRP

Level Setting: 101
Measured conducted output power = 23.94 dBm
Maximum output power = 23.94 dBm + 12.00 dBi = 35.94 dBm EIRP

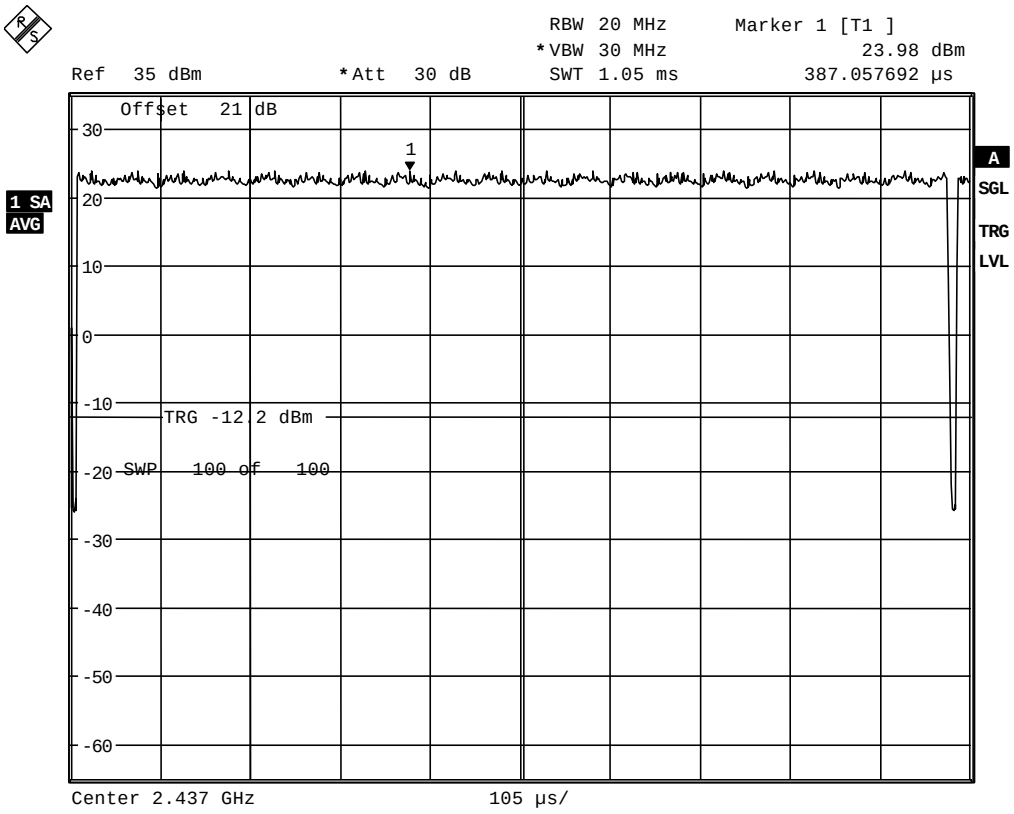
Output Power Measurement
Channel: Mid (2437 MHz)
Data Rate: 1 Mbps
Power Level Setting: 120



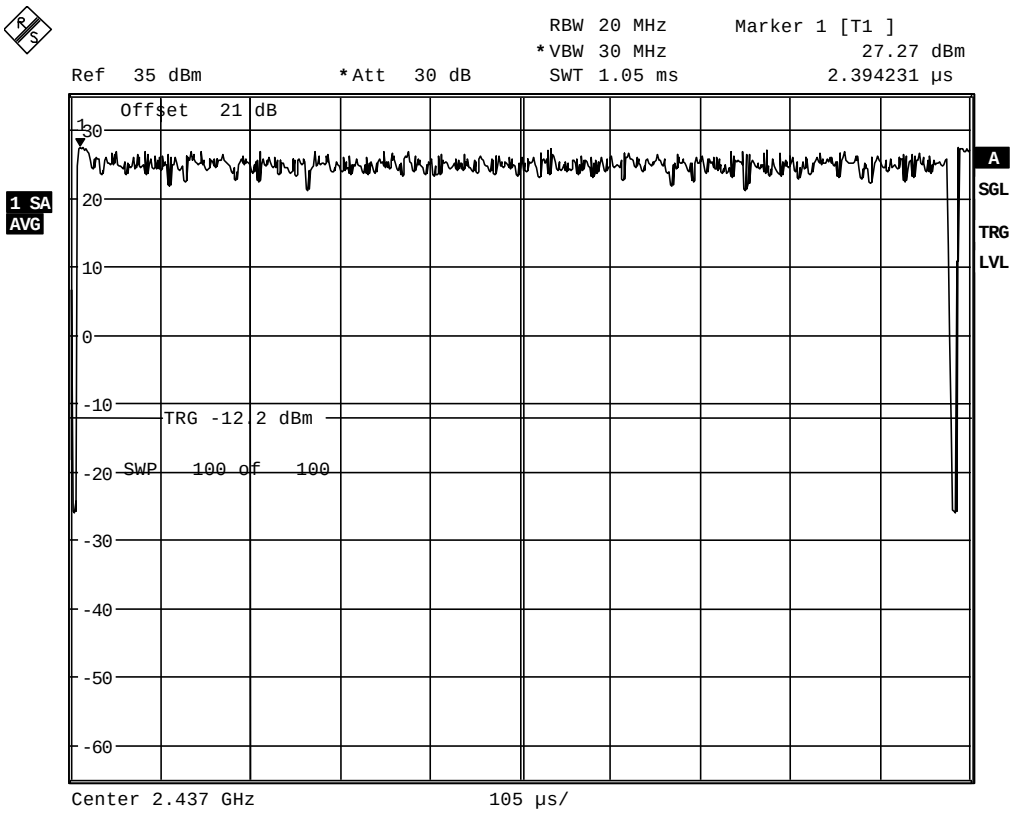
Output Power Measurement
Channel: Mid (2437 MHz)
Data Rate: 1 Mbps
Power Level Setting: 108



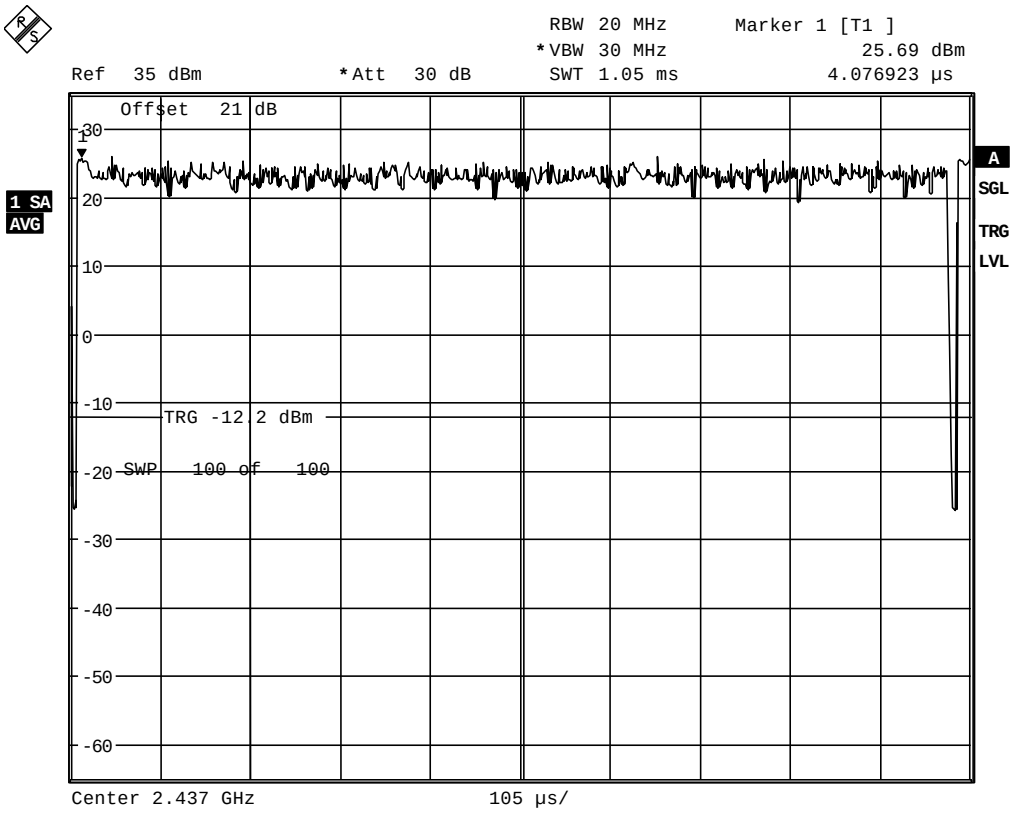
Output Power Measurement
Channel: Mid (2437 MHz)
Data Rate: 1 Mbps
Power Level Setting: 99



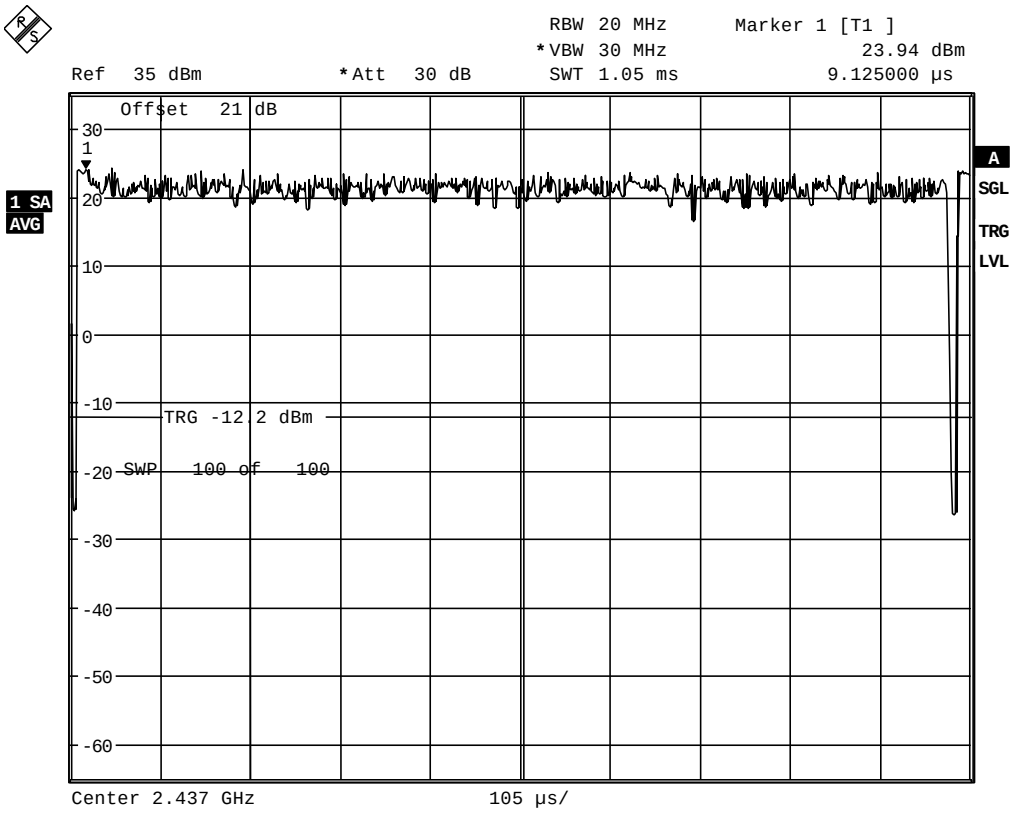
Output Power Measurement
Channel: Mid (2437 MHz)
Data Rate: 6 Mbps
Power Level Setting: 120



Output Power Measurement
Channel: Mid (2437 MHz)
Data Rate: 6 Mbps
Power Level Setting: 108



Output Power Measurement
Channel: Mid (2437 MHz)
Data Rate: 6 Mbps
Power Level Setting: 100



Supply Voltage Variation

Criteria: Clause 15.31 Variation of the Input Power

§ 15.31 (e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery-operated equipment, the equipment tests shall be performed using a new battery.

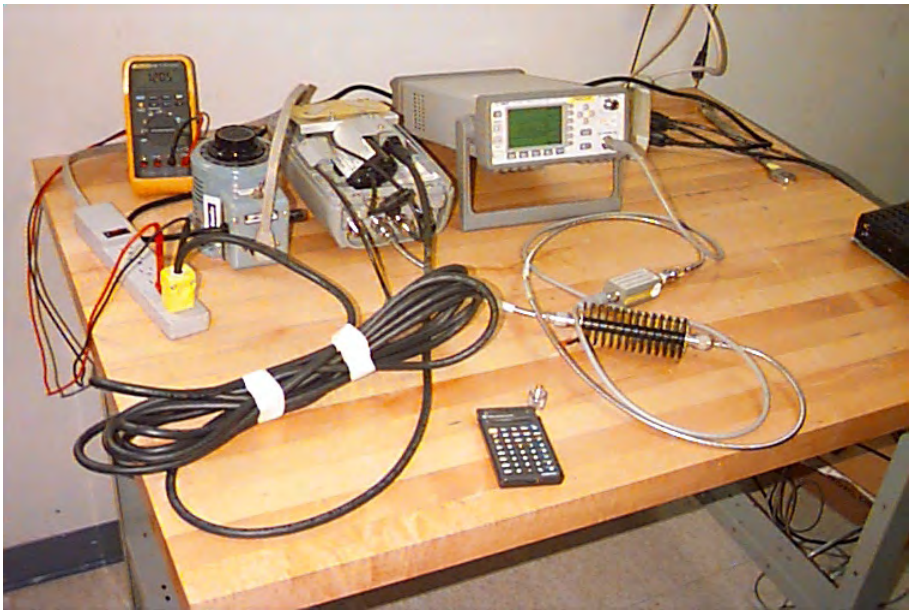
Test Conditions:

Sample Number:	1	**Temperature:**	22 °C
Date:	June 30, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

Test Results:

The supply voltage was varied between 85% and 115% of the nominal rated supply voltage (120 VAC). There was no measurable change in transmitted output power.

Voltage Variation Test Setup



Emissions Not in Restricted Bands (-20 dBc)

Criteria: Clause 15.247(d) Emissions Not in Restricted Bands

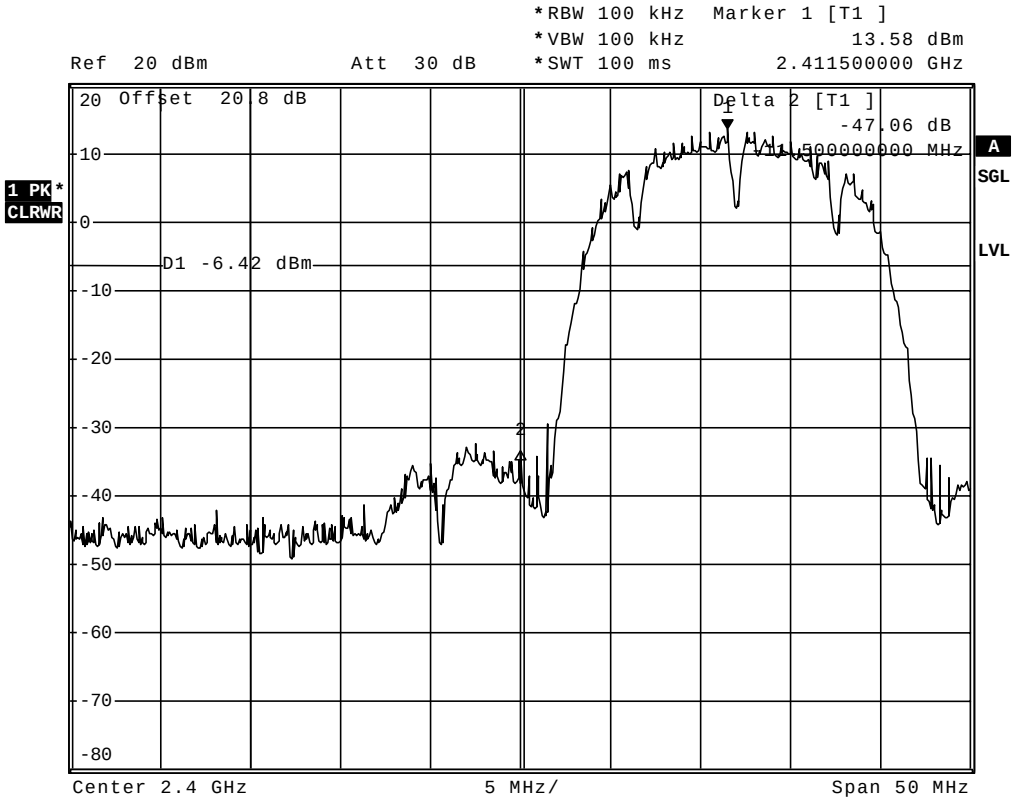
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Test Conditions:

Sample Number:	1	**Temperature:**	22 °C
Date:	May 16, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

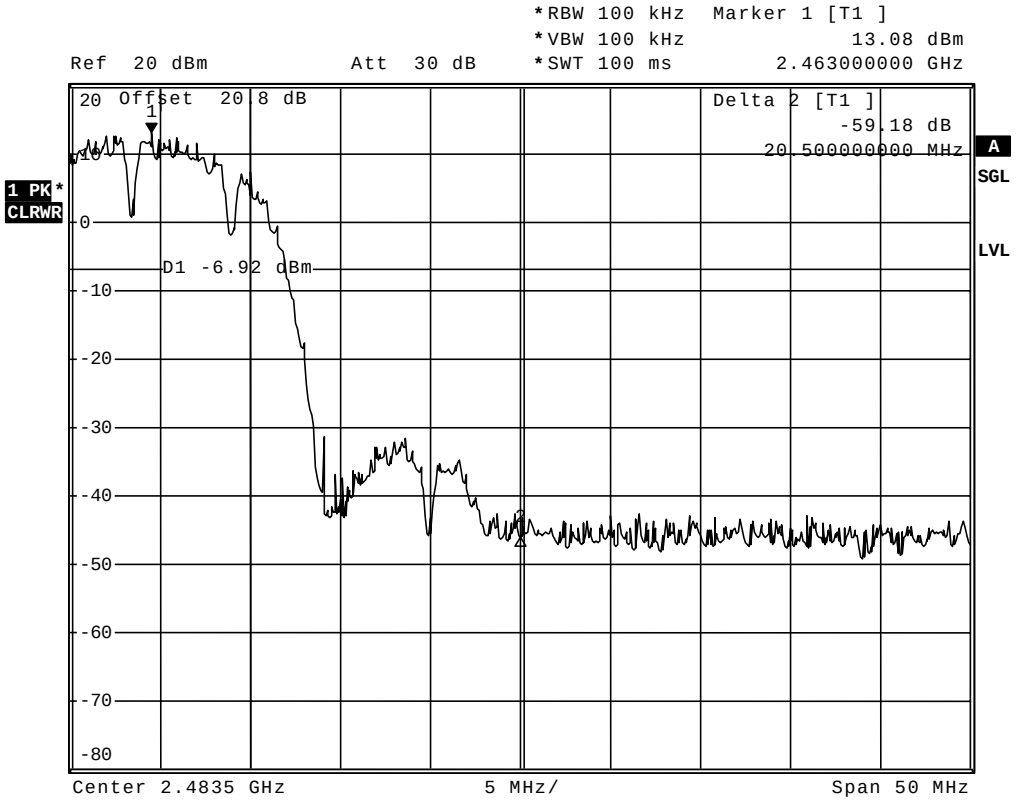
Test Results: See Attached Plots.

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Band Edge, Criteria: -20 dBc
Data Rate: 1 Mbps, 2400 MHz



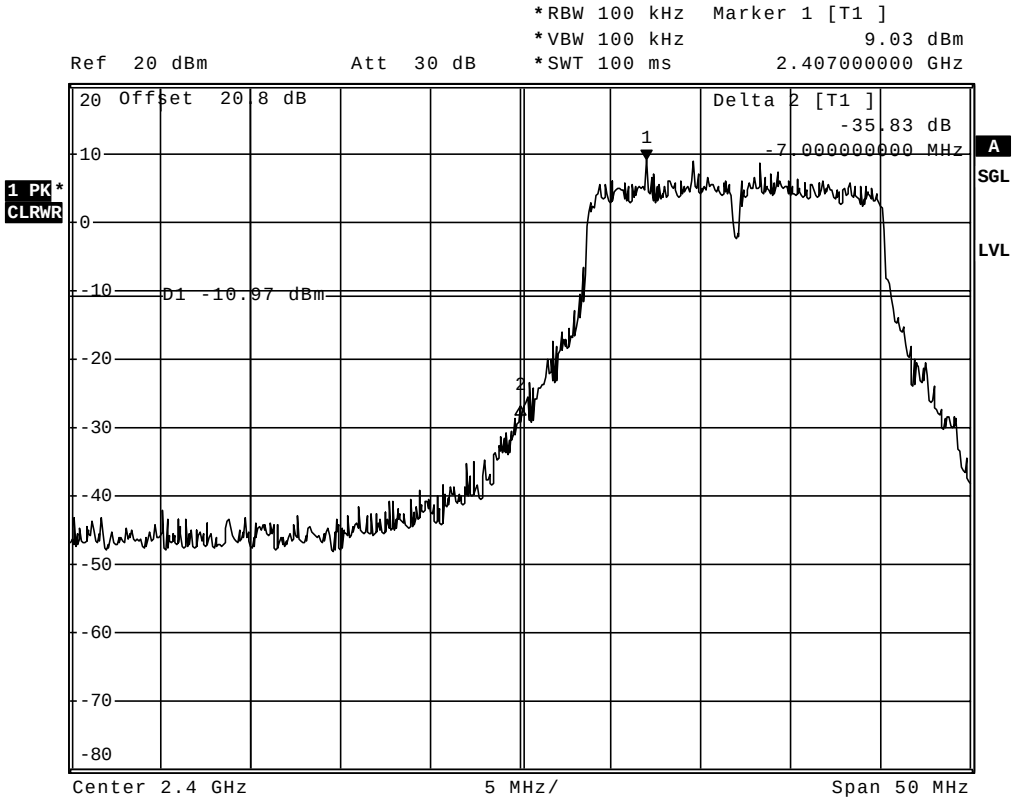
Date: 16.MAY.2005 16:31:17

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Band Edge, Criteria: -20 dBc
Data Rate: 1 Mbps, 2483.5 MHz



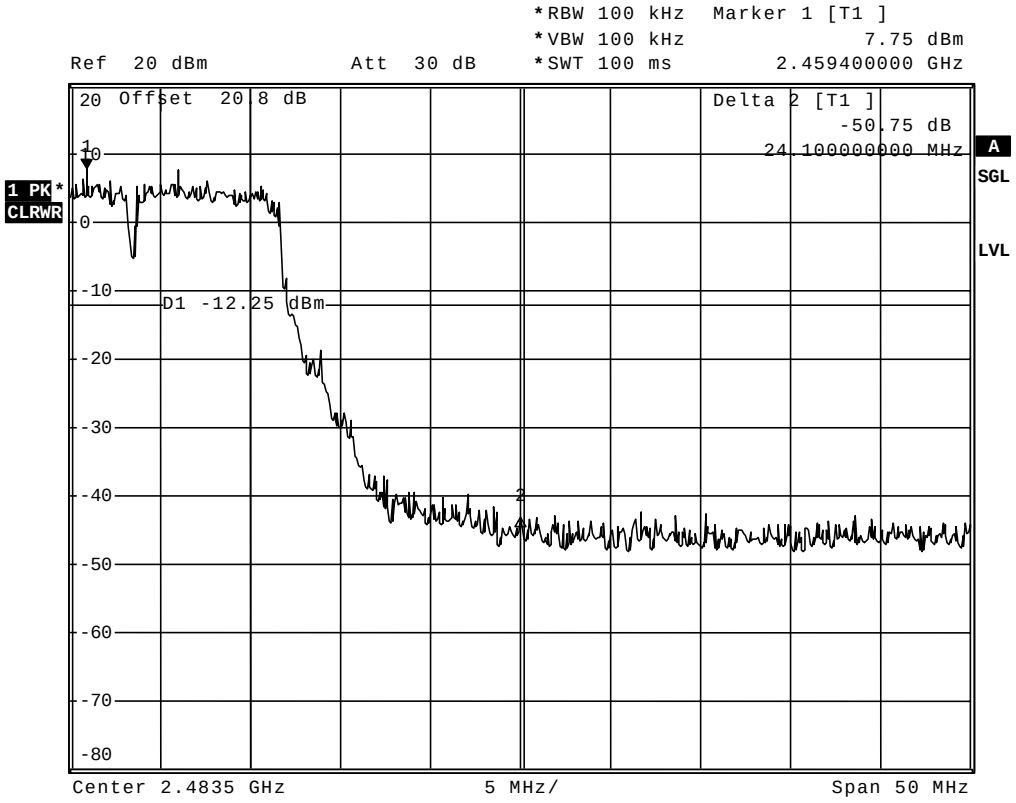
Date: 16.MAY.2005 16:45:54

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Band Edge, Criteria: -20 dBc
Data Rate: 6 Mbps, 2400 MHz



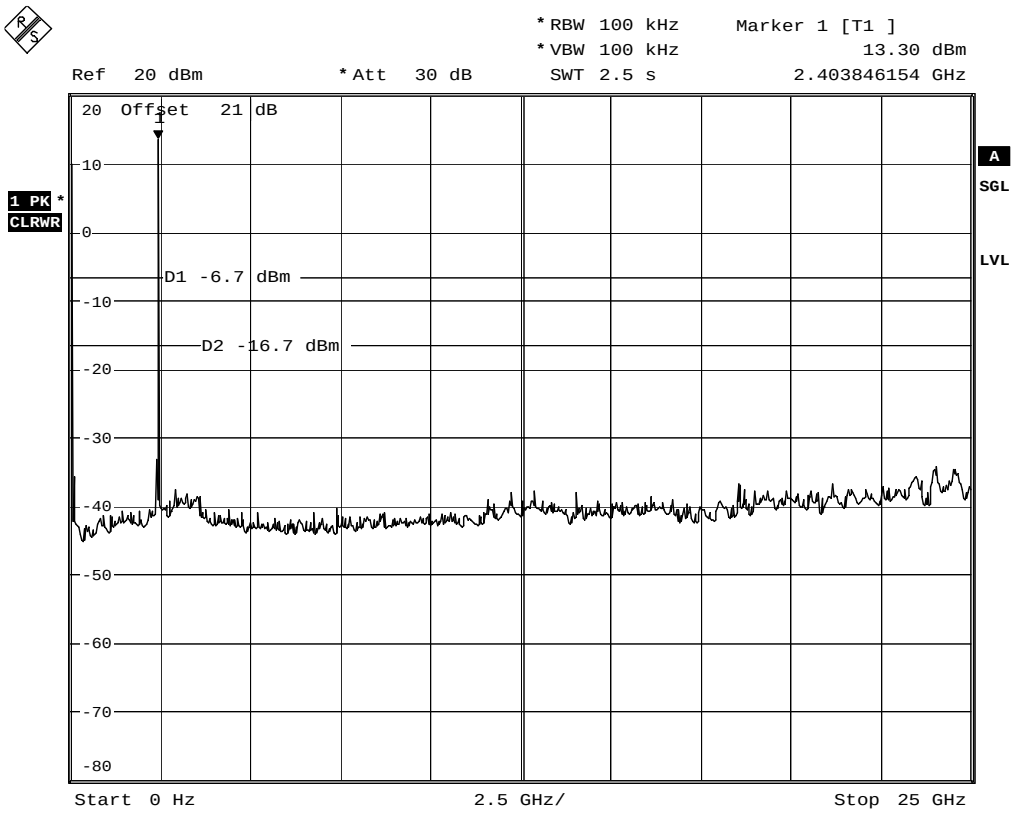
Date: 16.MAY.2005 16:36:52

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Band Edge, Criteria: -20 dBc
Data Rate: 6 Mbps, 2483.5 MHz



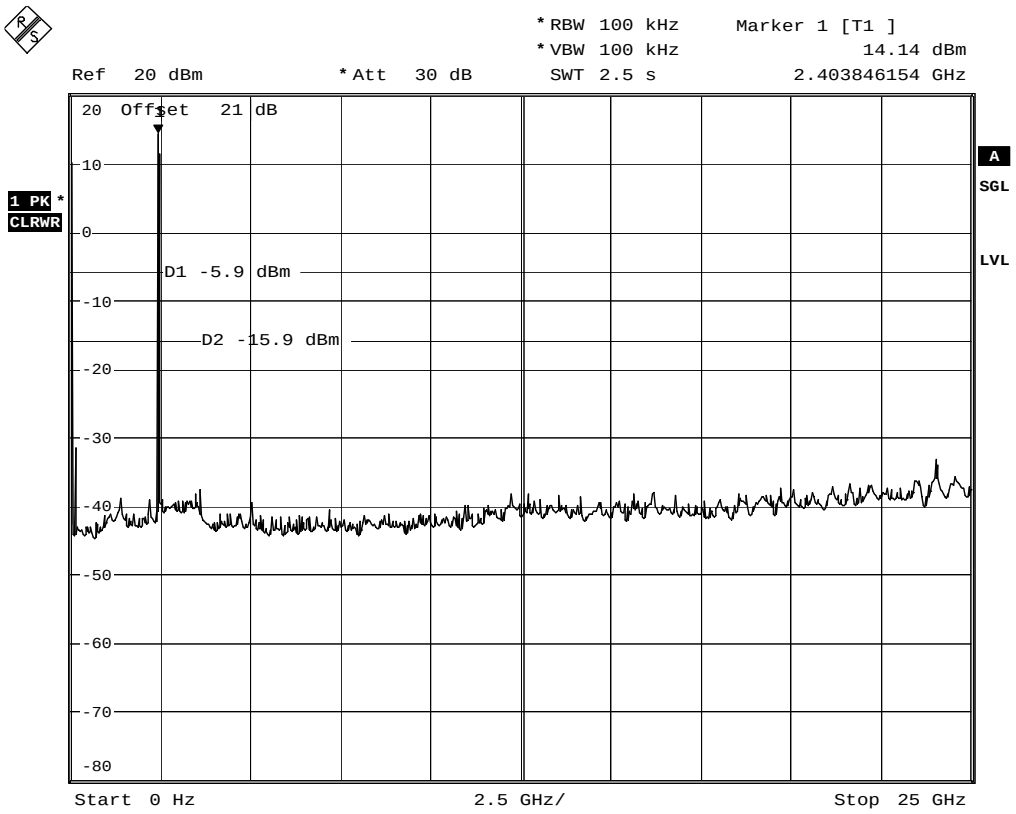
Date: 16.MAY.2005 16:43:09

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Spurious Emissions, Criteria: -20 dBc and -30 dBc
Data Rate: 1 Mbps
Channel 1 - 2412 MHz



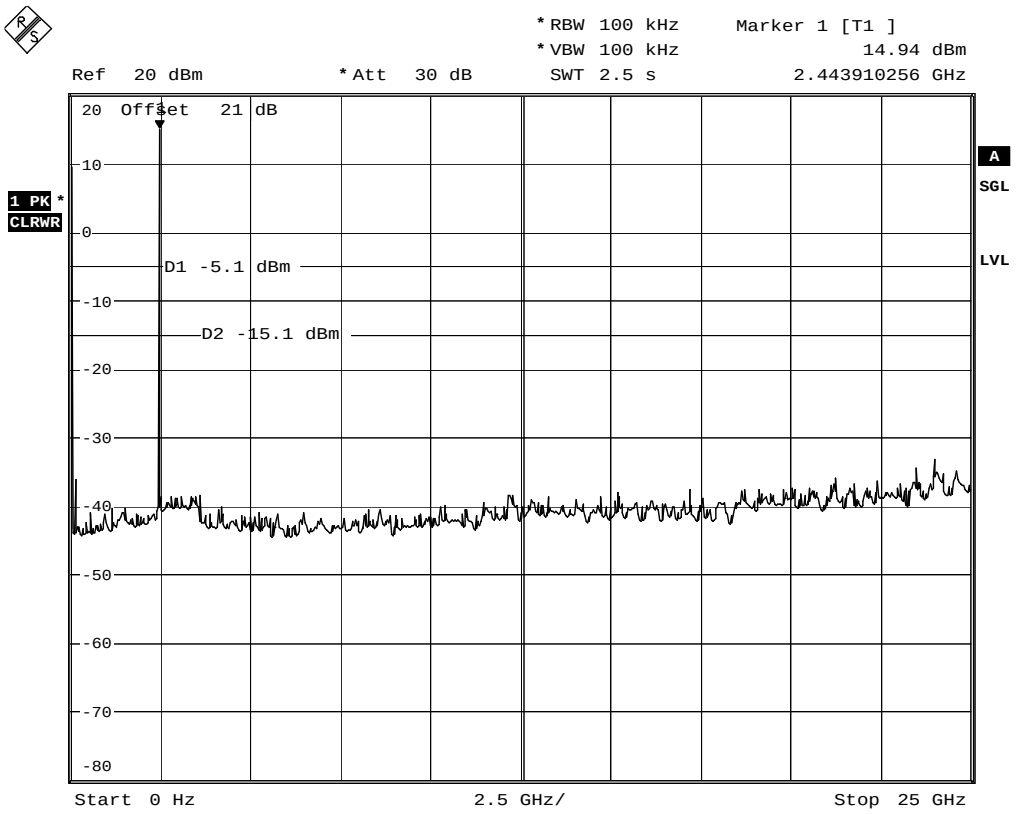
Date: 22.JUN.2005 10:09:07

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Spurious Emissions, Criteria: -20 dBc and -30 dBc
Data Rate: 1 Mbps
Channel 6 – 2437 MHz



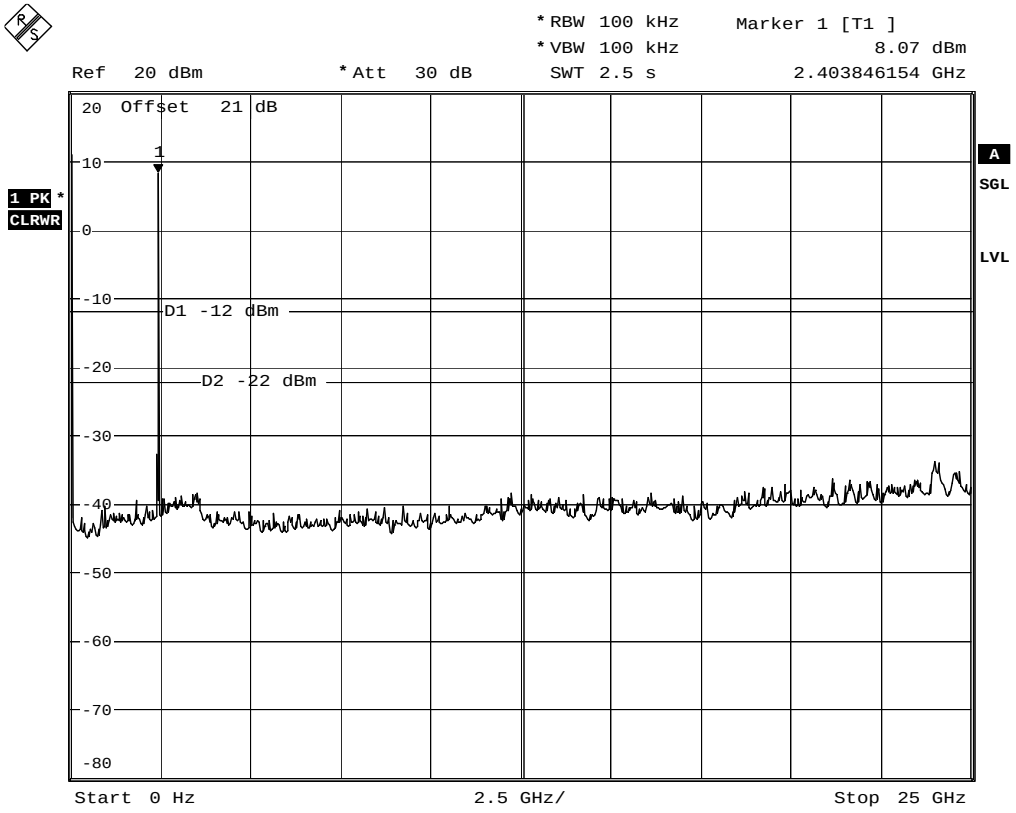
Date: 22.JUN.2005 10:11:14

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Spurious Emissions, Criteria: -20 dBc and -30 dBc
Data Rate: 1 Mbps
Channel 11 – 2462 MHz



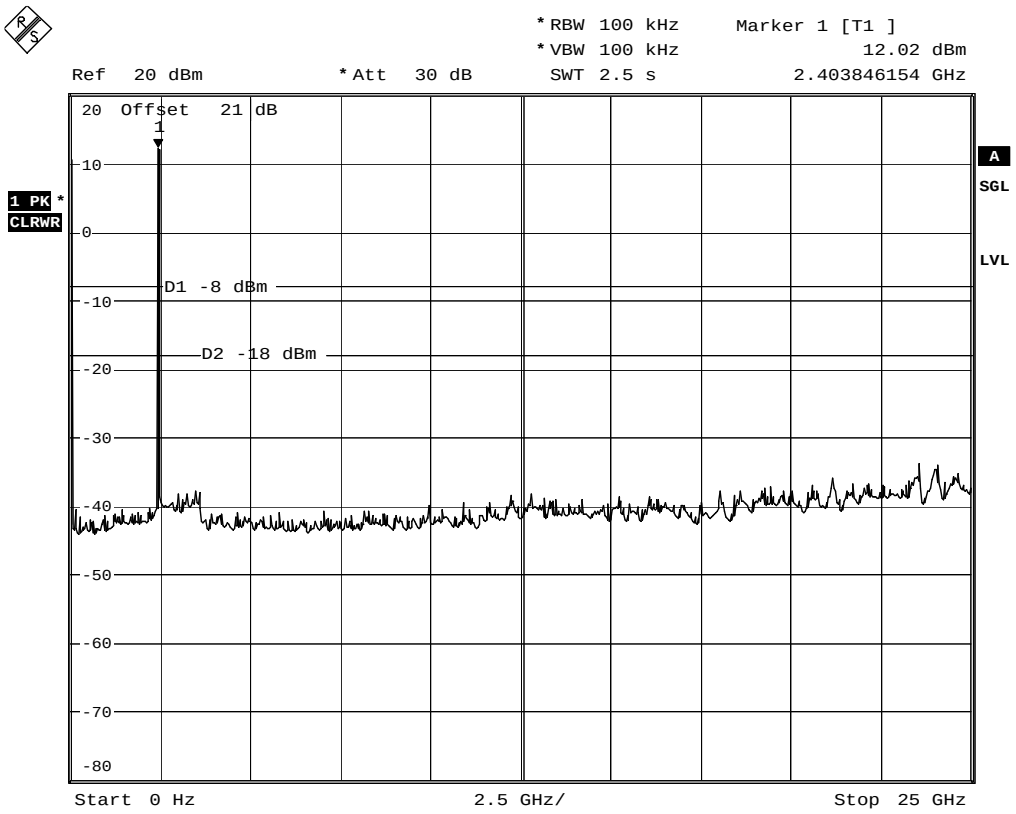
Date: 22.JUN.2005 10:13:52

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Spurious Emissions, Criteria: -20 dBc and -30 dBc
Data Rate: 6 Mbps
Channel 1 – 2412 MHz



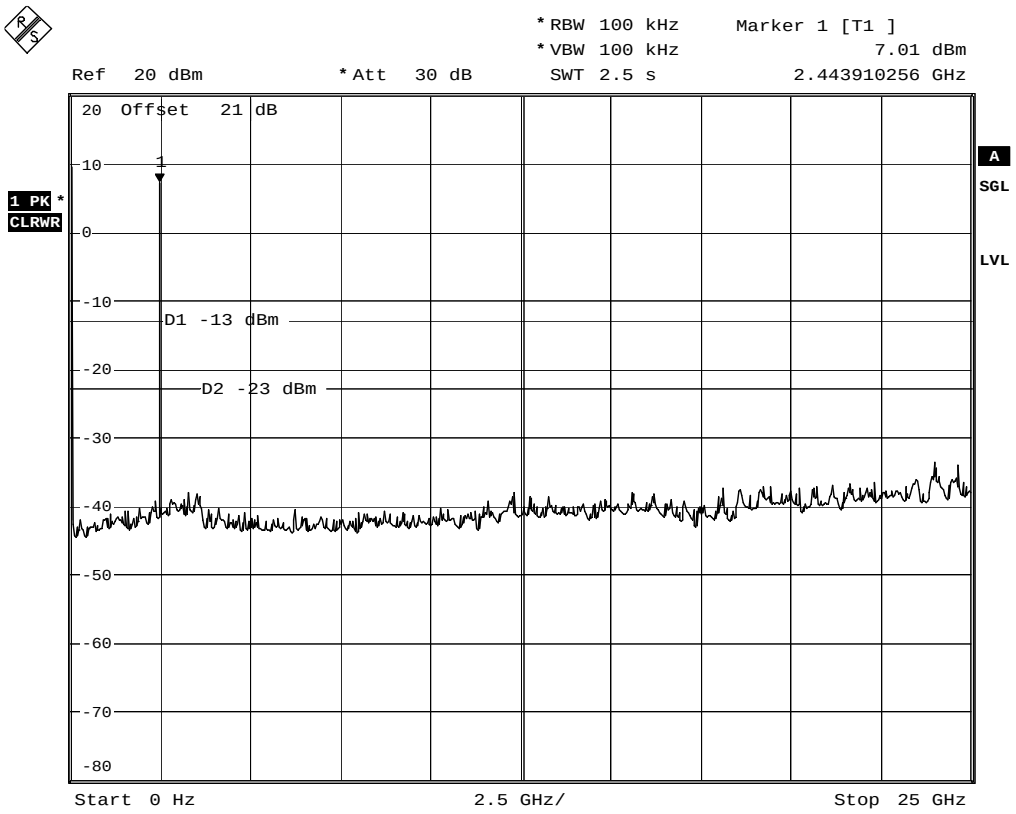
Date: 22.JUN.2005 10:17:34

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Spurious Emissions, Criteria: -20 dBc and -30 dBc
Data Rate: 6 Mbps
Channel 1 – 2437 MHz



Date: 22.JUN.2005 10:21:06

15.247(d) Emissions Not in Restricted Bands
RF Conducted Measurement, Spurious Emissions, Criteria: -20 dBc and -30 dBc
Data Rate: 6 Mbps
Channel 11 – 2462 MHz



Date: 22.JUN.2005 10:25:43

Power Spectral Density

Criteria: Clause 15.247(e) Power Spectral Density for Digitally Modulated Devices

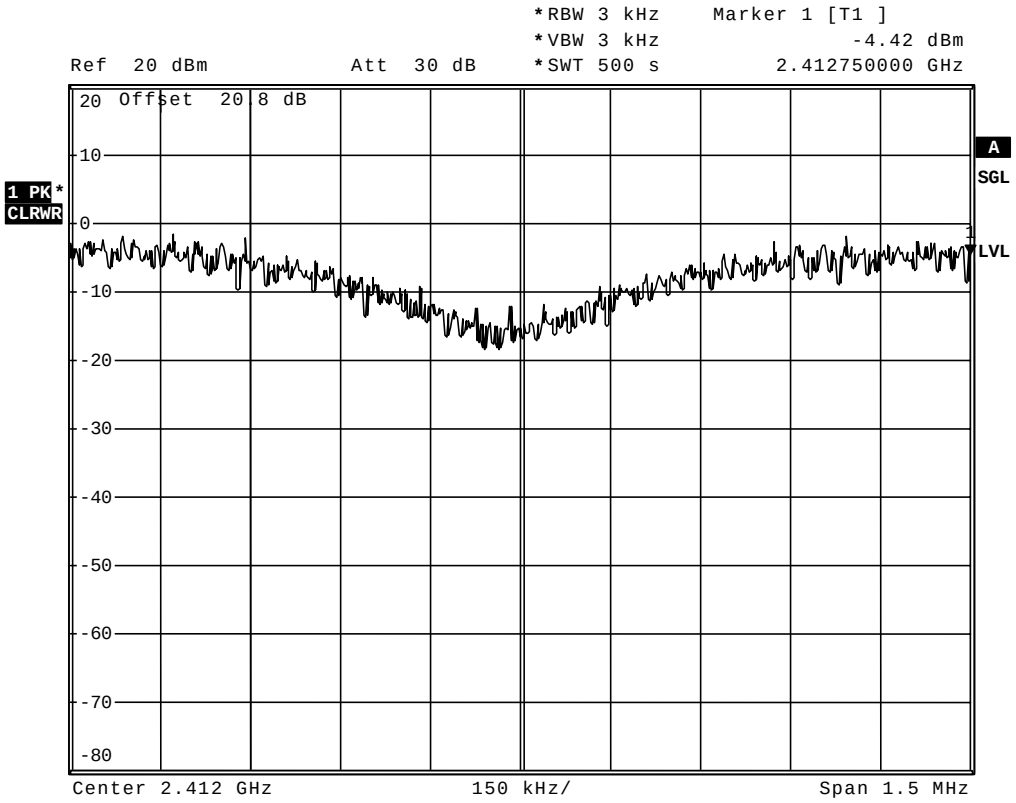
For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

Test Conditions:

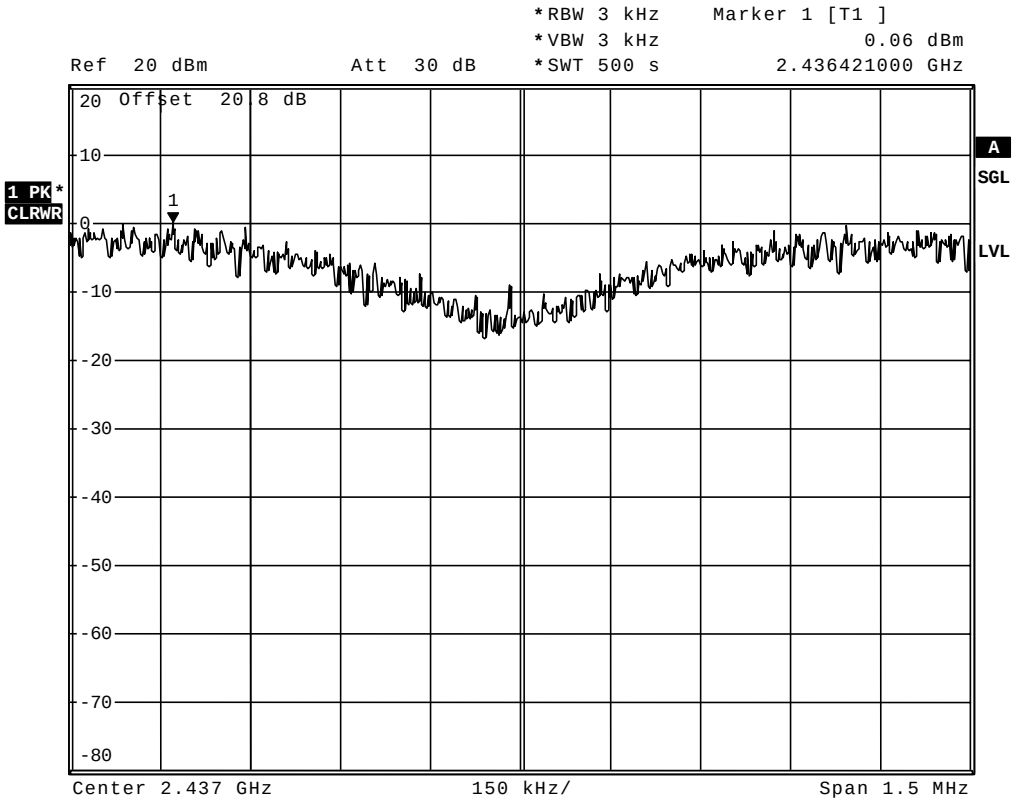
Sample Number:	1	**Temperature:**	22 °C
Date:	May 16, 2005	**Humidity:**	45 %
Modification State:	0	**Tester:**	Roman Kuleba
		Laboratory:	Ottawa

Test Results: See Attached Plots.

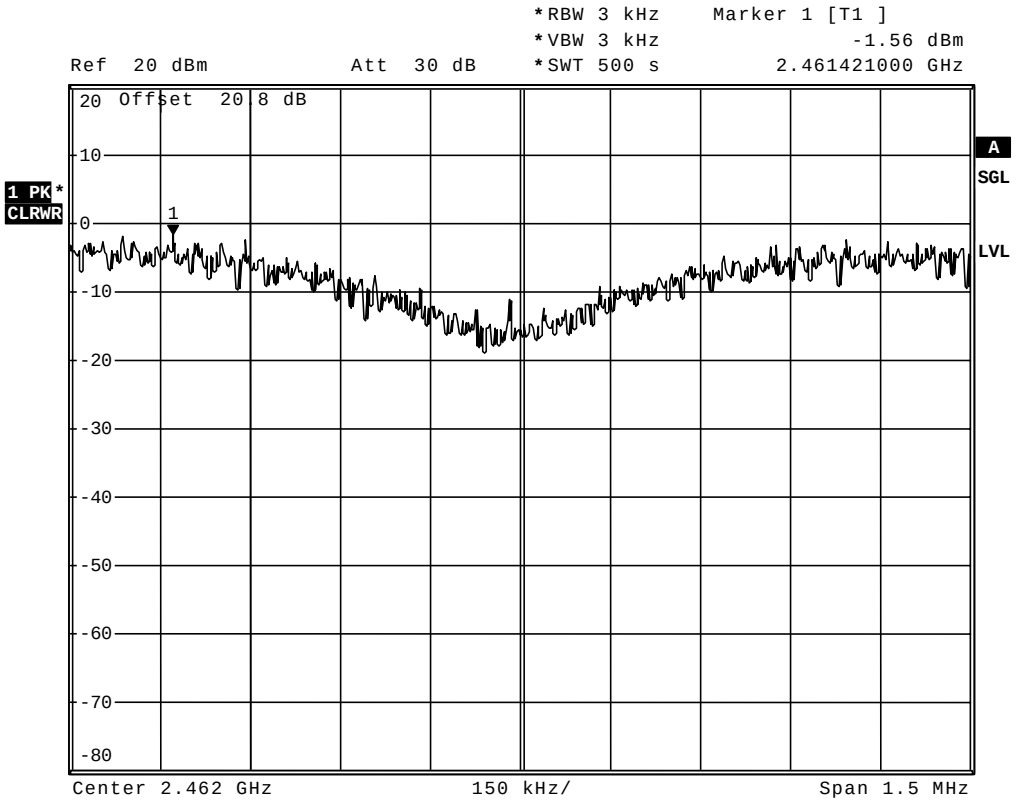
15.247(e) Power Spectral Density
Data Rate: 1 Mbps, Ch 1 - 2412 MHz



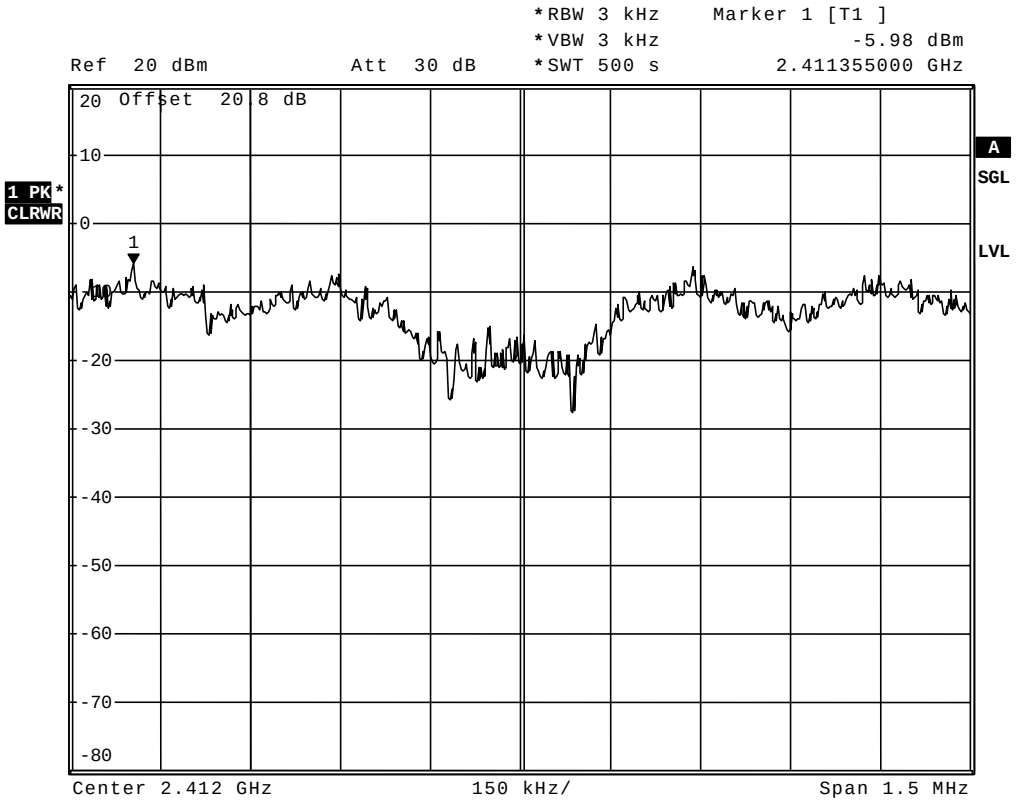
15.247(e) Power Spectral Density
Data Rate: 1 Mbps, Ch 6 - 2437 MHz



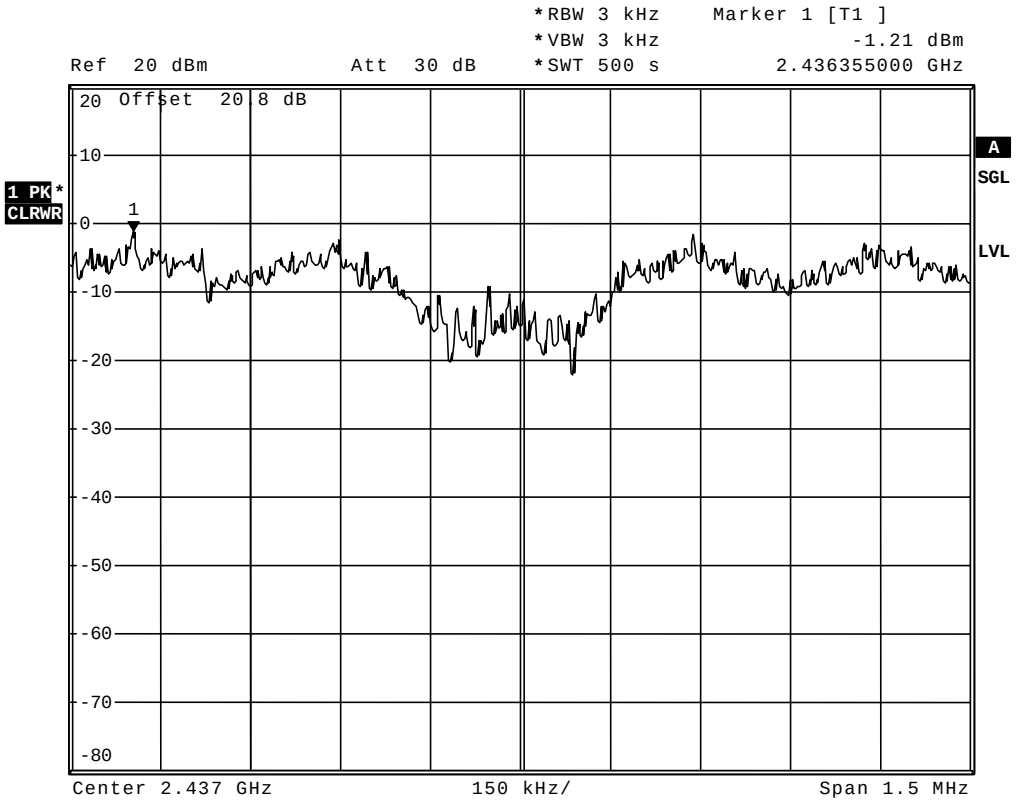
15.247(e) Power Spectral Density
Data Rate: 1 Mbps, Ch 11 - 2462 MHz



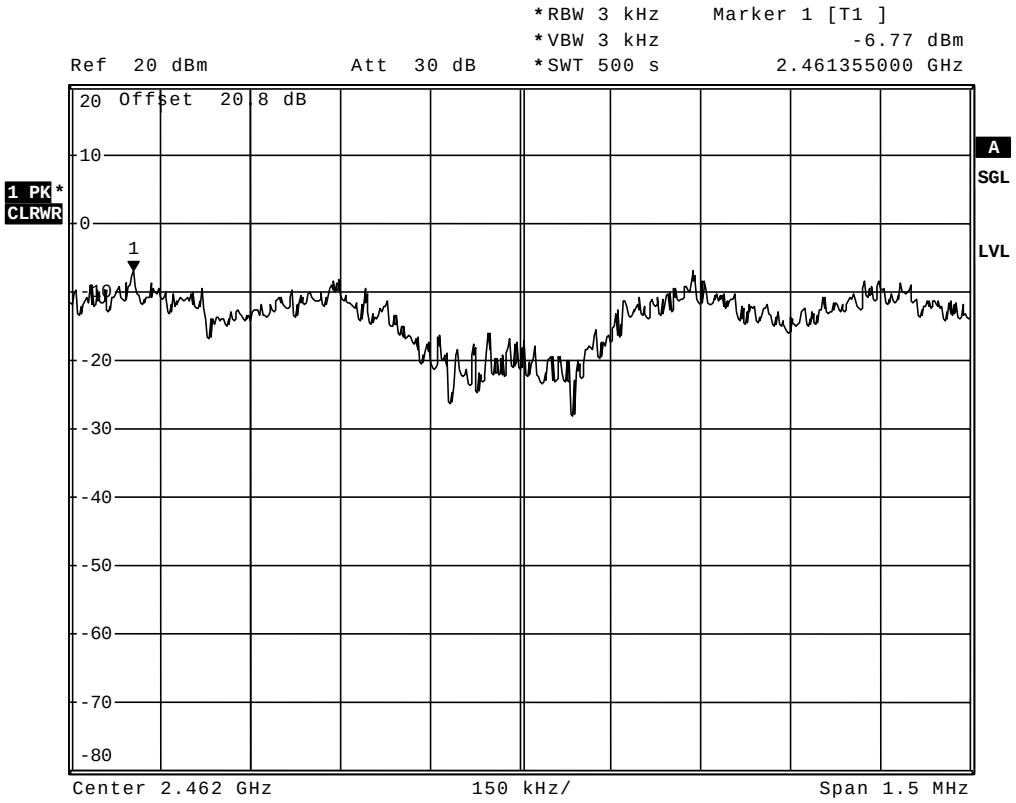
15.247(e) Power Spectral Density
Data Rate: 6 Mbps, Ch 1 - 2412 MHz



15.247(e) Power Spectral Density
Data Rate: 6 Mbps, Ch 6 - 2437 MHz



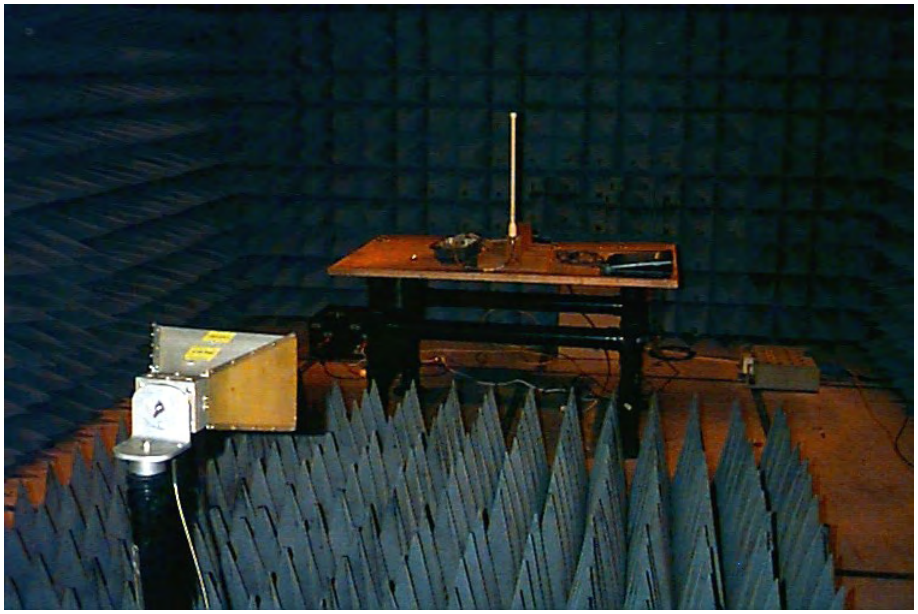
15.247(e) Power Spectral Density
Data Rate: 6 Mbps, Ch 11 - 2462 MHz



Appendix B : Setup Photographs

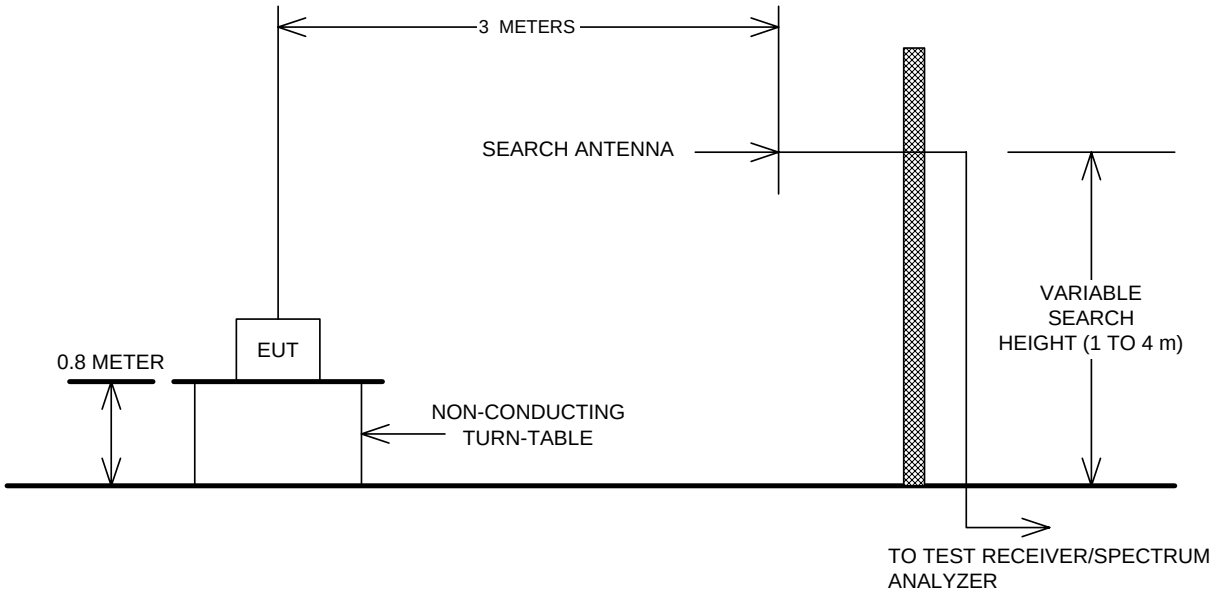
Conducted Emissions Setup:

Spurious Emissions Setup:



Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions



Conducted Emissions