

**TEST REPORT**  
FROM  
**SIEMIC**

For  
WirelessGRID  
To  
FCC Part 90 Subpart Y


Test Report Serial No.:  
SL05020802-ARY


This report supersedes NONE

**Remarks:**

Equipment complied with the specification ☒ [X]  
Equipment did not comply with the specification ☐ [ ]

**This Test Report is Issued Under the Authority of:**

  
.....  
Tested by: Alvin Ilarina, Test Engineer

  
.....  
Reviewed by: Leslie Bai, Lab Manager

Issue date: 20 April 2005

*Equipment Details:*

Manufacturer: AIRAYA, CORP



Registration No. 783147



Industry Canada  
Industrie Canada

Registration No. 4842



Registration No. 2195

This test report may be reproduced in full only.



**Title:** AIRAYA, CORP  
WirelessGRID  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 2 of 51

---

This page has been left blank intentionally.



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 3 of 51

---

## CONTENTS

EXECUTIVE SUMMARY .....	5
1 TECHNICAL DETAILS .....	6
2 TESTS REQUIRED .....	7
3 MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS .....	8
4 TEST INSTRUMENTATION & GENERAL PROCEDURES .....	44
APPENDIX A: EUT TEST CONDITIONS .....	45
APPENDIX B: EXTERNAL PHOTOS.....	46
APPENDIX C: CIRCUIT/BLOCK DIAGRAMS .....	47
APPENDIX D: INTERNAL PHOTOS.....	48
APPENDIX F: PRODUCT DESCRIPTION .....	49
APPENDIX H: FCC LABEL LOCATION.....	50
APPENDIX I: USER MANUAL .....	51



**Title:** AIRAYA, CORP  
WirelessGRID  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 4 of 51

---

This page has been left blank intentionally.



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 5 of 51

---

## **Executive Summary**

The purpose of this test programme was to demonstrate compliance of the AIRAYA, CORP, WirelessGRID against the current FCC Part 90 Subpart Y. The WirelessGRID demonstrated compliance with the FCC Part 90 Subpart Y.

AIRAYA, CORP is the applicant and claimed manufacturer of this tested product. For the detailed description of this product, please refer to the WirelessGRID User Manual.

Below is the photograph of the system that was tested.



The test has demonstrated that this unit complies with stipulated standards.



**Title:** AIRAYA, CORP  
**WirelessGRID**  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 6 of 51

---

## **1 Technical Details**

Purpose	Compliance testing of WirelessGRID with FCC Part 90 Subpart Y
Applicant / Client	<b>AIRAYA, CORP</b> 637 Adair Court Morgan Hill, CA 95037
Manufacturer	AIRAYA, CORP
Laboratory performing the tests	SIEMIC Labs 2206 Ringwood Avenue San Jose, CA 95131
Test location(s)	SIEMIC Labs 2206 Ringwood Avenue San Jose, CA 95131
Test report reference number	SL05020802-ARY
Date EUT received	13 Mar 2005
Standard applied	FCC Part 90 Subpart Y
Dates of test (from – to)	13 Mar 2005 to 19 Apr 2005
No of Units:	1
Equipment Category:	Licensed Non-Broadcast Station Transmitter
Trade/Product Name:	WirelessGRID
Type/Model Name/No:	AI108
Technical Variants:	None
FCC ID No.	QDE-GRID



**Title:** AIRAYA, CORP  
**WirelessGRID**  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 7 of 51

## 2 Tests Required

The product was tested in accordance with the following specifications.  
The test results recorded in this Test Report are exclusively referred to the tested sample(s).

Test Standard	Description	Pass / Fail
47 CFR Part 90, Subpart Y		
2.1046; 90.1215(a)	Peak Output Power	Pass
2.1046; 90.1215(a)	Peak Power Spectral Density	Pass
2.1049; 90.210(m)	Occupied Bandwidth; Emissions Mask	Pass
2.1051; 90.210(m)	Spurious Emissions at Antenna Terminals	Pass
2.1053; 90.210(m)	Radiated Spurious Emissions	Pass
2.1055(a)(1); 90.213	Frequency Stability; Temperature Variations	Pass
2.1055(d)(1); 90.213	Frequency Stability; Voltage Variations	Pass
TIA/EIA-603-A-2001		
ANSI C63.4: 2001		

*Notes: Deviations to above standards are outlined in specific test sections if applicable.  
Cable loss and external attenuation are compensated for in the measurement system when applicable.*



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 8 of 51

---

### **3 Measurements, Examinations and Derived Results**

#### **3.1 General observations**

Equipment serial number(s)		
Module:	Part number:	Serial number:
WirelessGRID	AI108	01966





Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 9 of 51

---

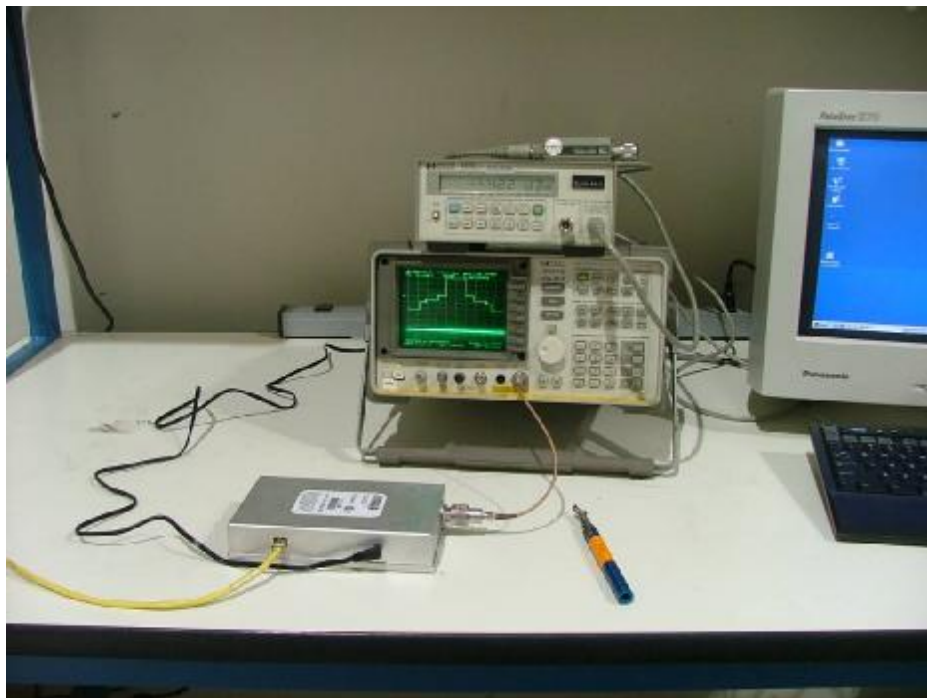
## 3.2 Test Results

### 3.2.1 Peak Output Power

Requirement(s): 47 CFR §2.1046 and §90.1215(a)

**Procedures:** The peak output power was measured at the antenna terminal using Acceptable Procedures: Peak conducted transmit output power outlined in FCC DA 02-2138 Appendix A. The Average Power measurements were taken using a power meter with a sensor capable of measuring the entire bandwidth of the signal. The measurements were made for the 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, and 50MHz bandwidths at the center frequency of the channel.

**Setup:**





Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 10 of 51

---

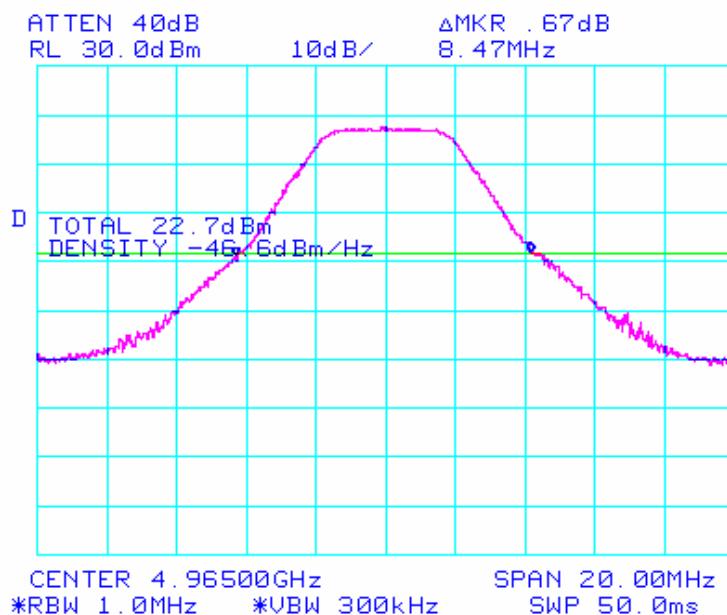
**Results:**

Plot #	Frequency (MHz)	Channel Bandwidth (MHz)	Peak Power (dBm)	Peak Limit (dBm)	Average Power(dBm)
1	4965	5	22.7	27	18.8
2	4965	10	25.1	30	21.2
3	4965	15	26.3	31.8	23.1
4	4965	20	27.5	33	22.8
5	4965	30	26.5	33	22.7
6	4965	40	26.8	33	22.8
7	4965	50	26.8	33	22.7

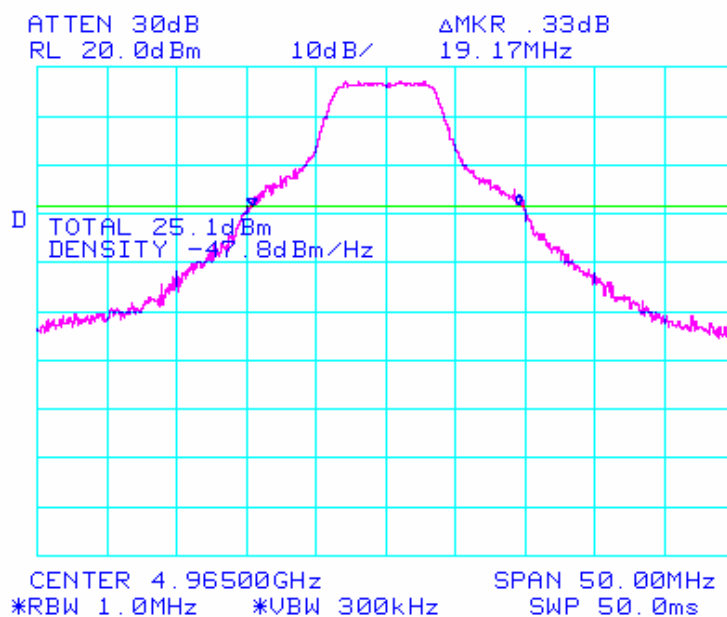


Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 11 of 51



Plot 1: Peak Power 5MHz Bandwidth



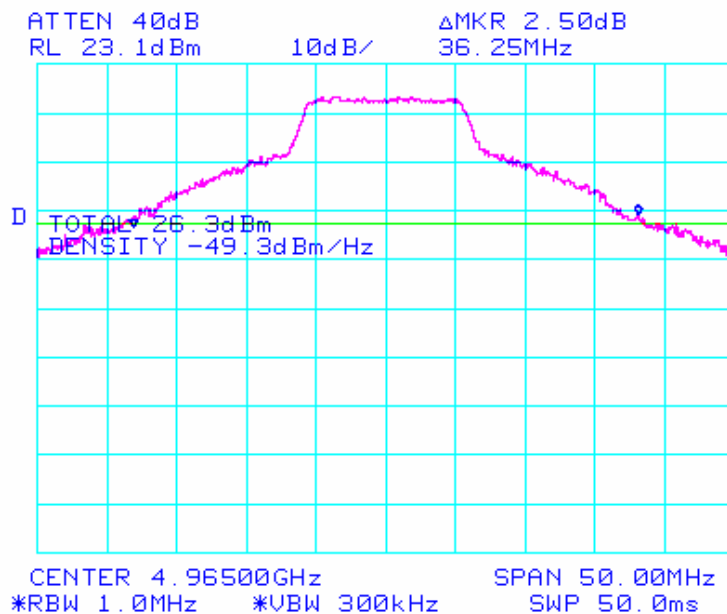
Plot 2: Peak Power 10MHz Bandwidth



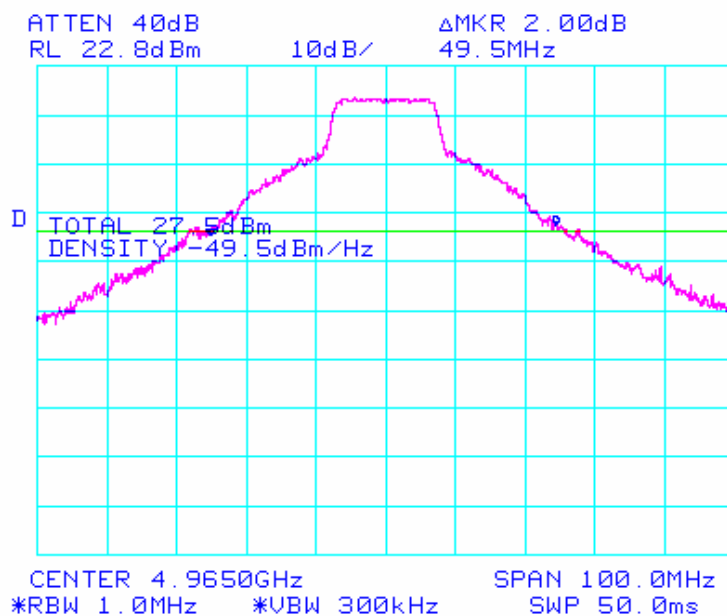
Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

SL05020802-ARY  
20 April 2005  
12 of 51



Plot 3: Peak Power 15MHz Bandwidth

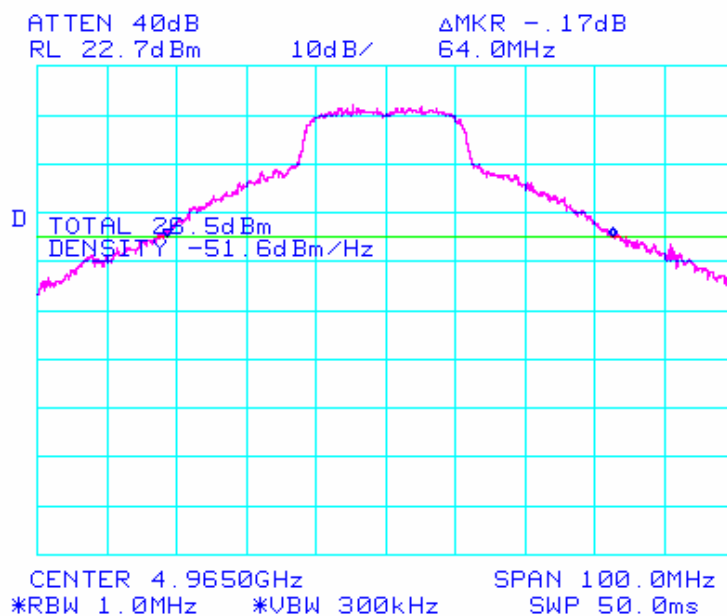


Plot 4: Peak Power 20MHz Bandwidth

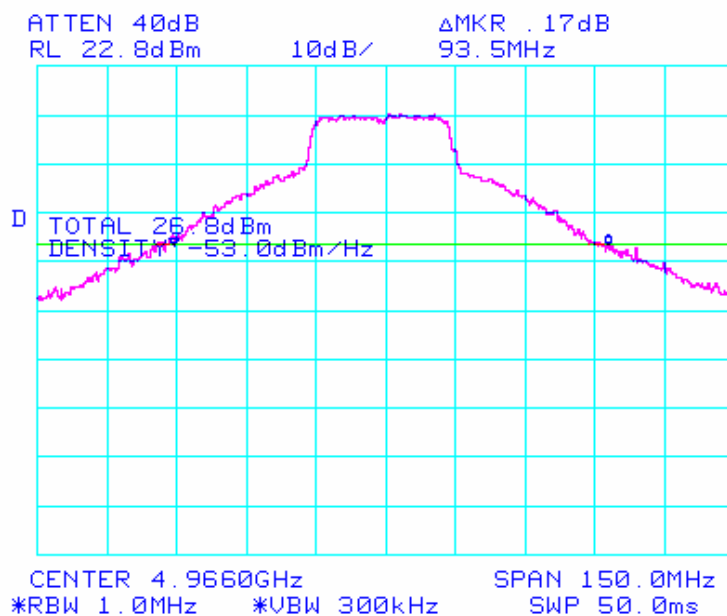


Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 13 of 51



Plot 5: Peak Power 30MHz

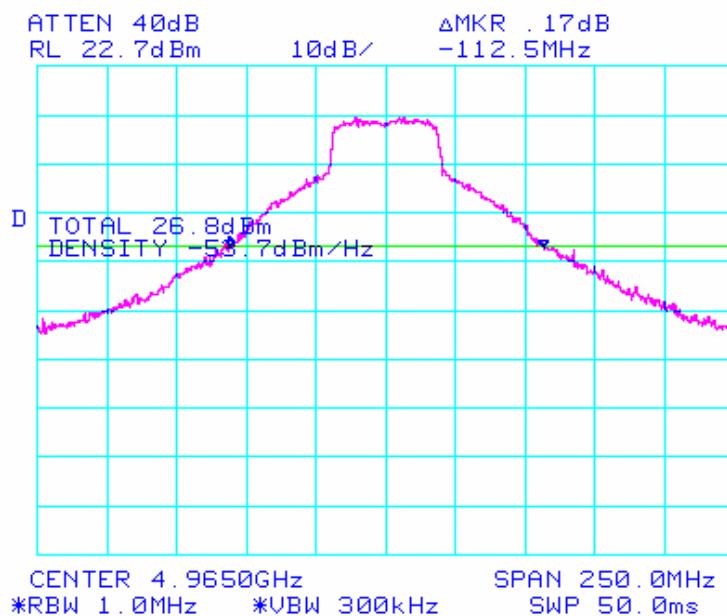


Plot 6: Peak Power 40MHz



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 14 of 51



Plot 7: Peak Power 50MHz

Tested By: Alvin Ilarina

Date Tested: 18 Apr 2005



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 15 of 51

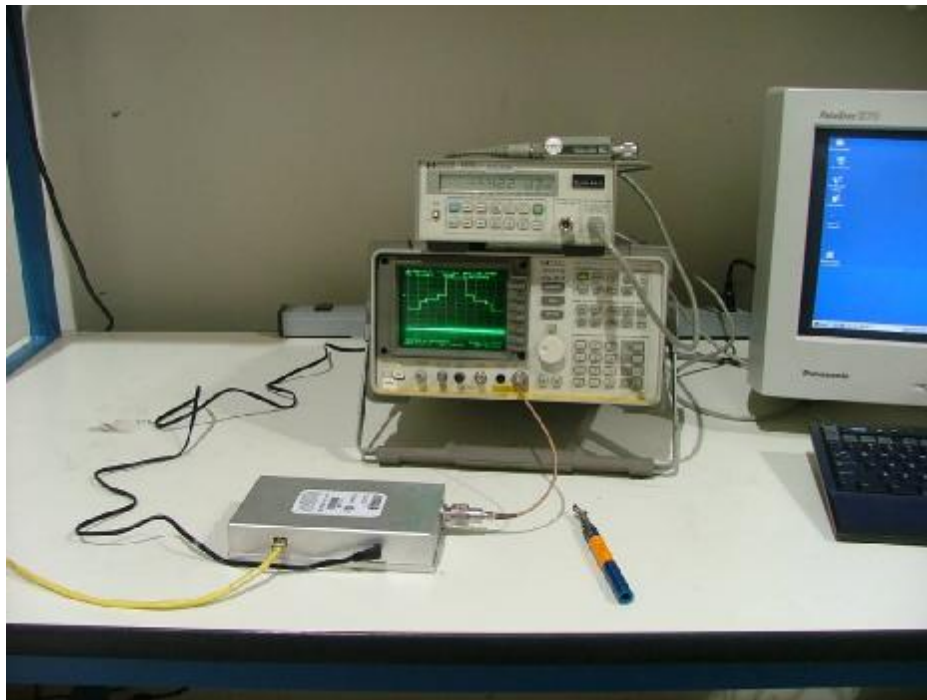
---

### 3.2.2 Peak Power Spectral Density

Requirement(s): 47 CFR §2.1046 and §90.1215(a)

**Procedures:** The peak power spectral density measured at the antenna terminal using a spectrum analyzer. The measurements were made for the 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, and 50MHz bandwidths at the center frequency of the channel.

**Setup:**





Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 16 of 51

---

**Results:**

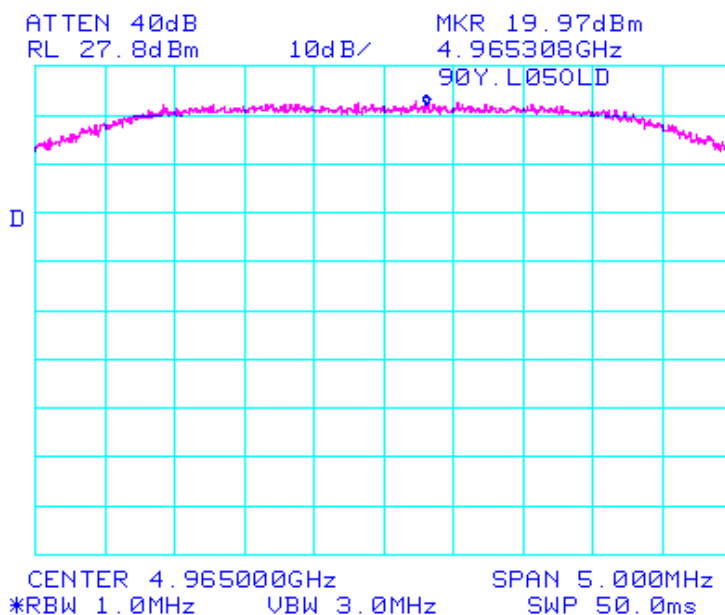
Plot #	Frequency (MHz)	Channel Bandwidth (MHz)	PPSD (dBm)	Limit (dBm)
8	4965	5	19.97	20
9	4965	10	19.83	20
10	4965	15	20.0	20
11	4965	20	18.5	20
12	4965	30	16.53	20
13	4965	40	15.6	20
14	4965	50	14.7	20



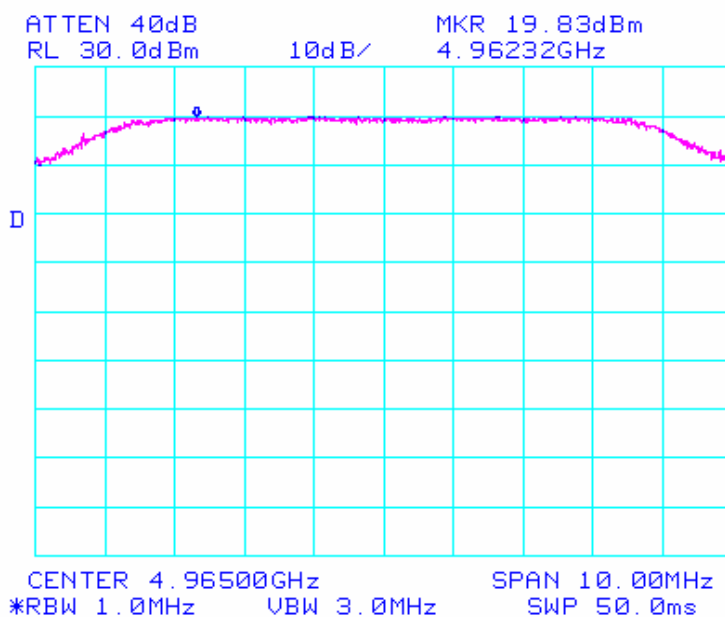


Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 17 of 51



Plot 8: Peak Power Spectral Density 5MHz Bandwidth



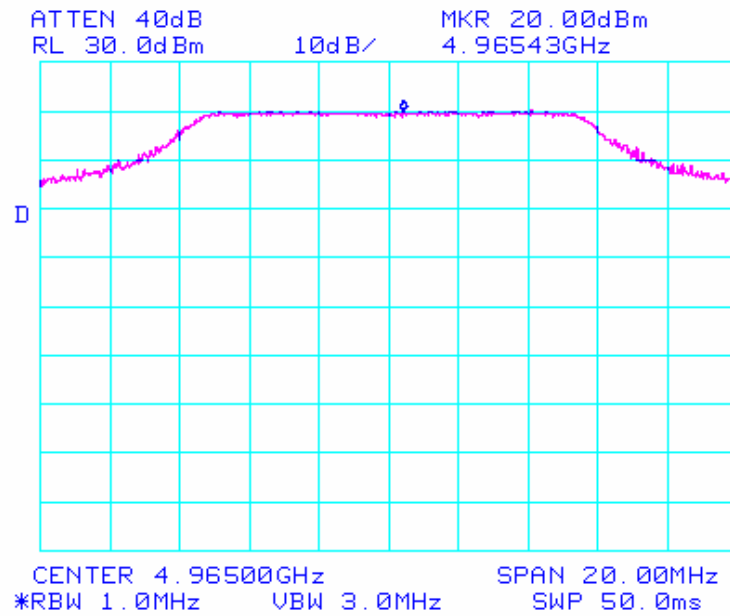
Plot 9: Peak Power Spectral Density 10MHz Bandwidth



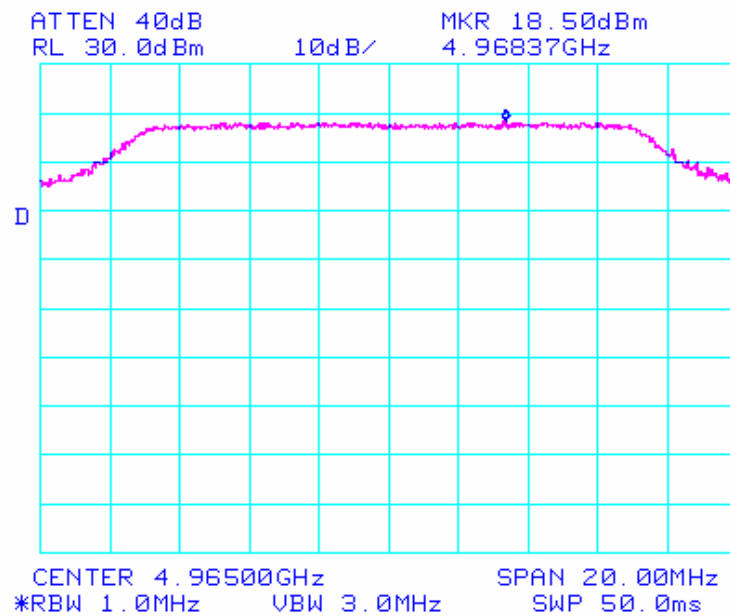
Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

SL05020802-ARY  
20 April 2005  
18 of 51



Plot 10: Peak Power Spectral Density 15MHz Bandwidth

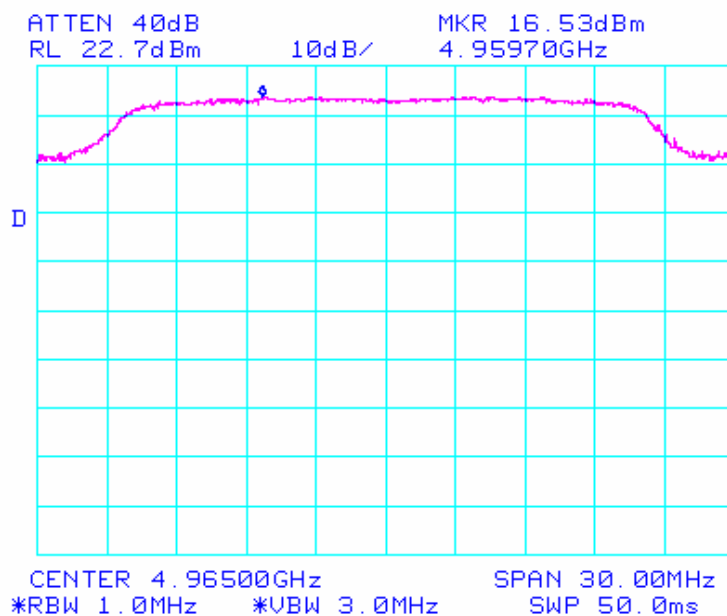


Plot 11: Peak Power Spectral Density 20MHz Bandwidth

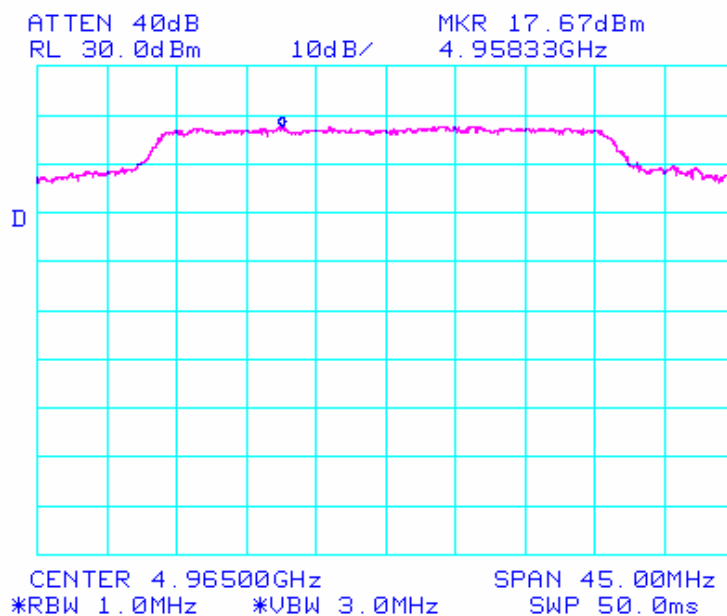


Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 19 of 51



Plot 12: Peak Power Spectral Density 30MHz Bandwidth

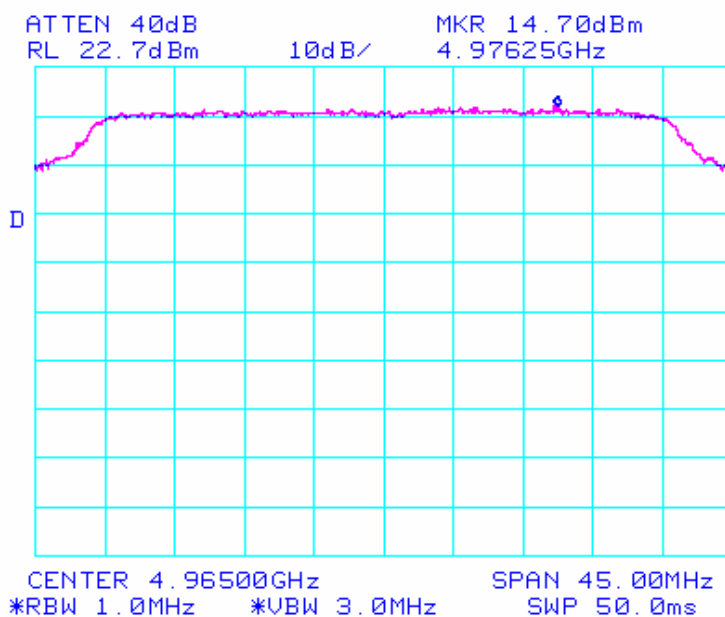


Plot 13: Peak Power Spectral Density 40MHz Bandwidth



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 20 of 51



Plot 14: Peak Power Spectral Density 50MHz Bandwidth

Tested By: Alvin Ilarina

Date Tested: 18 Apr 2005



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 21 of 51

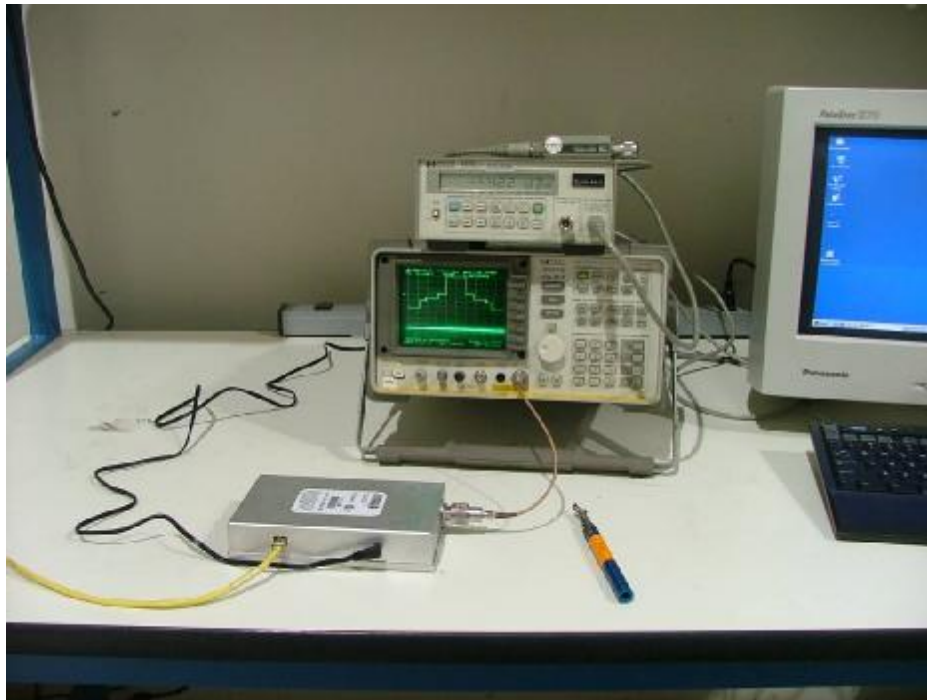
---

### 3.2.3 Occupied Bandwidth; Emission Mask

Requirement(s): 47 CFR §2.1049 and §90.210(l)

**Procedures:** The Emission Masks were measured at the antenna terminal using a spectrum analyzer. The measurements were made for the 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, and 50MHz bandwidths at the center frequency of the channel.

**Setup:**





**Title:** AIRAYA, CORP  
**WirelessGRID**  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 22 of 51

---

**Results:**

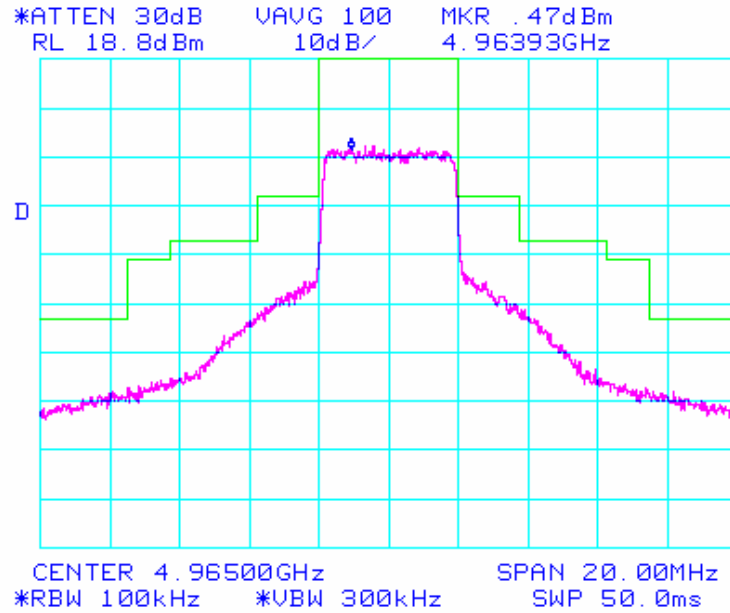
<b>Plot #</b>	<b>Frequency (MHz)</b>	<b>Channel Bandwidth (MHz)</b>	<b>Pass/Fail</b>
15	4965	5	Pass
16	4965	10	Pass
17	4965	15	Pass
18	4965	20	Pass
19	4965	30	Pass
20	4965	40	Pass
21	4965	50	Pass



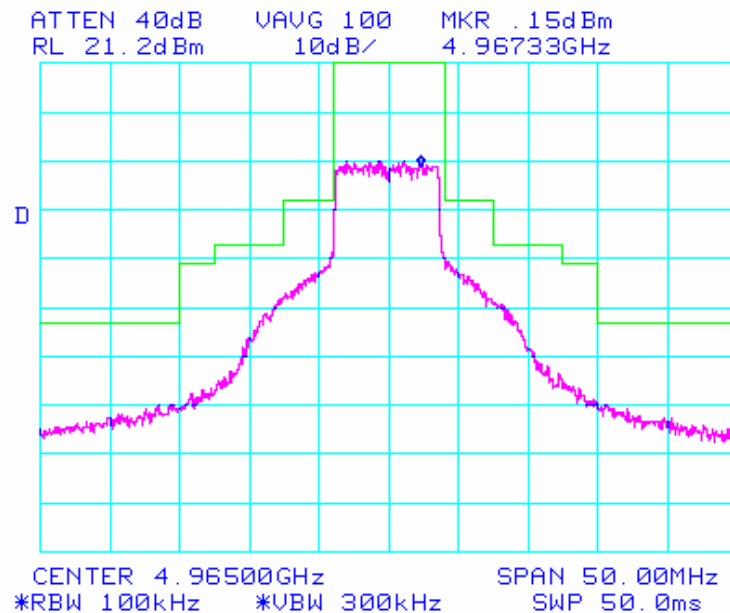
Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

SL05020802-ARY  
20 April 2005  
23 of 51



Plot 15: Emission Mask L – 5MHz Bandwidth



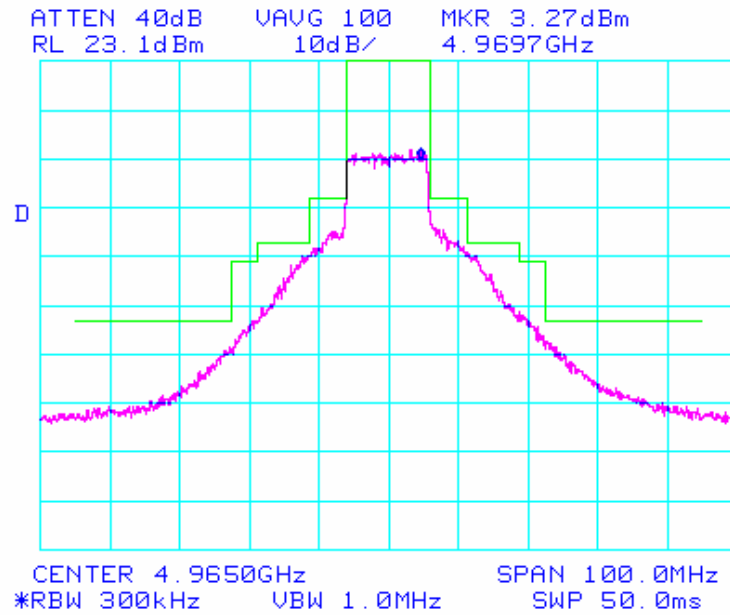
Plot 16: Emission Mask L – 10MHz Bandwidth



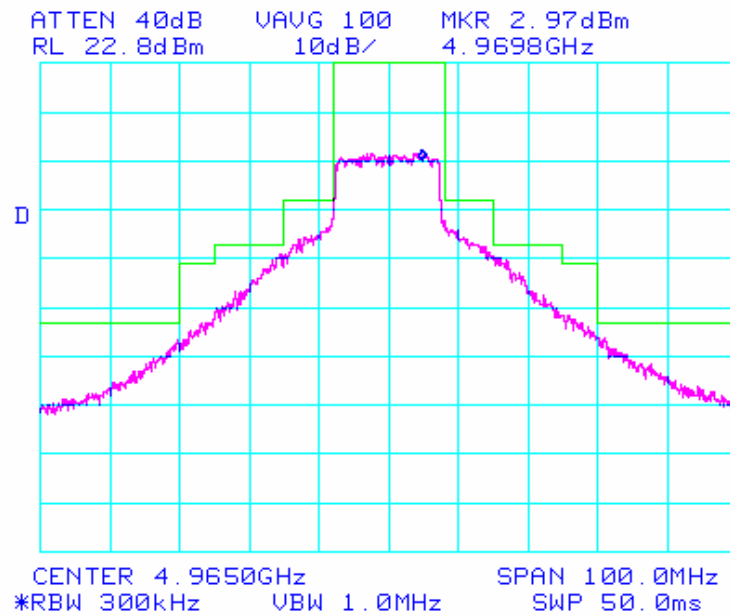
Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

SL05020802-ARY  
20 April 2005  
24 of 51



**Plot 17: Emission Mask L – 15MHz Bandwidth**



**Plot 18: Emission Mask L – 20MHz Bandwidth**

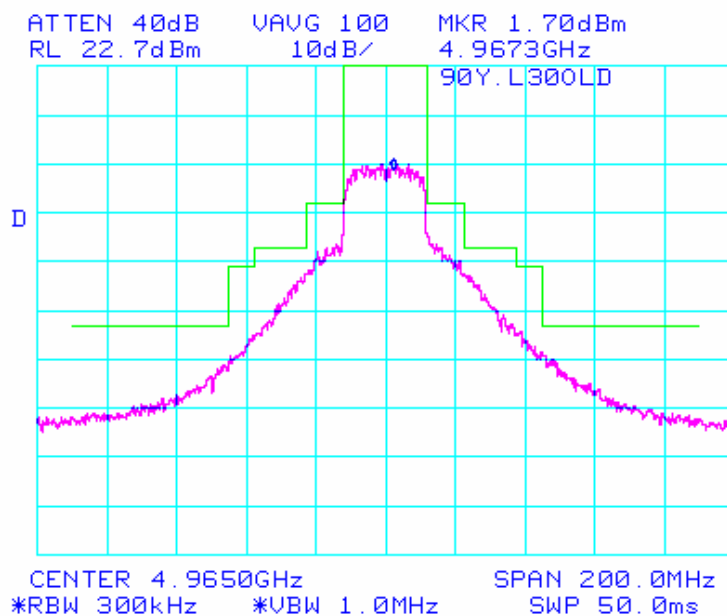




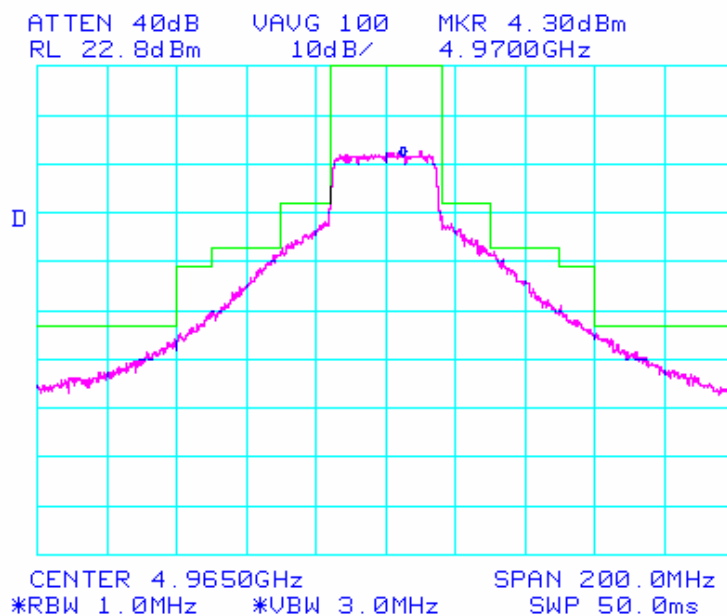
Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

SL05020802-ARY  
20 April 2005  
25 of 51



Plot 19: Emission Mask L – 30MHz Bandwidth



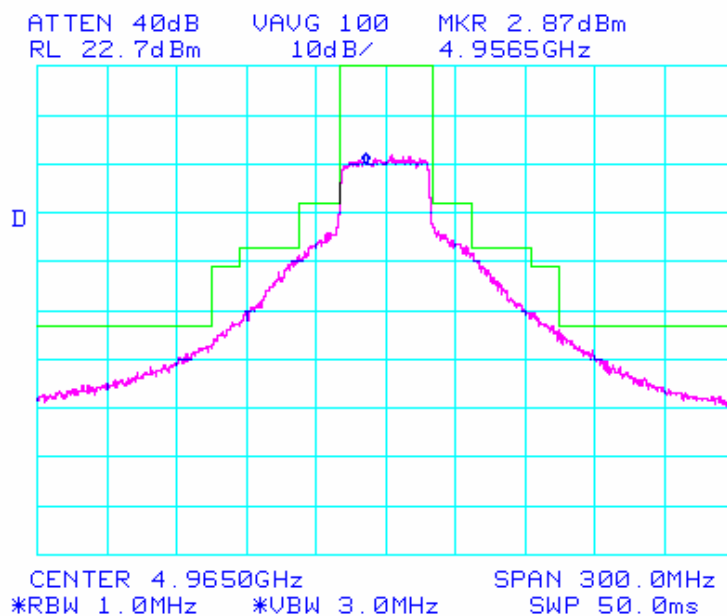
Plot 20: Emission Mask L – 40MHz Bandwidth



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

SL05020802-ARY  
20 April 2005  
26 of 51



Plot 21: Emission Mask L – 50MHz Bandwidth

Tested By: Alvin Ilarina

Date Tested: 18 Apr 2005



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 27 of 51

---

### 3.2.4 Spurious Emissions at Antenna Terminals

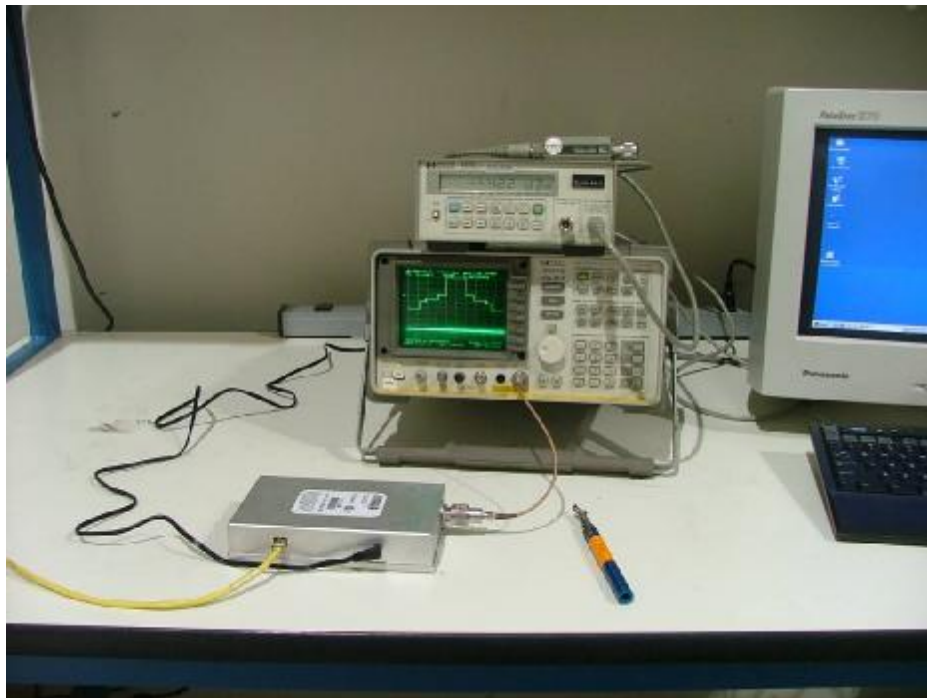
Requirement(s): 47 CFR §2.1051 and §90.210(l)

**Procedures:** The spurious emissions at the antenna terminal as measured at the antenna terminal using a spectrum analyzer. The measurements were made for the 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, and 50MHz bandwidths at the center frequency of the channel.

The spurious limit was determined by:

Measured Average Output Power of EUT – 53 dBm/MHz

**Setup:**





**Title:** AIRAYA, CORP  
**WirelessGRID**  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 28 of 51

---

**Results:**

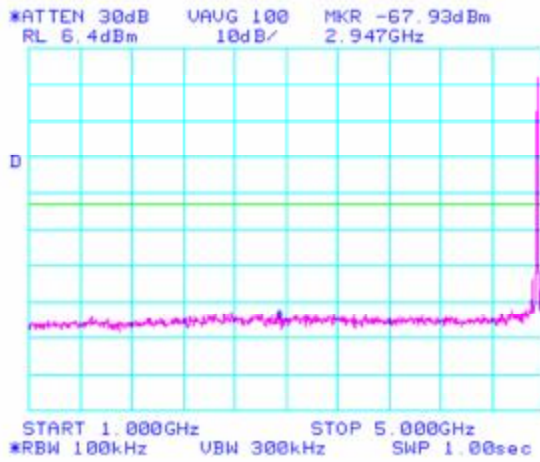
<b>Plots #</b>	<b>Frequency (MHz)</b>	<b>Channel Bandwidth (MHz)</b>	<b>Pass/Fail</b>
22 to 26	4965	5	Pass
27 to 31	4965	10	Pass
32 to 36	4965	15	Pass
37 to 41	4965	20	Pass
42 to 46	4965	30	Pass
47 to 51	4965	40	Pass
52 to 56	4965	50	Pass



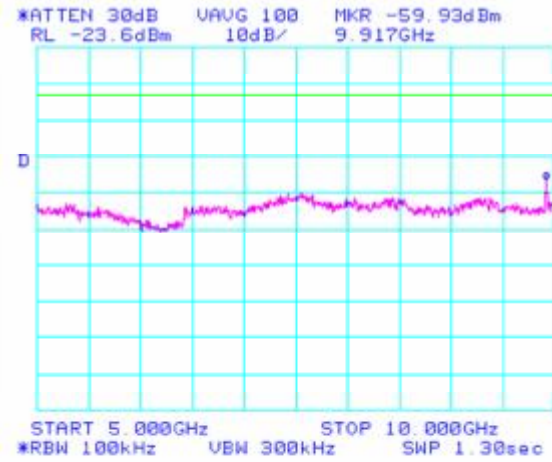
Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

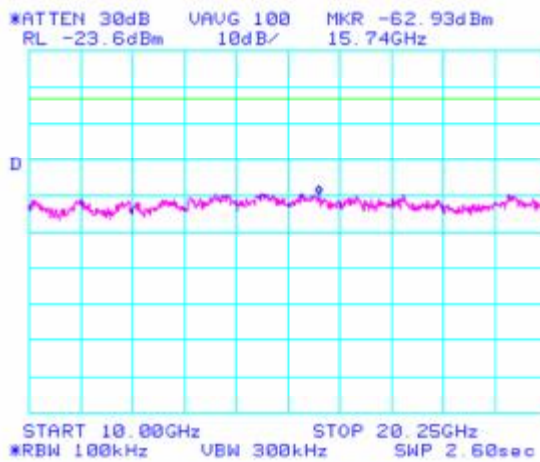
SL05020802-ARY  
20 April 2005  
29 of 51



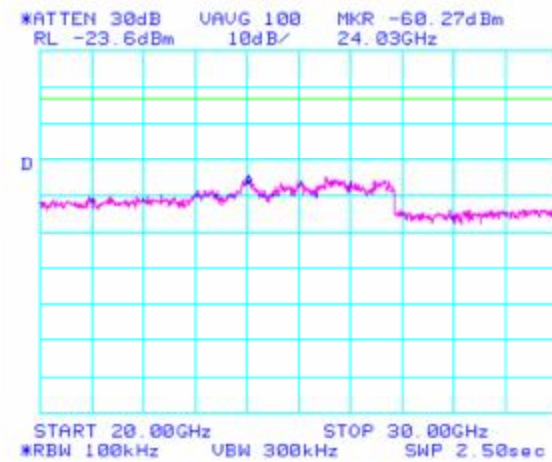
Plot 22: Conducted Spurious 5MHz BW 1 of 5



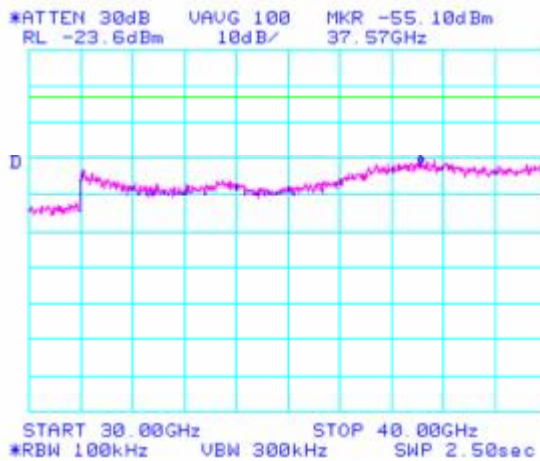
Plot 23: Conducted Spurious 5MHz BW 2 of 5



Plot 24: Conducted Spurious 5MHz BW 3 of 5



Plot 25: Conducted Spurious 5MHz BW 4 of 5



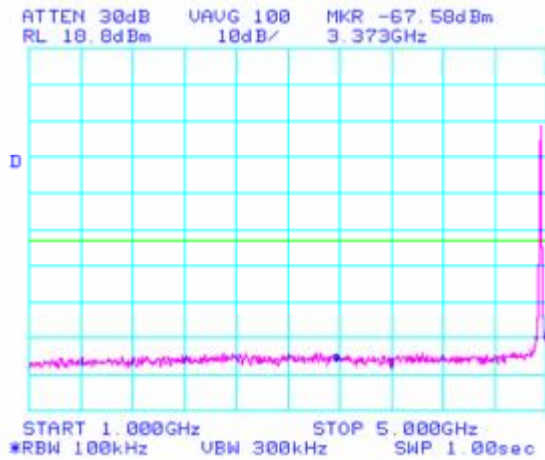
Plot 26: Conducted Spurious 5MHz BW 5 of 5



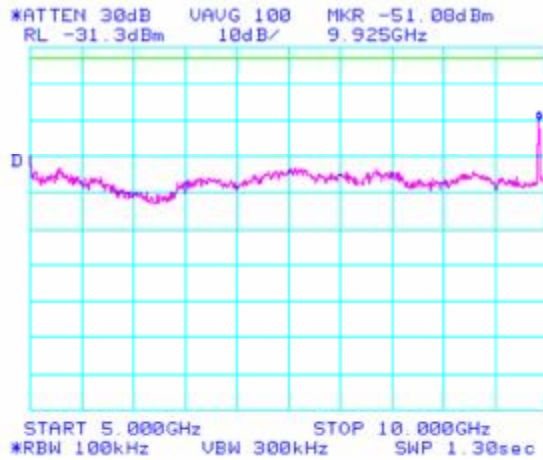
Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial#  
Issue Date  
Page

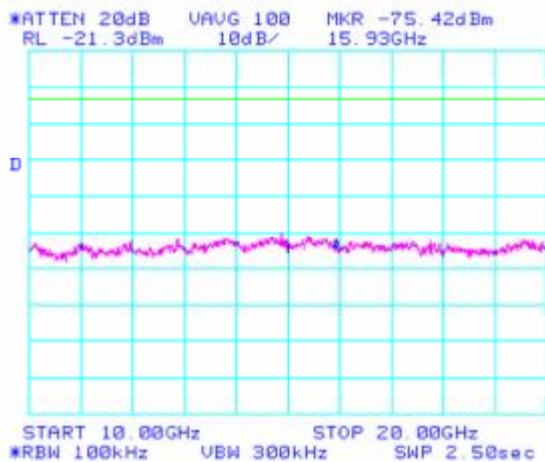
SL05020802-ARY  
20 April 2005  
30 of 51



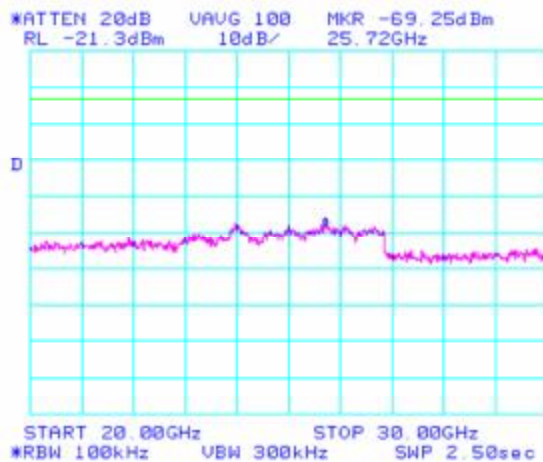
Plot 27: Conducted Spurious 10MHz BW 1 of 5



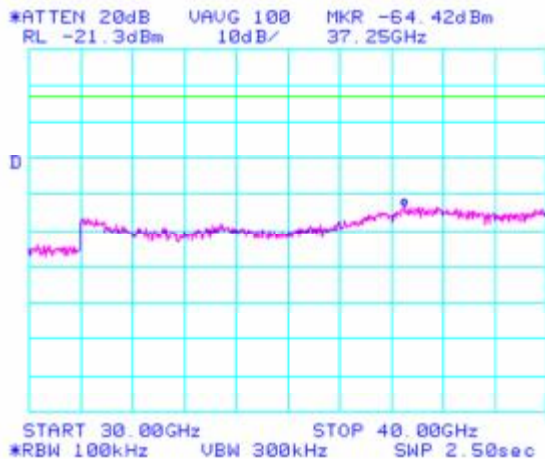
Plot 28: Conducted Spurious 10MHz BW 2 of 5



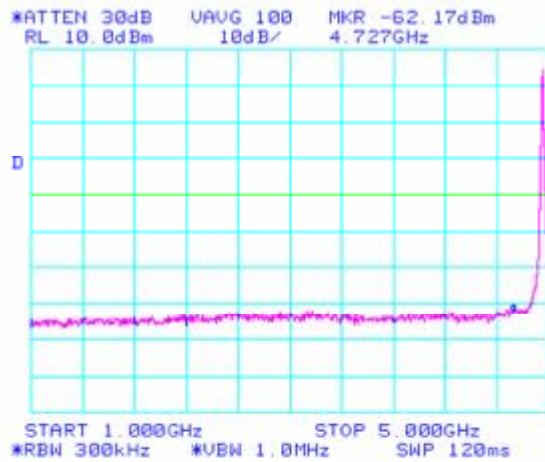
Plot 29: Conducted Spurious 10MHz BW 3 of 5



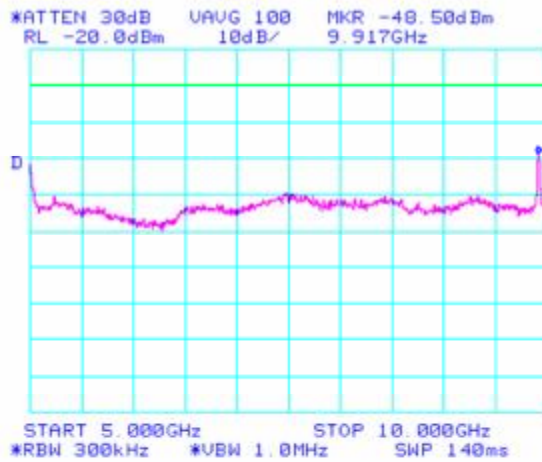
Plot 30: Conducted Spurious 10MHz BW 4 of 5



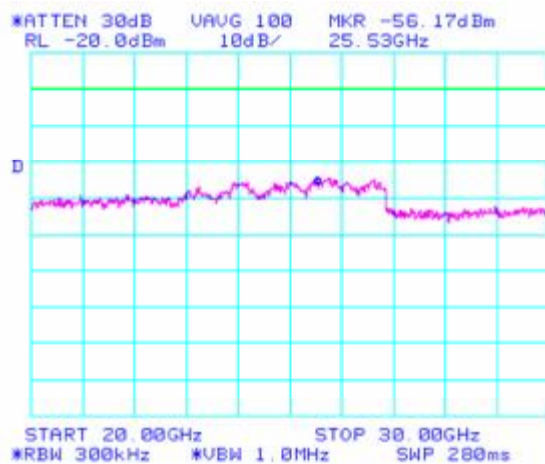
Plot 31: Conducted Spurious 10MHz BW 5 of 5



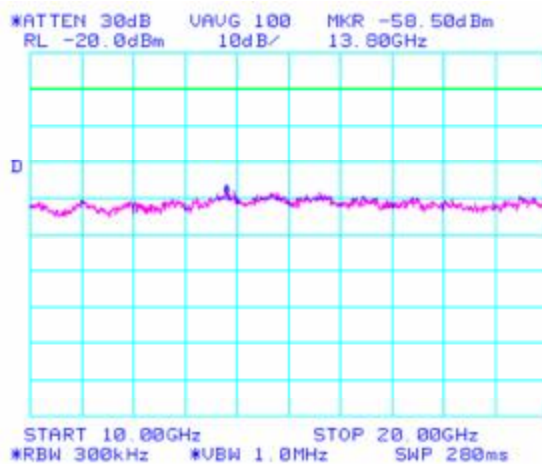
Plot 32: Conducted Spurious 15MHz BW 1 of 5



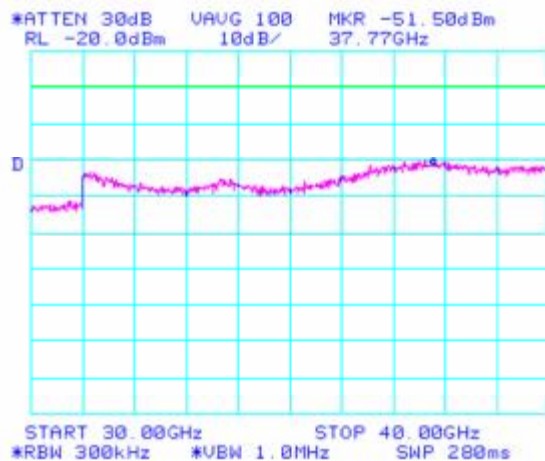
Plot 33: Conducted Spurious 15MHz BW 2 of 5



Plot 34: Conducted Spurious 15MHz BW 3 of 5

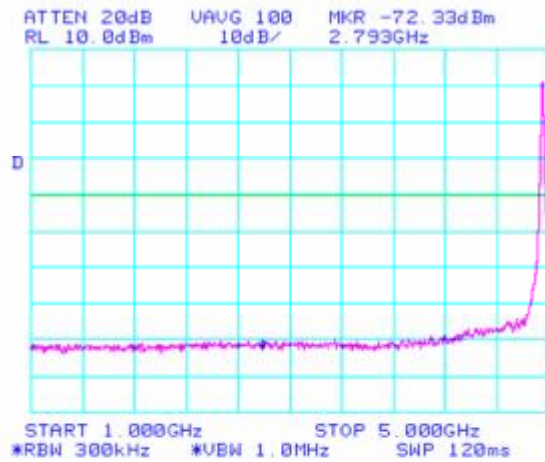


Plot 35: Conducted Spurious 15MHz BW 4 of 5

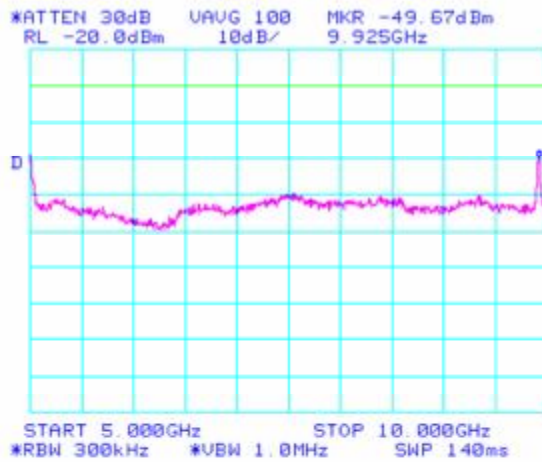


Plot 36: Conducted Spurious 15MHz BW 5 of 5

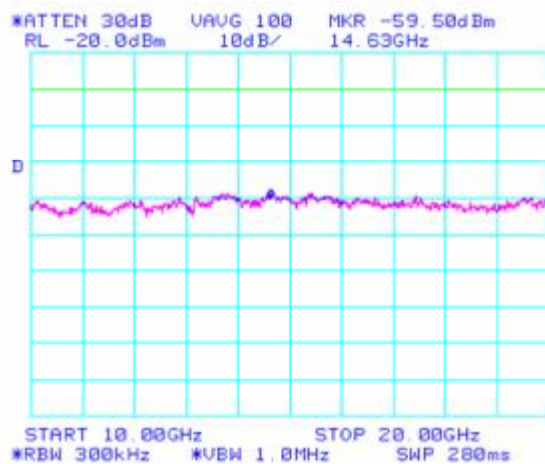




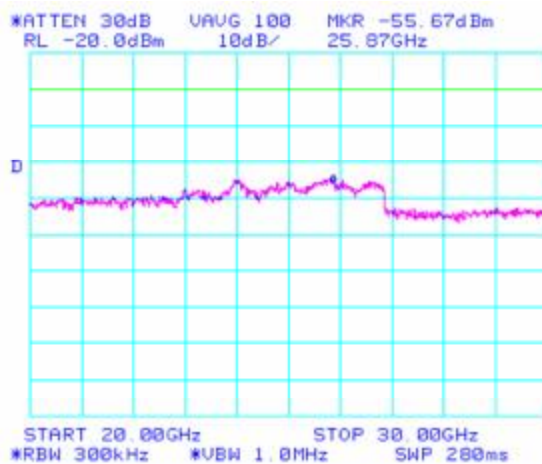
Plot 37: Conducted Spurious 20MHz BW 1 of 5



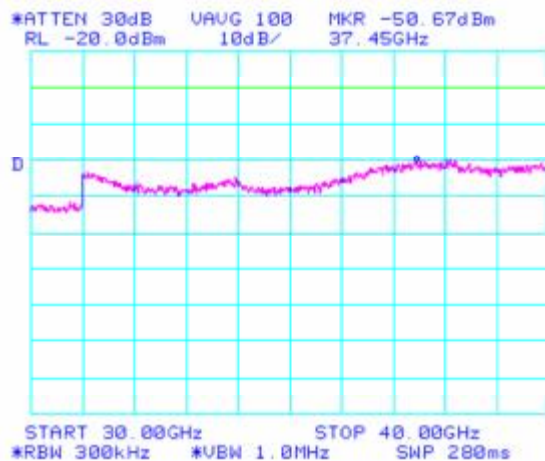
Plot 38: Conducted Spurious 20MHz BW 2 of 5



Plot 39: Conducted Spurious 20MHz BW 3 of 5

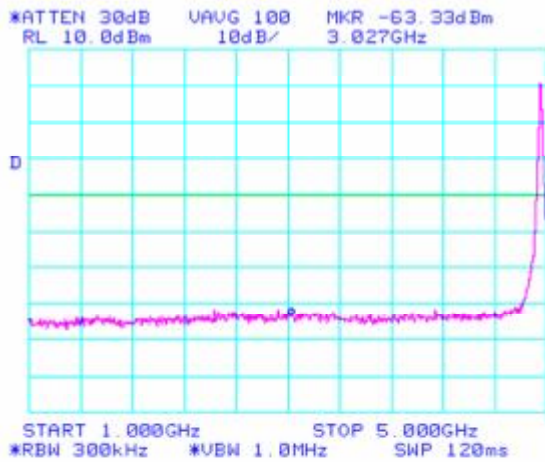


Plot 40: Conducted Spurious 20MHz BW 4 of 5

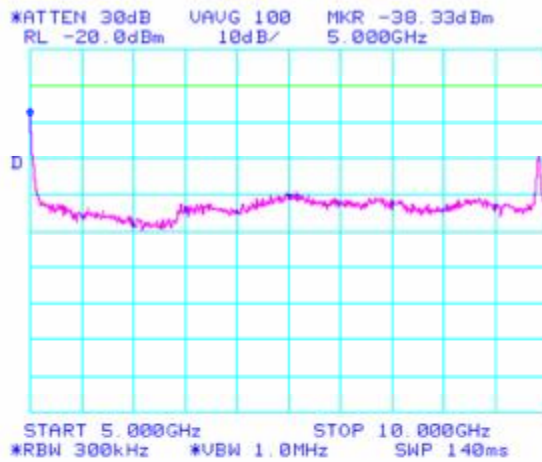


Plot 41: Conducted Spurious 20MHz BW 5 of 5

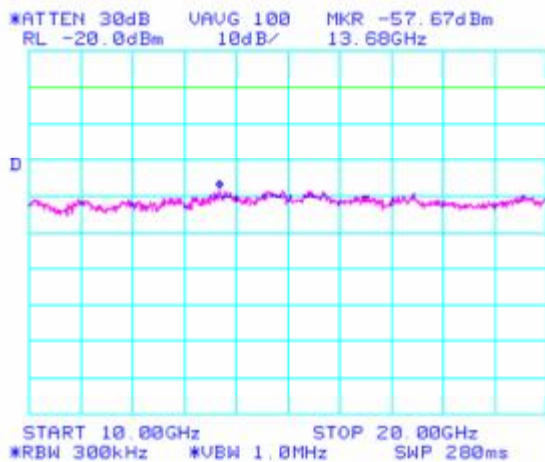




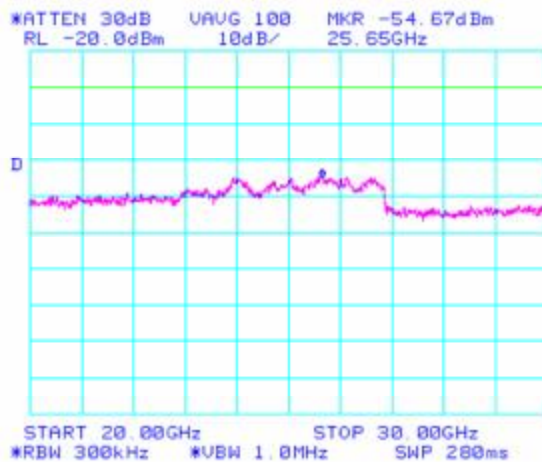
Plot 42: Conducted Spurious 30MHz BW 1 of 5



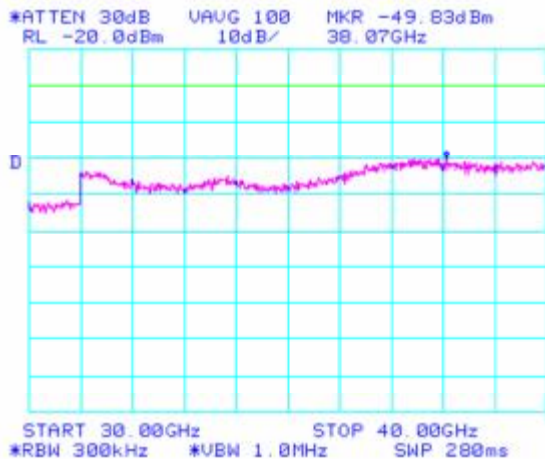
Plot 43: Conducted Spurious 30MHz BW 2 of 5



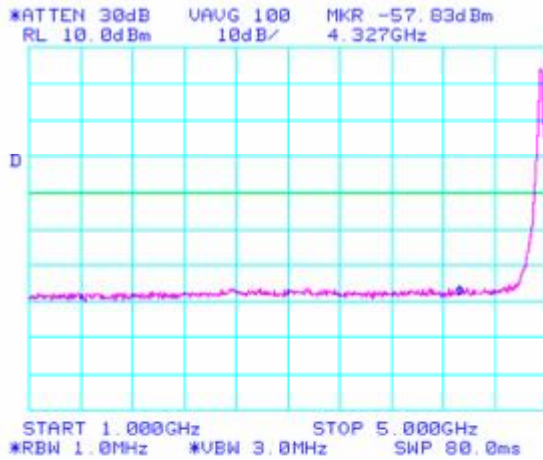
Plot 44: Conducted Spurious 30MHz BW 3 of 5



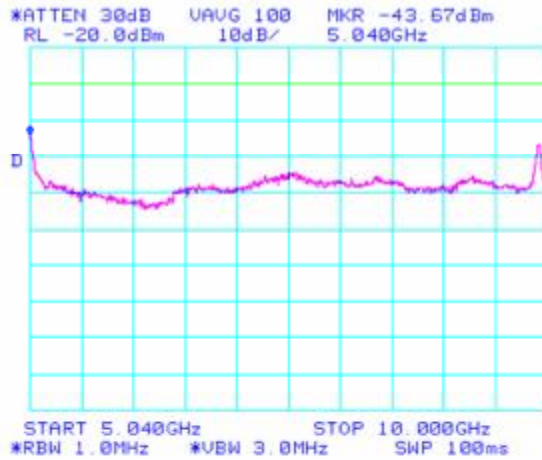
Plot 45: Conducted Spurious 30MHz BW 4 of 5



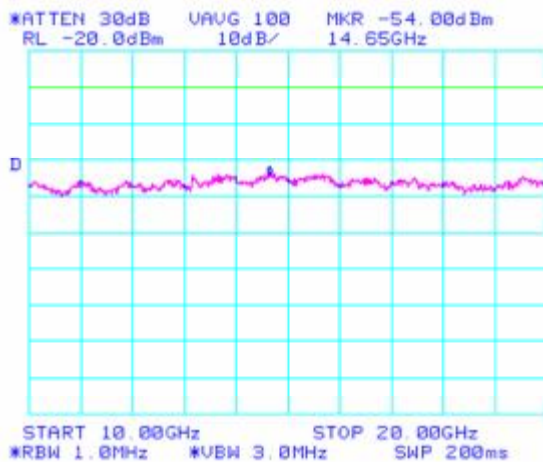
Plot 46: Conducted Spurious 30MHz BW 5 of 5



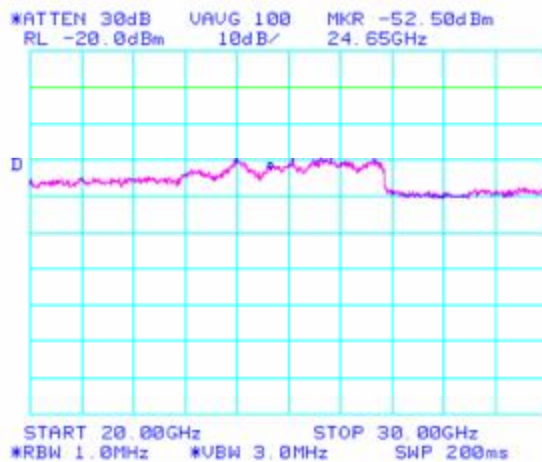
Plot 47: Conducted Spurious 40MHz BW 1 of 5



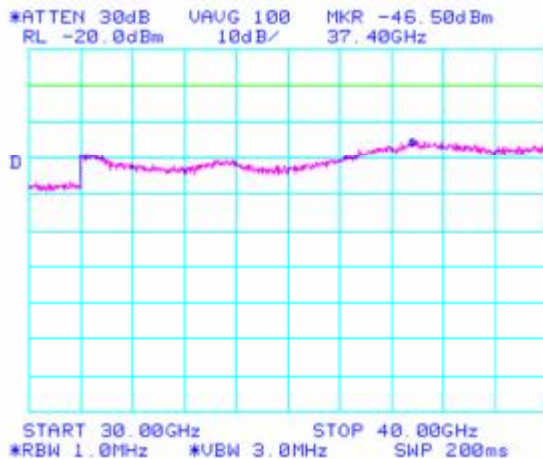
Plot 48: Conducted Spurious 40MHz BW 2 of 5



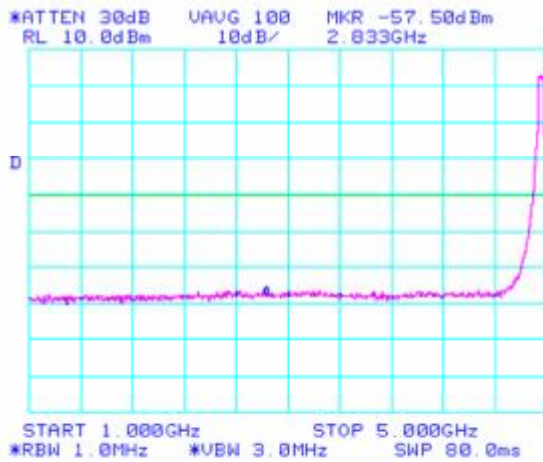
Plot 49: Conducted Spurious 40MHz BW 3 of 5



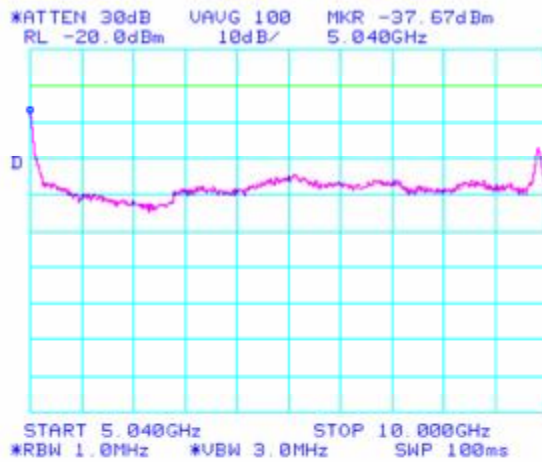
Plot 50: Conducted Spurious 40MHz BW 4 of 5



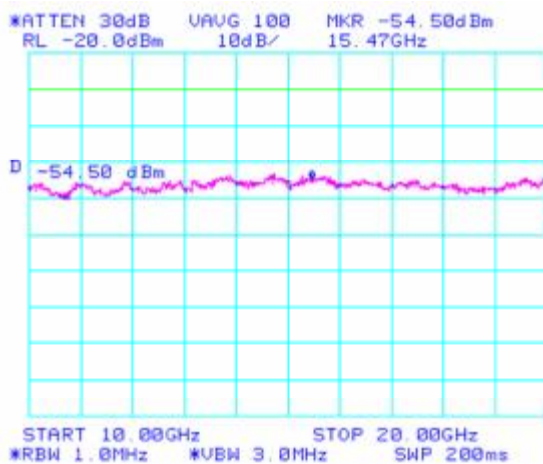
Plot 51: Conducted Spurious 40MHz BW 5 of 5



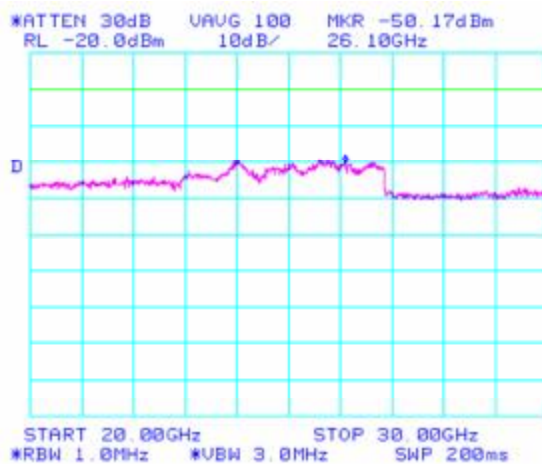
Plot 52: Conducted Spurious 50MHz BW 1 of 5



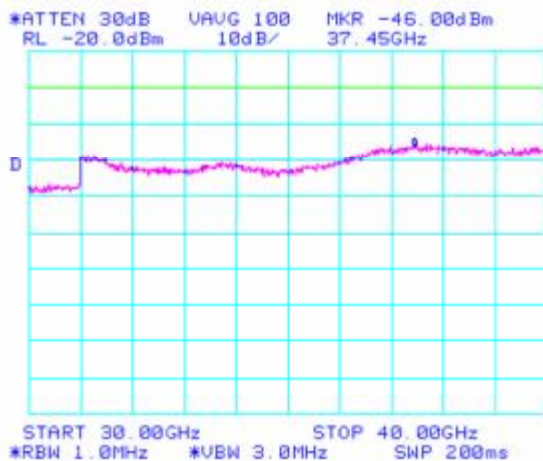
Plot 53: Conducted Spurious 50MHz BW 2 of 5



Plot 54: Conducted Spurious 50MHz BW 3 of 5



Plot 55: Conducted Spurious 50MHz BW 4 of 5



Plot 56: Conducted Spurious 50MHz BW 5 of 5



**Title:** AIRAYA, CORP  
WirelessGRID  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 36 of 51

---

**Tested By:** Alvin Ilarina

**Date Tested:** 18 Apr 2005



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 37 of 51

### 3.2.5 Radiated Spurious Emissions

Requirement(s): 47 CFR §2.1053 and §90.210(l)

**Procedures:** The radiated spurious emissions were measured using signal substitution. Any spurious emission amplitude was recorded. The emission amplitude was then reproduced with another antenna and signal generator. The output power at the substitution antenna was then measured with a power meter. This reading was then added with the antenna gain to determine the EIRP of the spurious emission. The measurements were made for the 5MHz, 10MHz, 15MHz, 20MHz, 30MHz, 40MHz, and 50MHz bandwidths at the center frequency of the channel.

The spurious limit was determined by:

Measured Average Output Power of EUT – 53 dBm/MHz

**Setup:**





**Title:** AIRAYA, CORP  
WirelessGRID  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 38 of 51

### Results:

EBW	Frequency	Polarization	Azimuth	Power Meter	Antenna Gain	EIRP	Limit	Margin
(MHz)	(MHz)	V/H	(degrees)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
5	9920	V	200	-62.4	11.6	-50.8	-34.2	-16.6
5	9920	H	200	-63.6	11.5	-52.1	-34.2	-17.9
5	14890	V	200	-71.6	11.6	-60.0	-34.2	-25.8
5	14890	H	Noise Floor					
10	9920	V	200	-63.4	11.6	-51.8	-31.8	-20.0
10	9920	H	200	-62.8	11.5	-51.3	-31.8	-19.5
10	14890	V	200	-75.3	11.6	-61.7	-31.8	-29.9
10	14890	H	Noise Floor					
15	9920	V	200	-63.4	11.6	-51.8	-29.9	-21.9
15	9920	H	200	-65.6	11.5	-54.1	-29.9	-24.2
15	14890	V	Noise Floor					
15	14890	H	Noise Floor					
20	9920	V	200	-65.3	11.6	-53.7	-30.2	-23.5
20	9920	H	200	-66.4	11.5	-54.9	-30.2	-24.7
20	14890	V	Noise Floor					
20	14890	H	Noise Floor					

Notes:

NF = Noise Floor

EIRP = Power Meter reading + Antenna Gain

Margin = EIRP – Limit



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 39 of 51

EBW	Frequency	Polarization	Azimuth	Power Meter	Antenna Gain	EIRP	Limit	Margin
(MHz)	(MHz)	V/H	(degrees)	(dBm)	(dBi)	(dBm)	(dBm)	(dB)
30	9920	V	200	-66.3	11.6	-54.7	-30.3	-24.4
30	9920	H	200	-63.4	11.5	-51.9	-30.3	-21.6
30	14890	V	Noise Floor					
30	14890	H	Noise Floor					
40	9920	V	200	-69.8	11.6	-58.2	-30.2	-28.0
40	9920	H	200	-64.4	11.5	-52.9	-30.2	-22.7
40	14890	V	Noise Floor					
40	14890	H	Noise Floor					
50	9920	V	200	-68.9	11.6	-57.3	-30.3	-27.0
50	9920	H	200	-66.7	11.5	-55.2	-30.3	-24.9
50	14890	V	Noise Floor					
50	14890	H	Noise Floor					
Notes: NF = Noise Floor EIRP = Power Meter reading + Antenna Gain Margin = EIRP – Limit								

Tested By: Alvin Ilarina

Date Tested: 12 Apr 2005





Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 40 of 51

---

### 3.2.6 Frequency Stability; Temperature Variations

Requirement(s): 47 CFR §2.1055(a)(1) and §90.213

**Procedure:** The frequency stability was measured at the antenna terminal using a spectrum analyzer. The measurements were made at the 5MHz bandwidths using the frequency counter function of the spectrum analyzer. The temperature was varied from -30°C to +50°C at 10°C increments with suitable time allowed for temperature stability between measurements.

**Setup:**







**Title:** AIRAYA, CORP  
**WirelessGRID**  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 41 of 51

---

**Results:**

Temperature (°C)	Frequency (GHz)	ppm
+50	4.964995850	4.8
+40	4.964972643	0.2
+30	4.964965353	1.2
+20	4.964971544	0
+10	4.964987828	3.2
0	4.964995952	4.9
-10	4.964996837	5.1
-20	4.965005546	6.8
-30	4.965030186	11.8

**Tested By:** Alvin Ilarina

**Date Tested:** 14 Mar 2005

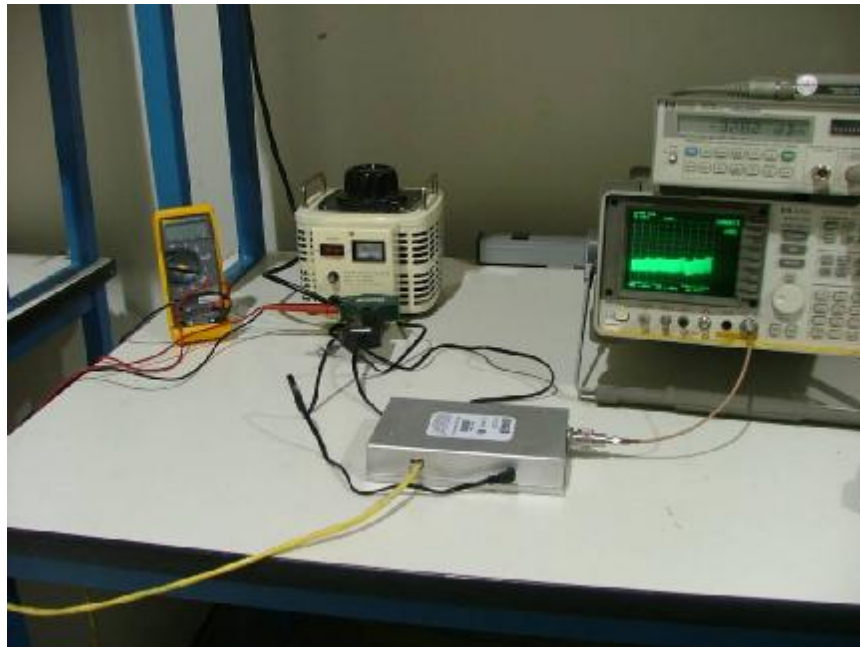


### 3.2.7 Frequency Stability: Voltage Variations

Requirement(s): 47 CFR §2.1055(d)(1) and §90.213

**Procedures:** The frequency stability was measured at the antenna terminal using a spectrum analyzer. The measurements were made at the 5MHz bandwidth using the frequency counter function of the spectrum analyzer. The voltage was varied from +/- 15% of the nominal.

**Setup:**



**Results:**

Voltage (VAC)	Frequency (GHz)	ppm
125.5	4.96496192	0.79
110	4.964965848	0
93.5	4.964966022	0.03

External Power Supply



**Title:** AIRAYA, CORP  
**WirelessGRID**  
**To:** FCC Part 90 Subpart Y

**Serial#** SL05020802-ARY  
**Issue Date** 20 April 2005  
**Page** 43 of 51

---

Voltage (VAC)	Frequency (GHz)	ppm
125.5	4.964966870	0.34
110	4.964968583	0
93.5	4.964967182	0.28

**Powered over Ethernet**

**Tested By:** Alvin Ilarina

**Date Tested:** 14 Mar 2005



## 4 TEST INSTRUMENTATION

#### 4.1 TEST INSTRUMENTATION

[illegible]



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 45 of 51

---

## **APPENDIX A: EUT TEST CONDITIONS**

The following is the description of supporting equipment and details of cables used with the EUT.

Equipment Description (Including Brand Name)	Cable Description
PC Laptop	1. Power cord 2. Ethernet

EUT Description	: AIRAYA WirelessGRID
Model No	: AI108
Serial No	: 01966

The following is the description of how the EUT is exercised during testing.

Test	Description Of Operation
	The EUT was controlled and monitored via Ethernet by a PC running a radio test program. The data rate was set at maximum at each bandwidth to simulate worse case conditions during the equipment operation.



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 46 of 51

---

## **APPENDIX B: External Photos**

See Attachment



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 47 of 51

---

## **APPENDIX C: CIRCUIT/BLOCK DIAGRAMS**

See Attachment



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 48 of 51

---

## **APPENDIX D: Internal Photos**

See Attachment





Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 49 of 51

---

## **APPENDIX F: PRODUCT DESCRIPTION**

Detail description of this product is shown in the User's Guide.



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 50 of 51

---

## **APPENDIX H: FCC LABEL LOCATION**

See Attachment



Title: AIRAYA, CORP  
WirelessGRID  
To: FCC Part 90 Subpart Y

Serial# SL05020802-ARY  
Issue Date 20 April 2005  
Page 51 of 51

---

## **APPENDIX I: USER MANUAL**

See Attachment