



## **DIGITAL PATH NETWORKS TEST REPORT**

**FOR THE**

**ASKEY ATHEROS RADIO, RELAY**

**FCC PART 15 SUBPART C SECTIONS 15.207, 15.209, 15.247 & 15.407  
AND SUBPART B SECTIONS 15.107 & 15.109, CLASS A**

**COMPLIANCE**

**DATE OF ISSUE: NOVEMBER 29, 2004**

**PREPARED FOR:**

Digital Path Networks  
275 Air Park Blvd., Suite 500  
Chico, CA 95973

W.O. No.: 82775

**PREPARED BY:**

Mary Ellen Clayton  
CKC Laboratories, Inc.  
5473A Clouds Rest  
Mariposa, CA 95338

Date of test: November 8-22, 2004

**Report No.: FC04-082**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** November 8-22, 2004

**DATE OF RECEIPT:** November 8, 2004

**PURPOSE OF TEST:** To demonstrate the compliance of the Askey Atheros Radio, Relay with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209, 15.247 & 15.407 and Subpart B Sections 15.107 & 15.109 Class A devices.

**TEST METHOD:** ANSI C63.4 (2001)

**FREQUENCY RANGE TESTED:** 30 MHz-40 GHz

**MANUFACTURER:** Digital Path Networks  
275 Air Park Blvd., Suite 500  
Chico, CA 95973

**REPRESENTATIVE:** Brock Eastman

**TEST LOCATION:** CKC Laboratories, Inc.  
5473A Clouds Rest  
Mariposa, CA 95338

## SUMMARY OF RESULTS

As received, the Digital Path Networks Askey Atheros Radio, Relay was found to be fully compliant with the following standards and specifications:

### United States

- FCC Part 15 Subpart C Sections 15.207, 15.209, 15.247 & 15.407 and Subpart B Sections 15.107 & 15.109 Class A
- ANSI C63.4 (2001) method

## CONDITIONS FOR COMPLIANCE

For the Soekris based equipment, two ferrites were installed on the antenna lead to the 2.4 GHz omni antenna from the instance two radio near the antenna connector. For the PCEngines based equipment, one ferrite was installed on each antenna lead near the antenna. A ferrite was installed on the power over ethernet cable.

## APPROVALS

Steve Behm, Director of Engineering Services

### QUALITY ASSURANCE:

A handwritten signature in black ink, appearing to read "Joyce Walker".

---

Joyce Walker, Quality Assurance Administrative Manager

### TEST PERSONNEL:

A handwritten signature in black ink, appearing to read "Randy Clark".

---

Randy Clark, EMC Engineer

## EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

## EQUIPMENT UNDER TEST

### Askey Atheros Radio

Manuf: Digital Path Networks  
Model: Relay  
Serial: 110504-002  
FCC ID: pending

### Radio Power Supply

Manuf: Digital Path Networks  
Model: CHMON v5.1  
Serial: 110804-001a  
FCC ID: DoC

### Askey Atheros Radio

Manuf: Digital Path Networks  
Model: Downlink  
Serial: 111504-003  
FCC ID: pending

### Askey Atheros Radio

Manuf: Digital Path Networks  
Model: Relay & Downlink  
Serial: 111804-001\*  
FCC ID: pending

\*This is a phantom number representing testing with the Relay and Downlink together.

## PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

### Radio Power Supply

Manuf: Digital Path Networks  
Model: CHMON v5.1  
Serial: 110804-001a  
FCC ID: DoC

### Support Computer

Manuf: Toshiba  
Model: PS426U-0M151  
Serial: 50683063U  
FCC ID: DoC

### Laptop Power Supply

Manuf: Toshiba  
Model: PA3049U-1ACA  
Serial: 0003A0221552G  
FCC ID: DoC

**FCC 15.31(e) Voltage Variations**

Voltage variations performed at  $\pm 15\%$  of nominal mains input; there was no measureable change in power output from values reported.

**FCC 15.31(m) Number Of Channels**

This device tested on three channels.

**FCC 15.33(a) Frequency Ranges Tested**

15.107 Conducted Emissions: 150 kHz – 30 MHz

15.109 Radiated Emissions: 30 MHz – 1000 MHz

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209/15.247 Radiated Emissions: 30 MHz – 1000 MHz

**FCC 15.203 Antenna Requirements**

The antenna requires professional installation; therefore the EUT complies with Section 15.203 of the FCC rules.

**FCC 15.205 Restricted Bands**

The fundamental operating frequency lies outside the restricted bands and therefore complies with the requirements of Section 15.205 of the FCC rules. Any spurious emission coming from the EUT was investigated to determine if any portion lies inside the restricted band. If any portion of a spurious emissions signal was found to be within a restricted band, investigation was performed to ensure compliance with Section 15.209.

**Eut Operating Frequency**

The EUT was operating at 2400 MHz – 2483.5 MHz, 5250 MHz – 5350 MHz and 5725 MHz – 5850 MHz.

## **FCC 15.107 – AC CONDUCTED EMISSIONS**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.107(b) Class A - AVE**  
 Work Order #: **82775** Date: 11/23/2004  
 Test Type: **Conducted Emissions** Time: 4:14:50 PM  
 Equipment: **Askey Atheros Radio** Sequence#: 49  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

### ***Test Equipment:***

| Function                     | S/N               | Calibration Date | Cal Due Date | Asset # |
|------------------------------|-------------------|------------------|--------------|---------|
| HP 8566B SA                  | 2209A01404        | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display          | 2403A08241        | 02/26/2003       | 02/26/2005   | 00489   |
| HP 85650A QPA                | 2811A01267        | 02/26/2003       | 02/26/2005   | 00478   |
| LISN Model 8028-50-TS-24-BNC | 8379276 & 8379280 | 06/05/2003       | 06/05/2005   | 00330   |

### ***Equipment Under Test (\* = EUT):***

| Function            | Manufacturer | Model #          | S/N         |
|---------------------|--------------|------------------|-------------|
| Radio Power Supply  | Digital Path | CHMON v5.1       | 110804-001a |
| Askey Atheros Radio | Digital Path | Relay & Downlink | 110804-001  |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

### ***Test Conditions / Notes:***

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT operating in a mode representative of worst case using PCEngines motherboard. EUT is in continuous receive mode. Motherboard powered by 28VDC. Power over ethernet option bypassed using power adapter dongle. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 17°C, Relative Humidity: 48%.

### ***Transducer Legend:***

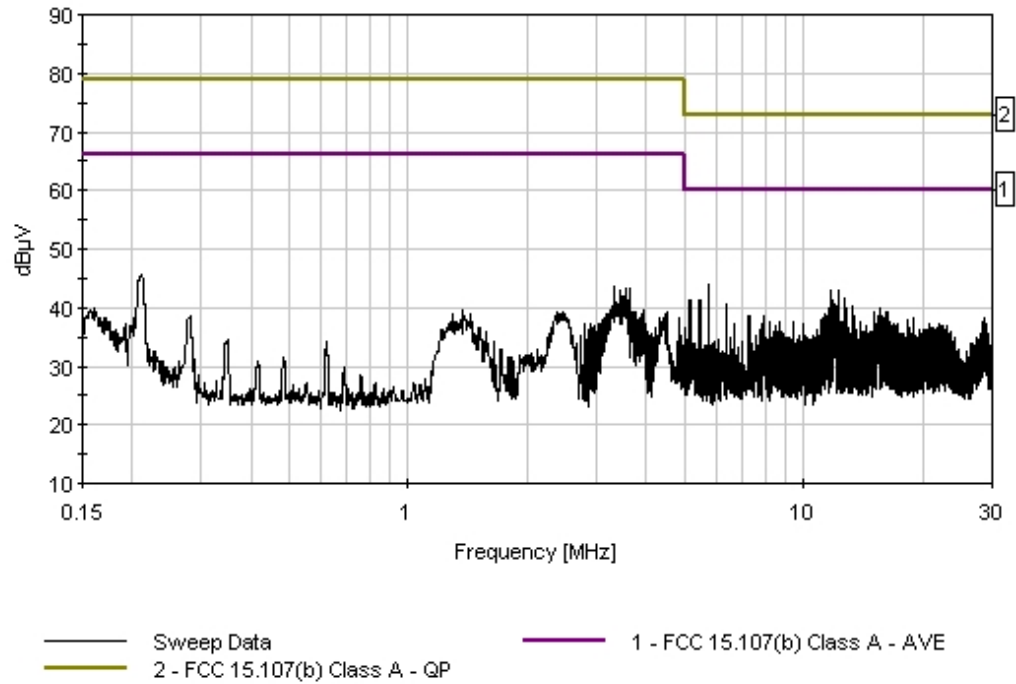
|                           |                               |
|---------------------------|-------------------------------|
| T1=Cable - Internal + cab | T2=LISN Insertion Loss s/n280 |
| T3=HP Filter AN02608      |                               |

### ***Measurement Data:*** Reading listed by margin. Test Lead: Black

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----|---------------|--------------|--------------|--------------|--------------|
| 1 | 5.769M      | 43.1         | +0.3     | +0.3     | +0.1     |    | +0.0          | 43.8         | 60.0         | -16.2        | Black        |
| 2 | 12.201M     | 42.2         | +0.4     | +0.4     | +0.1     |    | +0.0          | 43.1         | 60.0         | -16.9        | Black        |
| 3 | 11.715M     | 42.1         | +0.4     | +0.4     | +0.1     |    | +0.0          | 43.0         | 60.0         | -17.0        | Black        |
| 4 | 11.652M     | 41.5         | +0.4     | +0.4     | +0.1     |    | +0.0          | 42.4         | 60.0         | -17.6        | Black        |

|    |          |      |      |      |      |      |      |      |       |       |
|----|----------|------|------|------|------|------|------|------|-------|-------|
| 5  | 12.751M  | 40.8 | +0.4 | +0.4 | +0.1 | +0.0 | 41.7 | 60.0 | -18.3 | Black |
| 6  | 5.462M   | 40.7 | +0.3 | +0.3 | +0.1 | +0.0 | 41.4 | 60.0 | -18.6 | Black |
| 7  | 5.156M   | 40.5 | +0.3 | +0.3 | +0.1 | +0.0 | 41.2 | 60.0 | -18.8 | Black |
| 8  | 11.904M  | 40.3 | +0.4 | +0.4 | +0.1 | +0.0 | 41.2 | 60.0 | -18.8 | Black |
| 9  | 6.372M   | 39.8 | +0.3 | +0.3 | +0.1 | +0.0 | 40.5 | 60.0 | -19.5 | Black |
| 10 | 12.138M  | 39.4 | +0.4 | +0.4 | +0.1 | +0.0 | 40.3 | 60.0 | -19.7 | Black |
| 11 | 13.363M  | 39.2 | +0.4 | +0.4 | +0.1 | +0.0 | 40.1 | 60.0 | -19.9 | Black |
| 12 | 12.805M  | 39.1 | +0.4 | +0.4 | +0.1 | +0.0 | 40.0 | 60.0 | -20.0 | Black |
| 13 | 11.588M  | 39.1 | +0.3 | +0.4 | +0.1 | +0.0 | 39.9 | 60.0 | -20.1 | Black |
| 14 | 15.633M  | 39.0 | +0.4 | +0.4 | +0.1 | +0.0 | 39.9 | 60.0 | -20.1 | Black |
| 15 | 15.561M  | 38.7 | +0.4 | +0.4 | +0.1 | +0.0 | 39.6 | 60.0 | -20.4 | Black |
| 16 | 211.812k | 45.0 | +0.1 | +0.3 | +0.1 | +0.0 | 45.5 | 66.0 | -20.5 | Black |
| 17 | 15.021M  | 38.5 | +0.4 | +0.4 | +0.1 | +0.0 | 39.4 | 60.0 | -20.6 | Black |
| 18 | 16.174M  | 38.5 | +0.4 | +0.4 | +0.1 | +0.0 | 39.4 | 60.0 | -20.6 | Black |
| 19 | 16.246M  | 38.5 | +0.4 | +0.4 | +0.1 | +0.0 | 39.4 | 60.0 | -20.6 | Black |
| 20 | 11.516M  | 38.2 | +0.3 | +0.4 | +0.1 | +0.0 | 39.0 | 60.0 | -21.0 | Black |

CKC Laboratories, Inc. Date: 11/23/2004 Time: 4:14:50 PM Digital Path VWO#: 82775  
FCC 15.107(b) Class A - AVE Test Lead: Black 120V 60Hz Sequence#: 49



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.107(b) Class A - AVE**  
 Work Order #: **82775** Date: 11/23/2004  
 Test Type: **Conducted Emissions** Time: 4:21:02 PM  
 Equipment: **Askey Atheros Radio** Sequence#: 50  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                     | S/N               | Calibration Date | Cal Due Date | Asset # |
|------------------------------|-------------------|------------------|--------------|---------|
| HP 8566B SA                  | 2209A01404        | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display          | 2403A08241        | 02/26/2003       | 02/26/2005   | 00489   |
| HP 85650A QPA                | 2811A01267        | 02/26/2003       | 02/26/2005   | 00478   |
| LISN Model 8028-50-TS-24-BNC | 8379276 & 8379280 | 06/05/2003       | 06/05/2005   | 00330   |

**Equipment Under Test (\* = EUT):**

| Function            | Manufacturer | Model #          | S/N         |
|---------------------|--------------|------------------|-------------|
| Radio Power Supply  | Digital Path | CHMON v5.1       | 110804-001a |
| Askey Atheros Radio | Digital Path | Relay & Downlink | 110804-001  |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT operating in a mode representative of worst case using PCEngines motherboard. EUT is in continuous receive mode. Motherboard powered by 28VDC. Power over ethernet option bypassed using power adapter dongle. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 17°C, Relative Humidity: 48%.

**Transducer Legend:**

|                           |                               |
|---------------------------|-------------------------------|
| T1=Cable - Internal + cab | T2=LISN Insertion Loss s/n276 |
| T3=HP Filter AN02608      |                               |

**Measurement Data:**

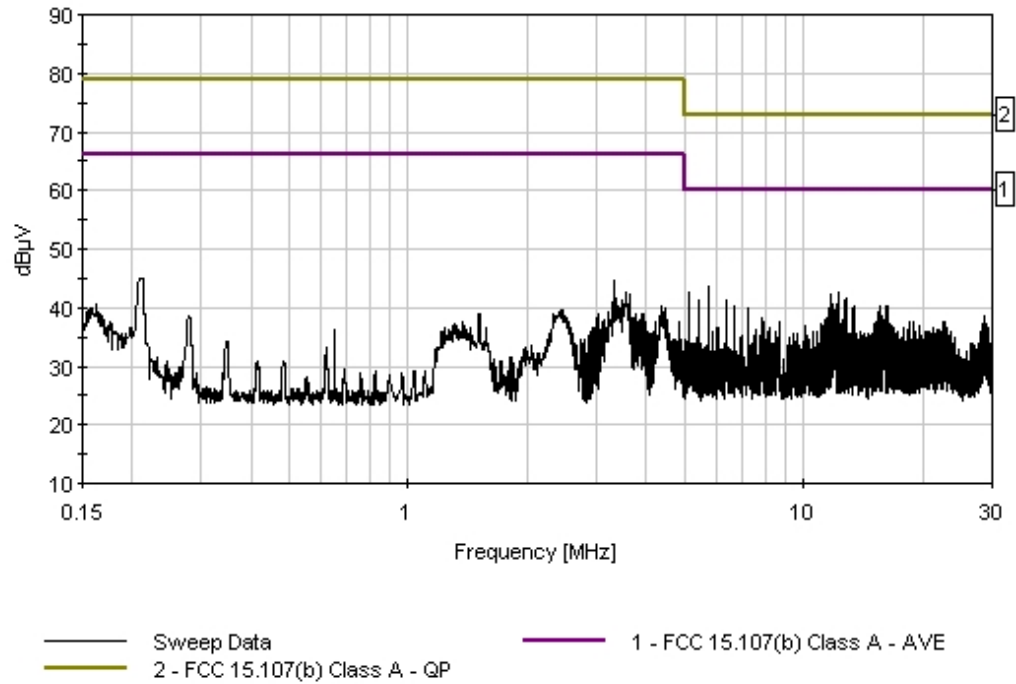
Reading listed by margin.

Test Lead: White

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----|---------------|--------------|--------------|--------------|--------------|
| 1 | 5.751M      | 42.7         | +0.3     | +0.4     | +0.1     |    | +0.0          | 43.5         | 60.0         | -16.5        | White        |
| 2 | 5.129M      | 41.8         | +0.3     | +0.4     | +0.1     |    | +0.0          | 42.6         | 60.0         | -17.4        | White        |
| 3 | 12.201M     | 41.6         | +0.4     | +0.5     | +0.1     |    | +0.0          | 42.6         | 60.0         | -17.4        | White        |
| 4 | 5.126M      | 41.7         | +0.3     | +0.4     | +0.1     |    | +0.0          | 42.5         | 60.0         | -17.5        | White        |
| 5 | 11.715M     | 41.3         | +0.4     | +0.5     | +0.1     |    | +0.0          | 42.3         | 60.0         | -17.7        | White        |

|    |         |      |      |      |      |      |      |      |       |       |
|----|---------|------|------|------|------|------|------|------|-------|-------|
| 6  | 11.652M | 40.7 | +0.4 | +0.5 | +0.1 | +0.0 | 41.7 | 60.0 | -18.3 | White |
| 7  | 12.814M | 40.7 | +0.4 | +0.5 | +0.1 | +0.0 | 41.7 | 60.0 | -18.3 | White |
| 8  | 6.354M  | 40.6 | +0.3 | +0.4 | +0.1 | +0.0 | 41.4 | 60.0 | -18.6 | White |
| 9  | 12.760M | 40.2 | +0.4 | +0.5 | +0.1 | +0.0 | 41.2 | 60.0 | -18.8 | White |
| 10 | 5.453M  | 40.3 | +0.3 | +0.4 | +0.1 | +0.0 | 41.1 | 60.0 | -18.9 | White |
| 11 | 11.895M | 39.7 | +0.4 | +0.5 | +0.1 | +0.0 | 40.7 | 60.0 | -19.3 | White |
| 12 | 15.633M | 39.5 | +0.4 | +0.4 | +0.1 | +0.0 | 40.4 | 60.0 | -19.6 | White |
| 13 | 16.183M | 39.5 | +0.4 | +0.4 | +0.1 | +0.0 | 40.4 | 60.0 | -19.6 | White |
| 14 | 6.661M  | 39.3 | +0.3 | +0.4 | +0.1 | +0.0 | 40.1 | 60.0 | -19.9 | White |
| 15 | 13.426M | 39.1 | +0.4 | +0.5 | +0.1 | +0.0 | 40.1 | 60.0 | -19.9 | White |
| 16 | 16.255M | 39.2 | +0.4 | +0.4 | +0.1 | +0.0 | 40.1 | 60.0 | -19.9 | White |
| 17 | 7.264M  | 39.1 | +0.3 | +0.4 | +0.1 | +0.0 | 39.9 | 60.0 | -20.1 | White |
| 18 | 13.363M | 38.9 | +0.4 | +0.5 | +0.1 | +0.0 | 39.9 | 60.0 | -20.1 | White |
| 19 | 12.138M | 38.3 | +0.4 | +0.5 | +0.1 | +0.0 | 39.3 | 60.0 | -20.7 | White |
| 20 | 15.417M | 38.2 | +0.4 | +0.4 | +0.1 | +0.0 | 39.1 | 60.0 | -20.9 | White |

CKC Laboratories, Inc. Date: 11/23/2004 Time: 4:21:02 PM Digital Path WVO#: 82775  
 FCC 15.107(b) Class A - AVE Test Lead: White 120V 60Hz Sequence#: 50



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.107(b) Class A - AVE**  
 Work Order #: **82775** Date: 11/23/2004  
 Test Type: **Conducted Emissions** Time: 4:06:35 PM  
 Equipment: **Askey Atheros Radio** Sequence#: 48  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                     | S/N               | Calibration Date | Cal Due Date | Asset # |
|------------------------------|-------------------|------------------|--------------|---------|
| HP 8566B SA                  | 2209A01404        | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display          | 2403A08241        | 02/26/2003       | 02/26/2005   | 00489   |
| HP 85650A QPA                | 2811A01267        | 02/26/2003       | 02/26/2005   | 00478   |
| LISN Model 8028-50-TS-24-BNC | 8379276 & 8379280 | 06/05/2003       | 06/05/2005   | 00330   |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N         |
|----------------------|--------------|------------------|-------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001  |
| Radio Power Supply   | Digital Path | CHMON v5.1       | 110804-001a |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT operating in a mode representative of worst case using Soekris motherboard. EUT is in continuous receive mode. Motherboard powered by 28VDC. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 17°C, Relative Humidity: 48%.

**Transducer Legend:**

|                           |                               |
|---------------------------|-------------------------------|
| T1=Cable - Internal + cab | T2=LISN Insertion Loss s/n280 |
| T3=HP Filter AN02608      |                               |

**Measurement Data:**

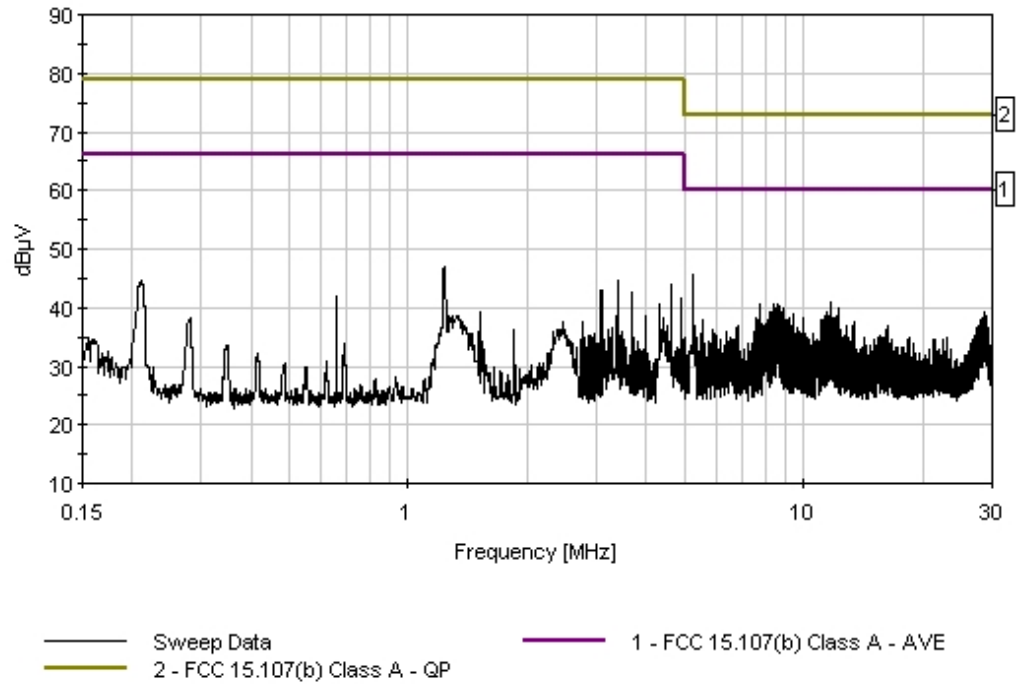
Reading listed by margin.

Test Lead: Black

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----|---------------|--------------|--------------|--------------|--------------|
| 1 | 5.255M      | 45.0         | +0.3     | +0.3     | +0.1     |    | +0.0          | 45.7         | 60.0         | -14.3        | Black        |
| 2 | 1.239M      | 46.3         | +0.2     | +0.3     | +0.2     |    | +0.0          | 47.0         | 66.0         | -19.0        | Black        |
| 3 | 11.724M     | 40.1         | +0.4     | +0.4     | +0.1     |    | +0.0          | 41.0         | 60.0         | -19.0        | Black        |
| 4 | 7.751M      | 39.7         | +0.3     | +0.5     | +0.1     |    | +0.0          | 40.6         | 60.0         | -19.4        | Black        |
| 5 | 8.444M      | 39.6         | +0.3     | +0.5     | +0.1     |    | +0.0          | 40.5         | 60.0         | -19.5        | Black        |

|    |         |      |      |      |      |      |      |      |       |       |
|----|---------|------|------|------|------|------|------|------|-------|-------|
| 6  | 8.579M  | 39.6 | +0.3 | +0.5 | +0.1 | +0.0 | 40.5 | 60.0 | -19.5 | Black |
| 7  | 8.372M  | 39.5 | +0.3 | +0.5 | +0.1 | +0.0 | 40.4 | 60.0 | -19.6 | Black |
| 8  | 8.652M  | 39.3 | +0.3 | +0.5 | +0.1 | +0.0 | 40.2 | 60.0 | -19.8 | Black |
| 9  | 11.652M | 39.3 | +0.4 | +0.4 | +0.1 | +0.0 | 40.2 | 60.0 | -19.8 | Black |
| 10 | 8.507M  | 39.1 | +0.3 | +0.5 | +0.1 | +0.0 | 40.0 | 60.0 | -20.0 | Black |
| 11 | 12.201M | 39.0 | +0.4 | +0.4 | +0.1 | +0.0 | 39.9 | 60.0 | -20.1 | Black |
| 12 | 8.913M  | 38.9 | +0.3 | +0.5 | +0.1 | +0.0 | 39.8 | 60.0 | -20.2 | Black |
| 13 | 8.706M  | 38.5 | +0.3 | +0.5 | +0.1 | +0.0 | 39.4 | 60.0 | -20.6 | Black |
| 14 | 8.850M  | 38.5 | +0.3 | +0.5 | +0.1 | +0.0 | 39.4 | 60.0 | -20.6 | Black |
| 15 | 8.228M  | 38.4 | +0.3 | +0.5 | +0.1 | +0.0 | 39.3 | 60.0 | -20.7 | Black |
| 16 | 28.629M | 38.0 | +0.6 | +0.5 | +0.2 | +0.0 | 39.3 | 60.0 | -20.7 | Black |
| 17 | 28.698M | 38.0 | +0.6 | +0.5 | +0.2 | +0.0 | 39.3 | 60.0 | -20.7 | Black |
| 18 | 8.300M  | 38.3 | +0.3 | +0.5 | +0.1 | +0.0 | 39.2 | 60.0 | -20.8 | Black |
| 19 | 8.778M  | 38.2 | +0.3 | +0.5 | +0.1 | +0.0 | 39.1 | 60.0 | -20.9 | Black |
| 20 | 11.444M | 38.3 | +0.3 | +0.4 | +0.1 | +0.0 | 39.1 | 60.0 | -20.9 | Black |

CKC Laboratories, Inc. Date: 11/23/2004 Time: 4:06:35 PM Digital Path VWO#: 82775  
FCC 15.107(b) Class A - AVE Test Lead: Black 120V 60Hz Sequence#: 48





Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.107(b) Class A - AVE**  
 Work Order #: **82775** Date: 11/23/2004  
 Test Type: **Conducted Emissions** Time: 4:03:19 PM  
 Equipment: **Askey Atheros Radio** Sequence#: 47  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                     | S/N               | Calibration Date | Cal Due Date | Asset # |
|------------------------------|-------------------|------------------|--------------|---------|
| HP 8566B SA                  | 2209A01404        | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display          | 2403A08241        | 02/26/2003       | 02/26/2005   | 00489   |
| HP 85650A QPA                | 2811A01267        | 02/26/2003       | 02/26/2005   | 00478   |
| LISN Model 8028-50-TS-24-BNC | 8379276 & 8379280 | 06/05/2003       | 06/05/2005   | 00330   |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #    | S/N         |
|----------------------|--------------|------------|-------------|
| Askey Atheros Radio* | Digital Path | Relay      | 110804-001  |
| Radio Power Supply   | Digital Path | CHMON v5.1 | 110804-001a |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT operating in a mode representative of worst case using Soekris motherboard. EUT is in continuous receive mode. Motherboard powered by 28VDC. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 17°C, Relative Humidity: 48%.

**Transducer Legend:**

|                           |                               |
|---------------------------|-------------------------------|
| T1=Cable - Internal + cab | T2=LISN Insertion Loss s/n276 |
| T3=HP Filter AN02608      |                               |

**Measurement Data:**

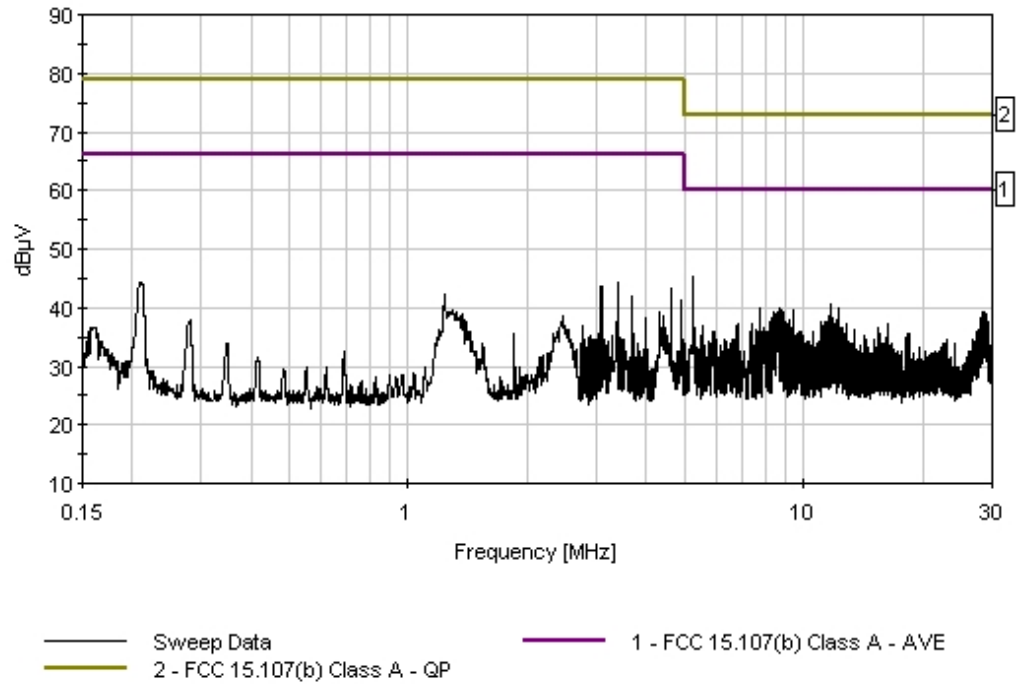
Reading listed by margin.

Test Lead: White

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----|---------------|--------------|--------------|--------------|--------------|
| 1 | 5.255M      | 44.4         | +0.3     | +0.4     | +0.1     |    | +0.0          | 45.2         | 60.0         | -14.8        | White        |
| 2 | 11.652M     | 39.7         | +0.4     | +0.5     | +0.1     |    | +0.0          | 40.7         | 60.0         | -19.3        | White        |
| 3 | 11.715M     | 39.2         | +0.4     | +0.5     | +0.1     |    | +0.0          | 40.2         | 60.0         | -19.8        | White        |
| 4 | 7.760M      | 39.1         | +0.3     | +0.5     | +0.1     |    | +0.0          | 40.0         | 60.0         | -20.0        | White        |
| 5 | 8.706M      | 38.9         | +0.3     | +0.5     | +0.1     |    | +0.0          | 39.8         | 60.0         | -20.2        | White        |

|    |         |      |      |      |      |      |      |      |       |       |
|----|---------|------|------|------|------|------|------|------|-------|-------|
| 6  | 12.201M | 38.8 | +0.4 | +0.5 | +0.1 | +0.0 | 39.8 | 60.0 | -20.2 | White |
| 7  | 8.787M  | 38.6 | +0.3 | +0.5 | +0.1 | +0.0 | 39.5 | 60.0 | -20.5 | White |
| 8  | 9.399M  | 38.6 | +0.3 | +0.5 | +0.1 | +0.0 | 39.5 | 60.0 | -20.5 | White |
| 9  | 8.363M  | 38.5 | +0.3 | +0.5 | +0.1 | +0.0 | 39.4 | 60.0 | -20.6 | White |
| 10 | 8.643M  | 38.4 | +0.3 | +0.5 | +0.1 | +0.0 | 39.3 | 60.0 | -20.7 | White |
| 11 | 8.913M  | 38.3 | +0.3 | +0.5 | +0.1 | +0.0 | 39.2 | 60.0 | -20.8 | White |
| 12 | 28.348M | 38.0 | +0.6 | +0.4 | +0.2 | +0.0 | 39.2 | 60.0 | -20.8 | White |
| 13 | 28.561M | 38.0 | +0.6 | +0.4 | +0.2 | +0.0 | 39.2 | 60.0 | -20.8 | White |
| 14 | 8.850M  | 38.2 | +0.3 | +0.5 | +0.1 | +0.0 | 39.1 | 60.0 | -20.9 | White |
| 15 | 28.705M | 37.9 | +0.6 | +0.4 | +0.2 | +0.0 | 39.1 | 60.0 | -20.9 | White |
| 16 | 8.435M  | 38.1 | +0.3 | +0.5 | +0.1 | +0.0 | 39.0 | 60.0 | -21.0 | White |
| 17 | 8.507M  | 38.1 | +0.3 | +0.5 | +0.1 | +0.0 | 39.0 | 60.0 | -21.0 | White |
| 18 | 28.835M | 37.6 | +0.6 | +0.4 | +0.2 | +0.0 | 38.8 | 60.0 | -21.2 | White |
| 19 | 28.499M | 37.5 | +0.6 | +0.4 | +0.2 | +0.0 | 38.7 | 60.0 | -21.3 | White |
| 20 | 8.570M  | 37.7 | +0.3 | +0.5 | +0.1 | +0.0 | 38.6 | 60.0 | -21.4 | White |

CKC Laboratories, Inc. Date: 11/23/2004 Time: 4:03:19 PM Digital Path WVO#: 82775  
FCC 15.107(b) Class A - AVE Test Lead: White 120V 60Hz Sequence#: 47



## **FCC 15.109 – RADIATED EMISSIONS**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.109 CLASS A**  
 Work Order #: **82775**  
 Test Type: **Maximized Emissions**  
 Equipment: **Askey Atheros Radio**  
 Manufacturer: Digital Path  
 Model: Relay & Downlink  
 S/N: 110804-001

Date: 11/23/2004  
 Time: 12:00:35  
 Sequence#: 41  
 Tested By: Randal Clark

### ***Test Equipment:***

| Function        | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------|------------|------------------|--------------|---------|
| HP 8566B SA     | 2209A01404 | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA     | 2403A08241 | 02/26/2003       | 02/26/2005   | 00489   |
| Display         |            |                  |              |         |
| HP 85650A QPA   | 2811A01267 | 02/26/2003       | 02/26/2005   | 00478   |
| Chase CBL6111C  | 2456       | 12/13/2002       | 12/13/2004   | 01991   |
| Bilog           |            |                  |              |         |
| HP 8447D Preamp | 1937A02604 | 03/07/2003       | 03/07/2005   | 00099   |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model #          | S/N         |
|----------------------|--------------|------------------|-------------|
| Radio Power Supply   | Digital Path | CHMON v5.1       | 110804-001a |
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001  |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

### ***Test Conditions / Notes:***

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT power supply is located at the turn table. This test data is represents data collected from the PCEngines motherboard. Test data is representative of both Relay and Downlink. Test data represents emissions from radio in receive mode, digital circuitry and power supply. Reported emissions represent the worst case. Test distance correction factor used in accordance with 15.31 20dB per decade. Frequency Range Investigated: 30-1000MHz. Temperature: 16°C, Relative Humidity: 36%. RBW = 120kHz, VBW = 120kHz.

### ***Transducer Legend:***

|                     |                 |
|---------------------|-----------------|
| T1=Amp - S/N 604    | T2=Bilog Site B |
| T3=Cable - 10 Meter |                 |

### ***Measurement Data:***

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB |  | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|--|---------------|----------------|----------------|--------------|--------------|
| 1 | 833.249M    | 48.5         | -27.7    | +21.9    | +7.5     |  | -10.0         | 40.2           | 46.4           | -6.2         | Verti        |
| 2 | 151.070M    | 59.8         | -27.0    | +10.4    | +2.8     |  | -10.0         | 36.0           | 43.5           | -7.5         | Horiz        |

|    |                |      |       |       |      |       |      |      |       |       |
|----|----------------|------|-------|-------|------|-------|------|------|-------|-------|
| 3  | 833.404M       | 46.7 | -27.7 | +21.9 | +7.5 | -10.0 | 38.4 | 46.4 | -8.0  | Horiz |
| 4  | 134.050M       | 59.0 | -27.1 | +11.0 | +2.6 | -10.0 | 35.5 | 43.5 | -8.0  | Horiz |
| 5  | 135.280M       | 58.9 | -27.1 | +11.0 | +2.6 | -10.0 | 35.4 | 43.5 | -8.1  | Horiz |
| 6  | 135.210M<br>QP | 58.7 | -27.1 | +11.0 | +2.6 | -10.0 | 35.2 | 43.5 | -8.3  | Verti |
| ^  | 135.210M       | 60.5 | -27.1 | +11.0 | +2.6 | -10.0 | 37.0 | 43.5 | -6.5  | Verti |
| 8  | 132.750M<br>QP | 58.3 | -27.1 | +11.0 | +2.6 | -10.0 | 34.8 | 43.5 | -8.7  | Verti |
| ^  | 132.750M       | 60.5 | -27.1 | +11.0 | +2.6 | -10.0 | 37.0 | 43.5 | -6.5  | Verti |
| 10 | 136.450M       | 58.2 | -27.1 | +11.0 | +2.6 | -10.0 | 34.7 | 43.5 | -8.8  | Horiz |
| 11 | 131.590M<br>QP | 58.0 | -27.1 | +11.1 | +2.6 | -10.0 | 34.6 | 43.5 | -8.9  | Verti |
| ^  | 131.590M       | 60.5 | -27.1 | +11.1 | +2.6 | -10.0 | 37.1 | 43.5 | -6.4  | Verti |
| 13 | 132.790M       | 57.8 | -27.1 | +11.0 | +2.6 | -10.0 | 34.3 | 43.5 | -9.2  | Horiz |
| 14 | 131.640M       | 57.4 | -27.1 | +11.1 | +2.6 | -10.0 | 34.0 | 43.5 | -9.5  | Horiz |
| 15 | 147.970M       | 57.7 | -27.0 | +10.5 | +2.8 | -10.0 | 34.0 | 43.5 | -9.5  | Horiz |
| 16 | 833.441M<br>QP | 45.0 | -27.7 | +21.9 | +7.5 | -10.0 | 36.7 | 46.4 | -9.7  | Verti |
| 17 | 137.690M       | 57.2 | -27.1 | +10.9 | +2.7 | -10.0 | 33.7 | 43.5 | -9.8  | Horiz |
| 18 | 146.770M       | 57.2 | -27.0 | +10.6 | +2.8 | -10.0 | 33.6 | 43.5 | -9.9  | Horiz |
| 19 | 129.150M<br>QP | 56.8 | -27.2 | +11.1 | +2.6 | -10.0 | 33.3 | 43.5 | -10.2 | Verti |
| ^  | 129.150M       | 59.8 | -27.2 | +11.1 | +2.6 | -10.0 | 36.3 | 43.5 | -7.2  | Verti |
| 21 | 160.111M       | 57.0 | -26.9 | +10.1 | +2.9 | -10.0 | 33.1 | 43.5 | -10.4 | Horiz |
| 22 | 140.107M       | 56.6 | -27.1 | +10.9 | +2.7 | -10.0 | 33.1 | 43.5 | -10.4 | Horiz |
| 23 | 130.420M       | 56.4 | -27.2 | +11.1 | +2.6 | -10.0 | 32.9 | 43.5 | -10.6 | Horiz |
| 24 | 134.944M<br>QP | 55.9 | -27.1 | +11.0 | +2.6 | -10.0 | 32.4 | 43.5 | -11.1 | Verti |
| ^  | 134.944M       | 59.0 | -27.1 | +11.0 | +2.6 | -10.0 | 35.5 | 43.5 | -8.0  | Verti |

|    |                |      |       |       |      |       |      |      |       |       |
|----|----------------|------|-------|-------|------|-------|------|------|-------|-------|
| 26 | 137.040M<br>QP | 55.6 | -27.1 | +11.0 | +2.7 | -10.0 | 32.2 | 43.5 | -11.3 | Verti |
| ^  | 137.040M       | 58.7 | -27.1 | +11.0 | +2.7 | -10.0 | 35.3 | 43.5 | -8.2  | Verti |
| 28 | 30.615M<br>QP  | 45.8 | -27.3 | +17.8 | +1.2 | -10.0 | 27.5 | 39.1 | -11.6 | Verti |
| ^  | 30.615M        | 48.8 | -27.3 | +17.6 | +1.2 | -10.0 | 30.3 | 39.1 | -8.8  | Verti |
| 30 | 145.530M       | 55.4 | -27.0 | +10.6 | +2.8 | -10.0 | 31.8 | 43.5 | -11.7 | Horiz |
| 31 | 129.150M       | 55.2 | -27.2 | +11.1 | +2.6 | -10.0 | 31.7 | 43.5 | -11.8 | Horiz |
| 32 | 138.584M<br>QP | 55.1 | -27.1 | +10.9 | +2.7 | -10.0 | 31.6 | 43.5 | -11.9 | Verti |
| ^  | 138.584M       | 58.2 | -27.1 | +10.9 | +2.7 | -10.0 | 34.7 | 43.5 | -8.8  | Verti |
| 34 | 138.007M<br>QP | 55.1 | -27.1 | +10.9 | +2.7 | -10.0 | 31.6 | 43.5 | -11.9 | Verti |
| ^  | 138.007M       | 58.7 | -27.1 | +10.9 | +2.7 | -10.0 | 35.2 | 43.5 | -8.3  | Verti |
| 36 | 126.740M<br>QP | 55.0 | -27.2 | +11.2 | +2.5 | -10.0 | 31.5 | 43.5 | -12.0 | Verti |
| ^  | 126.740M       | 59.0 | -27.2 | +11.2 | +2.5 | -10.0 | 35.5 | 43.5 | -8.0  | Verti |
| 38 | 134.358M<br>QP | 55.0 | -27.1 | +11.0 | +2.6 | -10.0 | 31.5 | 43.5 | -12.0 | Verti |
| ^  | 134.358M       | 59.1 | -27.1 | +11.0 | +2.6 | -10.0 | 35.6 | 43.5 | -7.9  | Verti |
| 40 | 150.094M       | 55.2 | -27.0 | +10.4 | +2.8 | -10.0 | 31.4 | 43.5 | -12.1 | Horiz |
| 41 | 140.090M       | 54.9 | -27.1 | +10.9 | +2.7 | -10.0 | 31.4 | 43.5 | -12.1 | Horiz |
| 42 | 162.470M       | 55.3 | -26.9 | +9.8  | +2.9 | -10.0 | 31.1 | 43.5 | -12.4 | Horiz |
| 43 | 157.100M<br>QP | 54.8 | -26.9 | +10.2 | +2.9 | -10.0 | 31.0 | 43.5 | -12.5 | Verti |
| ^  | 157.100M       | 57.4 | -26.9 | +10.2 | +2.9 | -10.0 | 33.6 | 43.5 | -9.9  | Verti |
| 45 | 158.970M<br>QP | 54.8 | -26.9 | +10.1 | +2.9 | -10.0 | 30.9 | 43.5 | -12.6 | Verti |
| ^  | 158.970M       | 57.5 | -26.9 | +10.1 | +2.9 | -10.0 | 33.6 | 43.5 | -9.9  | Verti |
| 47 | 780.094M<br>QP | 43.3 | -27.7 | +21.2 | +7.0 | -10.0 | 33.8 | 46.4 | -12.6 | Verti |
| ^  | 780.064M       | 46.3 | -27.7 | +21.2 | +7.0 | -10.0 | 36.8 | 46.4 | -9.6  | Verti |
| 49 | 127.960M       | 54.4 | -27.2 | +11.1 | +2.5 | -10.0 | 30.8 | 43.5 | -12.7 | Horiz |

|    |                |      |       |       |      |       |      |      |       |       |
|----|----------------|------|-------|-------|------|-------|------|------|-------|-------|
| 50 | 144.370M       | 54.1 | -27.0 | +10.7 | +2.7 | -10.0 | 30.5 | 43.5 | -13.0 | Horiz |
| 51 | 126.180M       | 53.9 | -27.2 | +11.2 | +2.5 | -10.0 | 30.4 | 43.5 | -13.1 | Horiz |
| 52 | 780.204M       | 42.5 | -27.7 | +21.2 | +7.0 | -10.0 | 33.0 | 46.4 | -13.4 | Horiz |
| 53 | 163.750M       | 54.3 | -26.9 | +9.7  | +2.9 | -10.0 | 30.0 | 43.5 | -13.5 | Horiz |
| 54 | 161.870M       | 54.0 | -26.9 | +9.9  | +2.9 | -10.0 | 29.9 | 43.5 | -13.6 | Horiz |
| 55 | 160.680M<br>QP | 53.8 | -26.9 | +10.0 | +2.9 | -10.0 | 29.8 | 43.5 | -13.7 | Verti |
| ^  | 160.680M       | 56.0 | -26.9 | +10.0 | +2.9 | -10.0 | 32.0 | 43.5 | -11.5 | Verti |
| 57 | 143.730M       | 53.3 | -27.0 | +10.7 | +2.7 | -10.0 | 29.7 | 43.5 | -13.8 | Horiz |
| 58 | 124.900M<br>QP | 53.2 | -27.2 | +11.2 | +2.5 | -10.0 | 29.7 | 43.5 | -13.8 | Verti |
| ^  | 124.900M       | 56.6 | -27.2 | +11.2 | +2.5 | -10.0 | 33.1 | 43.5 | -10.4 | Verti |
| 60 | 164.930M       | 53.9 | -26.9 | +9.6  | +2.9 | -10.0 | 29.5 | 43.5 | -14.0 | Horiz |
| 61 | 180.101M       | 54.9 | -26.8 | +8.2  | +3.1 | -10.0 | 29.4 | 43.5 | -14.1 | Horiz |
| 62 | 154.780M       | 52.7 | -27.0 | +10.3 | +2.8 | -10.0 | 28.8 | 43.5 | -14.7 | Verti |
| 63 | 154.650M<br>QP | 52.6 | -27.0 | +10.3 | +2.8 | -10.0 | 28.7 | 43.5 | -14.8 | Verti |
| ^  | 154.650M       | 55.7 | -27.0 | +10.3 | +2.8 | -10.0 | 31.8 | 43.5 | -11.7 | Verti |
| 65 | 250.102M<br>QP | 52.3 | -26.5 | +12.0 | +3.6 | -10.0 | 31.4 | 46.4 | -15.0 | Verti |
| ^  | 250.093M       | 53.5 | -26.5 | +12.0 | +3.6 | -10.0 | 32.6 | 46.4 | -13.8 | Verti |
| 67 | 162.870M<br>QP | 52.7 | -26.9 | +9.8  | +2.9 | -10.0 | 28.5 | 43.5 | -15.0 | Verti |
| ^  | 162.870M       | 54.9 | -26.9 | +9.8  | +2.9 | -10.0 | 30.7 | 43.5 | -12.8 | Verti |
| 69 | 123.060M<br>QP | 52.1 | -27.2 | +11.1 | +2.5 | -10.0 | 28.5 | 43.5 | -15.0 | Verti |
| ^  | 123.060M       | 56.2 | -27.2 | +11.1 | +2.5 | -10.0 | 32.6 | 43.5 | -10.9 | Verti |
| 71 | 122.120M<br>QP | 52.0 | -27.2 | +11.0 | +2.5 | -10.0 | 28.3 | 43.5 | -15.2 | Verti |
| ^  | 122.120M       | 55.3 | -27.2 | +10.9 | +2.5 | -10.0 | 31.5 | 43.5 | -12.0 | Verti |
| 73 | 820.328M       | 39.7 | -27.7 | +21.7 | +7.3 | -10.0 | 31.0 | 46.4 | -15.4 | Horiz |

|    |          |      |       |       |      |       |      |      |       |       |
|----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 74 | 143.130M | 51.7 | -27.1 | +10.7 | +2.7 | -10.0 | 28.0 | 43.5 | -15.5 | Horiz |
| 75 | 151.130M | 51.8 | -27.0 | +10.4 | +2.8 | -10.0 | 28.0 | 43.5 | -15.5 | Verti |
| 76 | 32.643M  | 42.9 | -27.3 | +16.6 | +1.3 | -10.0 | 23.5 | 39.1 | -15.6 | Verti |
| QP |          |      |       |       |      |       |      |      |       |       |
| ^  | 32.643M  | 47.0 | -27.3 | +16.5 | +1.3 | -10.0 | 27.5 | 39.1 | -11.6 | Verti |
| 78 | 165.610M | 52.3 | -26.9 | +9.5  | +2.9 | -10.0 | 27.8 | 43.5 | -15.7 | Horiz |
| 79 | 140.730M | 51.1 | -27.1 | +10.9 | +2.7 | -10.0 | 27.6 | 43.5 | -15.9 | Horiz |
| 80 | 940.064M | 36.3 | -27.2 | +23.4 | +8.0 | -10.0 | 30.5 | 46.4 | -15.9 | Verti |
| 81 | 165.020M | 52.1 | -26.9 | +9.5  | +2.9 | -10.0 | 27.6 | 43.5 | -15.9 | Verti |
| 82 | 800.251M | 39.7 | -27.7 | +21.4 | +7.0 | -10.0 | 30.4 | 46.4 | -16.0 | Verti |
| 83 | 124.370M | 50.9 | -27.2 | +11.2 | +2.5 | -10.0 | 27.4 | 43.5 | -16.1 | Horiz |
| 84 | 155.390M | 51.4 | -27.0 | +10.2 | +2.8 | -10.0 | 27.4 | 43.5 | -16.1 | Verti |
| 85 | 866.641M | 37.6 | -27.6 | +22.4 | +7.8 | -10.0 | 30.2 | 46.4 | -16.2 | Horiz |
| 86 | 150.510M | 51.0 | -27.0 | +10.4 | +2.8 | -10.0 | 27.2 | 43.5 | -16.3 | Verti |
| 87 | 173.520M | 52.1 | -26.8 | +8.7  | +3.0 | -10.0 | 27.0 | 43.5 | -16.5 | Verti |
| 88 | 166.833M | 51.5 | -26.9 | +9.4  | +2.9 | -10.0 | 26.9 | 43.5 | -16.6 | Verti |
| 89 | 167.400M | 51.5 | -26.9 | +9.3  | +2.9 | -10.0 | 26.8 | 43.5 | -16.7 | Horiz |
| 90 | 150.520M | 50.6 | -27.0 | +10.4 | +2.8 | -10.0 | 26.8 | 43.5 | -16.7 | Verti |
| 91 | 167.970M | 51.5 | -26.9 | +9.2  | +2.9 | -10.0 | 26.7 | 43.5 | -16.8 | Horiz |
| 92 | 900.026M | 36.0 | -27.3 | +22.8 | +8.1 | -10.0 | 29.6 | 46.4 | -16.8 | Verti |
| 93 | 566.741M | 42.7 | -27.8 | +18.6 | +6.0 | -10.0 | 29.5 | 46.4 | -16.9 | Verti |
| QP |          |      |       |       |      |       |      |      |       |       |
| ^  | 566.741M | 45.5 | -27.8 | +18.6 | +6.0 | -10.0 | 32.3 | 46.4 | -14.1 | Verti |
| 95 | 200.075M | 51.7 | -26.7 | +8.3  | +3.3 | -10.0 | 26.6 | 43.5 | -16.9 | Verti |
| 96 | 118.930M | 50.5 | -27.2 | +10.8 | +2.5 | -10.0 | 26.6 | 43.5 | -16.9 | Verti |
| QP |          |      |       |       |      |       |      |      |       |       |
| ^  | 118.930M | 53.8 | -27.2 | +10.8 | +2.5 | -10.0 | 29.9 | 43.5 | -13.6 | Verti |

|     |                |      |       |       |      |       |      |      |       |       |
|-----|----------------|------|-------|-------|------|-------|------|------|-------|-------|
| 98  | 152.350M       | 50.5 | -27.0 | +10.3 | +2.8 | -10.0 | 26.6 | 43.5 | -16.9 | Verti |
| 99  | 168.620M       | 51.1 | -26.8 | +9.2  | +3.0 | -10.0 | 26.5 | 43.5 | -17.0 | Horiz |
| 100 | 114.070M<br>QP | 50.8 | -27.2 | +10.5 | +2.4 | -10.0 | 26.5 | 43.5 | -17.0 | Verti |
| ^   | 114.070M       | 55.0 | -27.2 | +10.5 | +2.4 | -10.0 | 30.7 | 43.5 | -12.8 | Verti |
| 102 | 117.730M<br>QP | 50.4 | -27.2 | +10.8 | +2.4 | -10.0 | 26.4 | 43.5 | -17.1 | Verti |
| ^   | 117.730M       | 54.0 | -27.2 | +10.8 | +2.4 | -10.0 | 30.0 | 43.5 | -13.5 | Verti |
| 104 | 155.990M       | 50.2 | -26.9 | +10.2 | +2.9 | -10.0 | 26.4 | 43.5 | -17.1 | Verti |
| 105 | 180.200M       | 51.6 | -26.8 | +8.2  | +3.1 | -10.0 | 26.1 | 43.5 | -17.4 | Verti |
| 106 | 117.110M<br>QP | 50.0 | -27.2 | +10.7 | +2.4 | -10.0 | 25.9 | 43.5 | -17.6 | Verti |
| ^   | 117.110M       | 53.9 | -27.2 | +10.7 | +2.4 | -10.0 | 29.8 | 43.5 | -13.7 | Verti |
| 108 | 169.200M       | 50.5 | -26.8 | +9.1  | +3.0 | -10.0 | 25.8 | 43.5 | -17.7 | Horiz |
| 109 | 123.100M       | 49.3 | -27.2 | +11.1 | +2.5 | -10.0 | 25.7 | 43.5 | -17.8 | Horiz |
| 110 | 177.220M       | 51.1 | -26.8 | +8.4  | +3.0 | -10.0 | 25.7 | 43.5 | -17.8 | Verti |
| 111 | 169.910M       | 50.5 | -26.8 | +9.0  | +3.0 | -10.0 | 25.7 | 43.5 | -17.8 | Verti |
| 112 | 141.890M<br>QP | 49.3 | -27.1 | +10.8 | +2.7 | -10.0 | 25.7 | 43.5 | -17.8 | Verti |
| ^   | 141.890M       | 51.8 | -27.1 | +10.8 | +2.7 | -10.0 | 28.2 | 43.5 | -15.3 | Verti |
| 114 | 112.860M<br>QP | 50.1 | -27.2 | +10.4 | +2.4 | -10.0 | 25.7 | 43.5 | -17.8 | Verti |
| ^   | 112.860M       | 53.3 | -27.2 | +10.4 | +2.4 | -10.0 | 28.9 | 43.5 | -14.6 | Verti |
| 116 | 115.300M<br>QP | 49.9 | -27.2 | +10.6 | +2.4 | -10.0 | 25.7 | 43.5 | -17.8 | Verti |
| ^   | 115.300M       | 53.6 | -27.2 | +10.6 | +2.4 | -10.0 | 29.4 | 43.5 | -14.1 | Verti |
| 118 | 899.820M       | 34.7 | -27.3 | +22.8 | +8.1 | -10.0 | 28.3 | 46.4 | -18.1 | Horiz |
| 119 | 180.230M       | 50.7 | -26.8 | +8.2  | +3.1 | -10.0 | 25.2 | 43.5 | -18.3 | Verti |
| 120 | 169.820M       | 49.6 | -26.8 | +9.0  | +3.0 | -10.0 | 24.8 | 43.5 | -18.7 | Horiz |
| 121 | 900.016M       | 34.0 | -27.3 | +22.8 | +8.1 | -10.0 | 27.6 | 46.4 | -18.8 | Horiz |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 122 | 426.708M | 43.9 | -27.4 | +16.0 | +5.0 | -10.0 | 27.5 | 46.4 | -18.9 | Verti |
| 123 | 181.940M | 50.0 | -26.8 | +8.2  | +3.1 | -10.0 | 24.5 | 43.5 | -19.0 | Horiz |
| 124 | 179.010M | 49.9 | -26.8 | +8.3  | +3.1 | -10.0 | 24.5 | 43.5 | -19.0 | Verti |
| 125 | 175.330M | 49.8 | -26.8 | +8.5  | +3.0 | -10.0 | 24.5 | 43.5 | -19.0 | Verti |
| 126 | 179.040M | 49.7 | -26.8 | +8.3  | +3.1 | -10.0 | 24.3 | 43.5 | -19.2 | Verti |
| 127 | 184.380M | 49.5 | -26.8 | +8.2  | +3.1 | -10.0 | 24.0 | 43.5 | -19.5 | Horiz |
| 128 | 183.140M | 49.3 | -26.8 | +8.2  | +3.1 | -10.0 | 23.8 | 43.5 | -19.7 | Horiz |
| 129 | 866.881M | 33.9 | -27.6 | +22.4 | +7.8 | -10.0 | 26.5 | 46.4 | -19.9 | Verti |
| 130 | 120.690M | 47.2 | -27.2 | +10.9 | +2.5 | -10.0 | 23.4 | 43.5 | -20.1 | Horiz |
| 131 | 175.930M | 48.8 | -26.8 | +8.4  | +3.0 | -10.0 | 23.4 | 43.5 | -20.1 | Verti |
| 132 | 187.390M | 48.6 | -26.7 | +8.2  | +3.2 | -10.0 | 23.3 | 43.5 | -20.2 | Horiz |
| 133 | 177.820M | 48.8 | -26.8 | +8.3  | +3.0 | -10.0 | 23.3 | 43.5 | -20.2 | Verti |
| 134 | 112.190M | 47.5 | -27.2 | +10.4 | +2.4 | -10.0 | 23.1 | 43.5 | -20.4 | Horiz |
| 135 | 766.865M | 35.7 | -27.7 | +21.1 | +6.9 | -10.0 | 26.0 | 46.4 | -20.4 | Verti |
| 136 | 172.960M | 48.1 | -26.8 | +8.7  | +3.0 | -10.0 | 23.0 | 43.5 | -20.5 | Verti |
| 137 | 266.703M | 46.2 | -26.5 | +12.3 | +3.7 | -10.0 | 25.7 | 46.4 | -20.7 | Verti |
| 138 | 184.970M | 48.1 | -26.8 | +8.2  | +3.1 | -10.0 | 22.6 | 43.5 | -20.9 | Horiz |
| 139 | 140.110M | 46.1 | -27.1 | +10.9 | +2.7 | -10.0 | 22.6 | 43.5 | -20.9 | Verti |
|     | QP       |      |       |       |      |       |      |      |       |       |
| ^   | 140.110M | 48.7 | -27.1 | +10.9 | +2.7 | -10.0 | 25.2 | 43.5 | -18.3 | Verti |
| 141 | 186.770M | 48.0 | -26.8 | +8.2  | +3.1 | -10.0 | 22.5 | 43.5 | -21.0 | Horiz |
| 142 | 185.830M | 48.0 | -26.8 | +8.2  | +3.1 | -10.0 | 22.5 | 43.5 | -21.0 | Horiz |
| 143 | 460.068M | 41.1 | -27.6 | +16.7 | +5.1 | -10.0 | 25.3 | 46.4 | -21.1 | Verti |
| 144 | 840.056M | 33.3 | -27.7 | +22.0 | +7.6 | -10.0 | 25.2 | 46.4 | -21.2 | Horiz |
| 145 | 993.520M | 41.2 | -27.0 | +24.1 | +0.0 | -10.0 | 28.3 | 49.5 | -21.2 | Verti |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 146 | 766.657M | 34.8 | -27.7 | +21.0 | +6.9 | -10.0 | 25.0 | 46.4 | -21.4 | Horiz |
| 147 | 800.018M | 34.3 | -27.7 | +21.4 | +7.0 | -10.0 | 25.0 | 46.4 | -21.4 | Horiz |
| 148 | 625.079M | 37.2 | -27.9 | +19.4 | +6.2 | -10.0 | 24.9 | 46.4 | -21.5 | Verti |
| 149 | 174.780M | 47.2 | -26.8 | +8.5  | +3.0 | -10.0 | 21.9 | 43.5 | -21.6 | Verti |
| 150 | 250.094M | 45.6 | -26.5 | +12.0 | +3.6 | -10.0 | 24.7 | 46.4 | -21.7 | Horiz |
| 151 | 30.454M  | 35.8 | -27.3 | +17.6 | +1.2 | -10.0 | 17.3 | 39.1 | -21.8 | Horiz |
| 152 | 118.300M | 45.6 | -27.2 | +10.8 | +2.5 | -10.0 | 21.7 | 43.5 | -21.8 | Horiz |
| 153 | 188.580M | 46.9 | -26.7 | +8.2  | +3.2 | -10.0 | 21.6 | 43.5 | -21.9 | Horiz |
| 154 | 233.454M | 46.4 | -26.5 | +10.9 | +3.5 | -10.0 | 24.3 | 46.4 | -22.1 | Horiz |
| 155 | 566.749M | 37.4 | -27.8 | +18.6 | +6.0 | -10.0 | 24.2 | 46.4 | -22.2 | Horiz |
| 156 | 115.870M | 45.3 | -27.2 | +10.6 | +2.4 | -10.0 | 21.1 | 43.5 | -22.4 | Horiz |
| 157 | 600.043M | 36.7 | -27.8 | +19.1 | +5.9 | -10.0 | 23.9 | 46.4 | -22.5 | Verti |
| 158 | 700.059M | 34.4 | -27.8 | +20.3 | +6.8 | -10.0 | 23.7 | 46.4 | -22.7 | Horiz |
| 159 | 233.269M | 45.8 | -26.5 | +10.9 | +3.5 | -10.0 | 23.7 | 46.4 | -22.7 | Verti |
| 160 | 183.230M | 46.2 | -26.8 | +8.2  | +3.1 | -10.0 | 20.7 | 43.5 | -22.8 | Verti |
| 161 | 114.010M | 44.9 | -27.2 | +10.5 | +2.4 | -10.0 | 20.6 | 43.5 | -22.9 | Horiz |
| 162 | 700.040M | 34.2 | -27.8 | +20.3 | +6.8 | -10.0 | 23.5 | 46.4 | -22.9 | Verti |
| 163 | 666.775M | 34.8 | -27.9 | +19.9 | +6.5 | -10.0 | 23.3 | 46.4 | -23.1 | Verti |
| 164 | 499.857M | 38.0 | -27.8 | +17.4 | +5.5 | -10.0 | 23.1 | 46.4 | -23.3 | Horiz |
| 165 | 109.150M | 44.7 | -27.2 | +10.2 | +2.4 | -10.0 | 20.1 | 43.5 | -23.4 | Horiz |
| 166 | 200.061M | 44.8 | -26.7 | +8.3  | +3.3 | -10.0 | 19.7 | 43.5 | -23.8 | Horiz |
| 167 | 300.057M | 42.2 | -26.5 | +12.8 | +4.1 | -10.0 | 22.6 | 46.4 | -23.8 | Verti |
| 168 | 110.390M | 44.1 | -27.2 | +10.3 | +2.4 | -10.0 | 19.6 | 43.5 | -23.9 | Horiz |

|     |                |      |       |       |      |       |      |      |       |       |
|-----|----------------|------|-------|-------|------|-------|------|------|-------|-------|
| 169 | 154.150M<br>QP | 43.4 | -27.0 | +10.3 | +2.8 | -10.0 | 19.5 | 43.5 | -24.0 | Verti |
| ^   | 154.150M       | 54.2 | -27.0 | +10.3 | +2.8 | -10.0 | 30.3 | 43.5 | -13.2 | Verti |
| 171 | 190.480M       | 44.2 | -26.7 | +8.3  | +3.2 | -10.0 | 19.0 | 43.5 | -24.5 | Horiz |
| 172 | 107.670M       | 43.3 | -27.2 | +10.1 | +2.4 | -10.0 | 18.6 | 43.5 | -24.9 | Horiz |
| 173 | 450.095M       | 37.4 | -27.5 | +16.5 | +5.0 | -10.0 | 21.4 | 46.4 | -25.0 | Horiz |
| 174 | 280.020M       | 41.5 | -26.5 | +12.5 | +3.9 | -10.0 | 21.4 | 46.4 | -25.0 | Verti |
| 175 | 214.810M       | 42.1 | -26.6 | +9.5  | +3.4 | -10.0 | 18.4 | 43.5 | -25.1 | Verti |
| 176 | 185.100M       | 43.9 | -26.8 | +8.2  | +3.1 | -10.0 | 18.4 | 43.5 | -25.1 | Verti |
| 177 | 375.084M       | 38.6 | -27.0 | +14.8 | +4.8 | -10.0 | 21.2 | 46.4 | -25.2 | Verti |
| 178 | 188.080M       | 43.5 | -26.7 | +8.2  | +3.2 | -10.0 | 18.2 | 43.5 | -25.3 | Verti |
| 179 | 620.095M       | 33.4 | -27.9 | +19.4 | +6.1 | -10.0 | 21.0 | 46.4 | -25.4 | Horiz |
| 180 | 500.085M       | 35.8 | -27.8 | +17.4 | +5.5 | -10.0 | 20.9 | 46.4 | -25.5 | Verti |
| 181 | 275.110M       | 41.2 | -26.5 | +12.4 | +3.8 | -10.0 | 20.9 | 46.4 | -25.5 | Verti |
| 182 | 533.399M       | 34.6 | -27.8 | +18.0 | +5.8 | -10.0 | 20.6 | 46.4 | -25.8 | Verti |
| 183 | 450.103M       | 36.4 | -27.5 | +16.5 | +5.0 | -10.0 | 20.4 | 46.4 | -26.0 | Horiz |
| 184 | 333.407M       | 38.4 | -26.7 | +13.8 | +4.4 | -10.0 | 19.9 | 46.4 | -26.5 | Verti |
| 185 | 265.430M       | 40.4 | -26.5 | +12.3 | +3.7 | -10.0 | 19.9 | 46.4 | -26.5 | Verti |
| 186 | 450.058M       | 35.8 | -27.5 | +16.5 | +5.0 | -10.0 | 19.8 | 46.4 | -26.6 | Verti |
| 187 | 281.300M       | 39.9 | -26.5 | +12.5 | +3.9 | -10.0 | 19.8 | 46.4 | -26.6 | Verti |
| 188 | 400.039M       | 36.4 | -27.2 | +15.4 | +5.1 | -10.0 | 19.7 | 46.4 | -26.7 | Verti |
| 189 | 187.250M       | 41.9 | -26.7 | +8.2  | +3.2 | -10.0 | 16.6 | 43.5 | -26.9 | Verti |
| 190 | 466.749M       | 34.9 | -27.6 | +16.8 | +5.2 | -10.0 | 19.3 | 46.4 | -27.1 | Horiz |
| 191 | 460.061M       | 35.1 | -27.6 | +16.7 | +5.1 | -10.0 | 19.3 | 46.4 | -27.1 | Horiz |
| 192 | 225.110M       | 42.0 | -26.5 | +10.3 | +3.4 | -10.0 | 19.2 | 46.4 | -27.2 | Verti |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 193 | 273.330M | 39.3 | -26.5 | +12.4 | +3.8 | -10.0 | 19.0 | 46.4 | -27.4 | Verti |
| 194 | 221.480M | 42.1 | -26.5 | +10.0 | +3.4 | -10.0 | 19.0 | 46.4 | -27.4 | Verti |
| 195 | 220.580M | 42.2 | -26.5 | +9.9  | +3.4 | -10.0 | 19.0 | 46.4 | -27.4 | Verti |
| 196 | 276.950M | 39.2 | -26.5 | +12.4 | +3.8 | -10.0 | 18.9 | 46.4 | -27.5 | Verti |
| 197 | 251.760M | 39.8 | -26.5 | +12.0 | +3.6 | -10.0 | 18.9 | 46.4 | -27.5 | Verti |
| 198 | 104.336M | 41.0 | -27.2 | +9.8  | +2.3 | -10.0 | 15.9 | 43.5 | -27.6 | Horiz |
| 199 | 252.970M | 39.6 | -26.5 | +12.1 | +3.6 | -10.0 | 18.8 | 46.4 | -27.6 | Verti |
| 200 | 320.093M | 37.6 | -26.6 | +13.4 | +4.3 | -10.0 | 18.7 | 46.4 | -27.7 | Horiz |
| 201 | 87.350M  | 38.7 | -27.1 | +7.7  | +2.1 | -10.0 | 11.4 | 39.1 | -27.7 | Horiz |
| 202 | 226.640M | 41.4 | -26.5 | +10.4 | +3.4 | -10.0 | 18.7 | 46.4 | -27.7 | Verti |
| 203 | 301.870M | 38.1 | -26.5 | +12.9 | +4.1 | -10.0 | 18.6 | 46.4 | -27.8 | Verti |
| 204 | 278.740M | 38.8 | -26.5 | +12.5 | +3.8 | -10.0 | 18.6 | 46.4 | -27.8 | Verti |
| 205 | 218.410M | 42.0 | -26.6 | +9.8  | +3.4 | -10.0 | 18.6 | 46.4 | -27.8 | Verti |
| 206 | 189.910M | 40.9 | -26.7 | +8.3  | +3.2 | -10.0 | 15.7 | 43.5 | -27.8 | Verti |
| 207 | 304.220M | 37.9 | -26.5 | +12.9 | +4.1 | -10.0 | 18.4 | 46.4 | -28.0 | Verti |
| 208 | 222.980M | 41.4 | -26.5 | +10.1 | +3.4 | -10.0 | 18.4 | 46.4 | -28.0 | Verti |
| 209 | 216.930M | 42.0 | -26.6 | +9.6  | +3.4 | -10.0 | 18.4 | 46.4 | -28.0 | Verti |
| 210 | 420.122M | 34.7 | -27.3 | +15.8 | +5.1 | -10.0 | 18.3 | 46.4 | -28.1 | Horiz |
| 211 | 85.580M  | 38.5 | -27.1 | +7.5  | +2.1 | -10.0 | 11.0 | 39.1 | -28.1 | Horiz |
| 212 | 400.113M | 34.9 | -27.2 | +15.4 | +5.1 | -10.0 | 18.2 | 46.4 | -28.2 | Horiz |
| 213 | 366.702M | 35.8 | -26.9 | +14.6 | +4.7 | -10.0 | 18.2 | 46.4 | -28.2 | Horiz |
| 214 | 267.870M | 38.7 | -26.5 | +12.3 | +3.7 | -10.0 | 18.2 | 46.4 | -28.2 | Verti |
| 215 | 246.000M | 39.4 | -26.5 | +11.7 | +3.6 | -10.0 | 18.2 | 46.4 | -28.2 | Verti |
| 216 | 261.090M | 38.7 | -26.5 | +12.2 | +3.7 | -10.0 | 18.1 | 46.4 | -28.3 | Verti |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 217 | 235.740M | 40.1 | -26.5 | +11.0 | +3.5 | -10.0 | 18.1 | 46.4 | -28.3 | Verti |
| 218 | 86.760M  | 38.0 | -27.1 | +7.7  | +2.1 | -10.0 | 10.7 | 39.1 | -28.4 | Horiz |
| 219 | 269.030M | 38.4 | -26.5 | +12.3 | +3.8 | -10.0 | 18.0 | 46.4 | -28.4 | Verti |
| 220 | 393.418M | 34.7 | -27.2 | +15.3 | +5.0 | -10.0 | 17.8 | 46.4 | -28.6 | Verti |
| 221 | 270.290M | 38.2 | -26.5 | +12.3 | +3.8 | -10.0 | 17.8 | 46.4 | -28.6 | Verti |
| 222 | 237.540M | 39.6 | -26.5 | +11.2 | +3.5 | -10.0 | 17.8 | 46.4 | -28.6 | Verti |
| 223 | 433.421M | 34.0 | -27.4 | +16.1 | +5.0 | -10.0 | 17.7 | 46.4 | -28.7 | Verti |
| 224 | 307.330M | 37.0 | -26.5 | +13.0 | +4.2 | -10.0 | 17.7 | 46.4 | -28.7 | Verti |
| 225 | 264.210M | 38.3 | -26.5 | +12.2 | +3.7 | -10.0 | 17.7 | 46.4 | -28.7 | Verti |
| 226 | 102.129M | 39.9 | -27.2 | +9.7  | +2.3 | -10.0 | 14.7 | 43.5 | -28.8 | Horiz |
| 227 | 305.480M | 37.0 | -26.5 | +13.0 | +4.1 | -10.0 | 17.6 | 46.4 | -28.8 | Verti |
| 228 | 244.730M | 38.9 | -26.5 | +11.6 | +3.6 | -10.0 | 17.6 | 46.4 | -28.8 | Verti |
| 229 | 104.938M | 39.6 | -27.2 | +9.9  | +2.3 | -10.0 | 14.6 | 43.5 | -28.9 | Horiz |
| 230 | 466.743M | 33.1 | -27.6 | +16.8 | +5.2 | -10.0 | 17.5 | 46.4 | -28.9 | Verti |
| 231 | 310.970M | 36.8 | -26.6 | +13.1 | +4.2 | -10.0 | 17.5 | 46.4 | -28.9 | Verti |
| 232 | 298.230M | 37.1 | -26.5 | +12.8 | +4.1 | -10.0 | 17.5 | 46.4 | -28.9 | Verti |
| 233 | 239.320M | 39.2 | -26.5 | +11.3 | +3.5 | -10.0 | 17.5 | 46.4 | -28.9 | Verti |
| 234 | 500.106M | 32.3 | -27.8 | +17.4 | +5.5 | -10.0 | 17.4 | 46.4 | -29.0 | Horiz |
| 235 | 100.631M | 39.9 | -27.2 | +9.5  | +2.3 | -10.0 | 14.5 | 43.5 | -29.0 | Horiz |
| 236 | 425.086M | 33.9 | -27.4 | +15.9 | +5.0 | -10.0 | 17.4 | 46.4 | -29.0 | Verti |
| 237 | 283.630M | 37.4 | -26.5 | +12.6 | +3.9 | -10.0 | 17.4 | 46.4 | -29.0 | Verti |
| 238 | 243.590M | 38.7 | -26.5 | +11.6 | +3.6 | -10.0 | 17.4 | 46.4 | -29.0 | Verti |
| 239 | 249.620M | 38.3 | -26.5 | +12.0 | +3.6 | -10.0 | 17.4 | 46.4 | -29.0 | Verti |
| 240 | 309.780M | 36.6 | -26.6 | +13.1 | +4.2 | -10.0 | 17.3 | 46.4 | -29.1 | Verti |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 241 | 285.490M | 37.3 | -26.5 | +12.6 | +3.9 | -10.0 | 17.3 | 46.4 | -29.1 | Verti |
| 242 | 84.690M  | 37.5 | -27.1 | +7.4  | +2.1 | -10.0 | 9.9  | 39.1 | -29.2 | Horiz |
| 243 | 303.070M | 36.6 | -26.5 | +12.9 | +4.1 | -10.0 | 17.1 | 46.4 | -29.3 | Verti |
| 244 | 247.820M | 38.1 | -26.5 | +11.9 | +3.6 | -10.0 | 17.1 | 46.4 | -29.3 | Verti |
| 245 | 289.130M | 36.8 | -26.5 | +12.6 | +4.0 | -10.0 | 16.9 | 46.4 | -29.5 | Verti |
| 246 | 231.780M | 39.2 | -26.5 | +10.7 | +3.5 | -10.0 | 16.9 | 46.4 | -29.5 | Verti |
| 247 | 299.430M | 36.4 | -26.5 | +12.8 | +4.1 | -10.0 | 16.8 | 46.4 | -29.6 | Verti |
| 248 | 295.190M | 36.6 | -26.5 | +12.7 | +4.0 | -10.0 | 16.8 | 46.4 | -29.6 | Verti |
| 249 | 254.830M | 37.6 | -26.5 | +12.1 | +3.6 | -10.0 | 16.8 | 46.4 | -29.6 | Verti |
| 250 | 296.410M | 36.4 | -26.5 | +12.7 | +4.1 | -10.0 | 16.7 | 46.4 | -29.7 | Verti |
| 251 | 290.970M | 36.5 | -26.5 | +12.7 | +4.0 | -10.0 | 16.7 | 46.4 | -29.7 | Verti |
| 252 | 241.150M | 38.3 | -26.5 | +11.4 | +3.5 | -10.0 | 16.7 | 46.4 | -29.7 | Verti |
| 253 | 229.370M | 39.2 | -26.5 | +10.6 | +3.4 | -10.0 | 16.7 | 46.4 | -29.7 | Verti |
| 254 | 284.180M | 36.6 | -26.5 | +12.6 | +3.9 | -10.0 | 16.6 | 46.4 | -29.8 | Verti |
| 255 | 293.970M | 36.3 | -26.5 | +12.7 | +4.0 | -10.0 | 16.5 | 46.4 | -29.9 | Verti |
| 256 | 234.170M | 38.5 | -26.5 | +10.9 | +3.5 | -10.0 | 16.4 | 46.4 | -30.0 | Verti |
| 257 | 300.093M | 35.9 | -26.5 | +12.8 | +4.1 | -10.0 | 16.3 | 46.4 | -30.1 | Horiz |
| 258 | 259.360M | 36.6 | -26.5 | +12.2 | +3.7 | -10.0 | 16.0 | 46.4 | -30.4 | Verti |
| 259 | 433.304M | 32.0 | -27.4 | +16.1 | +5.0 | -10.0 | 15.7 | 46.4 | -30.7 | Horiz |
| 260 | 220.111M | 38.6 | -26.5 | +9.9  | +3.4 | -10.0 | 15.4 | 46.4 | -31.0 | Horiz |
| 261 | 94.870M  | 37.6 | -27.1 | +8.8  | +2.3 | -10.0 | 11.6 | 43.5 | -31.9 | Horiz |
| 262 | 300.059M | 33.3 | -26.5 | +12.8 | +4.1 | -10.0 | 13.7 | 46.4 | -32.7 | Horiz |
| 263 | 257.390M | 34.3 | -26.5 | +12.1 | +3.7 | -10.0 | 13.6 | 46.4 | -32.8 | Horiz |
| 264 | 259.200M | 33.9 | -26.5 | +12.2 | +3.7 | -10.0 | 13.3 | 46.4 | -33.1 | Horiz |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 265 | 266.788M | 33.7 | -26.5 | +12.3 | +3.7 | -10.0 | 13.2 | 46.4 | -33.2 | Horiz |
| 266 | 260.070M | 33.5 | -26.5 | +12.2 | +3.7 | -10.0 | 12.9 | 46.4 | -33.5 | Horiz |
| 267 | 258.300M | 33.5 | -26.5 | +12.1 | +3.7 | -10.0 | 12.8 | 46.4 | -33.6 | Horiz |
| 268 | 256.450M | 33.2 | -26.5 | +12.1 | +3.7 | -10.0 | 12.5 | 46.4 | -33.9 | Horiz |
| 269 | 248.910M | 33.5 | -26.5 | +11.9 | +3.6 | -10.0 | 12.5 | 46.4 | -33.9 | Horiz |
| 270 | 254.950M | 33.2 | -26.5 | +12.1 | +3.6 | -10.0 | 12.4 | 46.4 | -34.0 | Horiz |
| 271 | 245.570M | 32.3 | -26.5 | +11.7 | +3.6 | -10.0 | 11.1 | 46.4 | -35.3 | Horiz |
| 272 | 244.060M | 32.1 | -26.5 | +11.6 | +3.6 | -10.0 | 10.8 | 46.4 | -35.6 | Horiz |
| 273 | 247.360M | 31.7 | -26.5 | +11.8 | +3.6 | -10.0 | 10.6 | 46.4 | -35.8 | Horiz |
| 274 | 237.370M | 32.5 | -26.5 | +11.1 | +3.5 | -10.0 | 10.6 | 46.4 | -35.8 | Horiz |
| 275 | 235.880M | 32.4 | -26.5 | +11.0 | +3.5 | -10.0 | 10.4 | 46.4 | -36.0 | Horiz |
| 276 | 238.340M | 32.1 | -26.5 | +11.2 | +3.5 | -10.0 | 10.3 | 46.4 | -36.1 | Horiz |
| 277 | 234.960M | 32.2 | -26.5 | +11.0 | +3.5 | -10.0 | 10.2 | 46.4 | -36.2 | Horiz |
| 278 | 239.490M | 31.2 | -26.5 | +11.3 | +3.5 | -10.0 | 9.5  | 46.4 | -36.9 | Horiz |
| 279 | 243.130M | 30.9 | -26.5 | +11.5 | +3.5 | -10.0 | 9.4  | 46.4 | -37.0 | Horiz |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.109 CLASS A**  
 Work Order #: **82775**  
 Test Type: **Maximized Emissions**  
 Equipment: **Askey Atheros Radio**  
 Manufacturer: Digital Path  
 Model: Relay & Downlink  
 S/N: 110804-001

Date: 11/23/2004  
 Time: 14:25:28  
 Sequence#: 42  
 Tested By: Randal Clark

**Test Equipment:**

| Function        | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------|------------|------------------|--------------|---------|
| HP 8566B SA     | 2209A01404 | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA     | 2403A08241 | 02/26/2003       | 02/26/2005   | 00489   |
| Display         |            |                  |              |         |
| HP 85650A QPA   | 2811A01267 | 02/26/2003       | 02/26/2005   | 00478   |
| Chase CBL6111C  | 2456       | 12/13/2002       | 12/13/2004   | 01991   |
| Bilog           |            |                  |              |         |
| HP 8447D Preamp | 1937A02604 | 03/07/2003       | 03/07/2005   | 00099   |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N         |
|----------------------|--------------|------------------|-------------|
| Radio Power Supply   | Digital Path | CHMON v5.1       | 110804-001a |
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001  |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT power supply is located at the turn table. This test data is represents data collected from the Soekris motherboard. Test data is representative of both Relay and Downlink. Test data represents emissions from radio in receive mode, digital circuitry and power supply. Reported emissions represent the worst case. Two Ferrites installed on antenna lead from instance two radio. Test distance correction factor used in accordance with 15.31 20dB per decade. Frequency Range Investigated: 30-1000MHz. Temperature: 16°C, Relative Humidity: 36%. RBW = 120kHz, VBW = 120kHz.

**Transducer Legend:**

|                     |                 |
|---------------------|-----------------|
| T1=Amp - S/N 604    | T2=Bilog Site B |
| T3=Cable - 10 Meter |                 |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB |  | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|--|---------------|----------------|----------------|--------------|--------------|
| 1 | 166.767M    | 66.5         | -26.9    | +9.4     | +2.9     |  | -10.0         | 41.9           | 43.5           | -1.6         | Verti        |
|   | QP          |              |          |          |          |  |               |                |                |              |              |
| ^ | 166.744M    | 70.7         | -26.9    | +9.4     | +2.9     |  | -10.0         | 46.1           | 43.5           | +2.6         | Verti        |

|    |                |      |       |       |      |       |      |      |      |       |
|----|----------------|------|-------|-------|------|-------|------|------|------|-------|
| 3  | 566.743M<br>QP | 56.4 | -27.8 | +18.6 | +6.0 | -10.0 | 43.2 | 46.4 | -3.2 | Horiz |
| ^  | 566.743M       | 61.1 | -27.8 | +18.6 | +6.0 | -10.0 | 47.9 | 46.4 | +1.5 | Horiz |
| 5  | 300.072M<br>QP | 62.1 | -26.5 | +12.8 | +4.1 | -10.0 | 42.5 | 46.4 | -3.9 | Verti |
| ^  | 300.076M       | 63.6 | -26.5 | +12.8 | +4.1 | -10.0 | 44.0 | 46.4 | -2.4 | Verti |
| 7  | 300.086M<br>QP | 61.5 | -26.5 | +12.8 | +4.1 | -10.0 | 41.9 | 46.4 | -4.5 | Horiz |
| ^  | 300.108M       | 63.8 | -26.5 | +12.8 | +4.1 | -10.0 | 44.2 | 46.4 | -2.2 | Horiz |
| 9  | 633.337M<br>QP | 54.0 | -27.9 | +19.5 | +6.2 | -10.0 | 41.8 | 46.4 | -4.6 | Horiz |
| ^  | 633.337M       | 57.9 | -27.9 | +19.5 | +6.2 | -10.0 | 45.7 | 46.4 | -0.7 | Horiz |
| 11 | 433.399M       | 58.1 | -27.4 | +16.1 | +5.0 | -10.0 | 41.8 | 46.4 | -4.6 | Horiz |
| 12 | 125.090M       | 61.9 | -27.2 | +11.2 | +2.5 | -10.0 | 38.4 | 43.5 | -5.1 | Verti |
| 13 | 466.738M       | 56.3 | -27.6 | +16.8 | +5.2 | -10.0 | 40.7 | 46.4 | -5.7 | Horiz |
| 14 | 766.600M       | 50.4 | -27.7 | +21.0 | +6.9 | -10.0 | 40.6 | 46.4 | -5.8 | Horiz |
| 15 | 766.590M       | 50.1 | -27.7 | +21.0 | +6.9 | -10.0 | 40.3 | 46.4 | -6.1 | Horiz |
| 16 | 600.048M       | 53.0 | -27.8 | +19.1 | +5.9 | -10.0 | 40.2 | 46.4 | -6.2 | Horiz |
| 17 | 800.184M       | 48.8 | -27.7 | +21.4 | +7.0 | -10.0 | 39.5 | 46.4 | -6.9 | Horiz |
| 18 | 133.411M       | 59.3 | -27.1 | +11.0 | +2.6 | -10.0 | 35.8 | 43.5 | -7.7 | Verti |
| 19 | 389.020M       | 55.4 | -27.1 | +15.1 | +5.0 | -10.0 | 38.4 | 46.4 | -8.0 | Verti |
| 20 | 211.380M       | 59.3 | -26.6 | +9.2  | +3.3 | -10.0 | 35.2 | 43.5 | -8.3 | Verti |
| 21 | 366.780M       | 55.2 | -26.9 | +14.6 | +4.7 | -10.0 | 37.6 | 46.4 | -8.8 | Horiz |
| 22 | 600.028M       | 50.4 | -27.8 | +19.1 | +5.9 | -10.0 | 37.6 | 46.4 | -8.8 | Horiz |
| 23 | 666.661M       | 49.0 | -27.9 | +19.9 | +6.5 | -10.0 | 37.5 | 46.4 | -8.9 | Horiz |
| 24 | 233.401M       | 59.1 | -26.5 | +10.9 | +3.5 | -10.0 | 37.0 | 46.4 | -9.4 | Horiz |
| 25 | 66.745M        | 59.0 | -27.2 | +5.8  | +1.8 | -10.0 | 29.4 | 39.1 | -9.7 | Verti |
| 26 | 166.735M       | 58.4 | -26.9 | +9.4  | +2.9 | -10.0 | 33.8 | 43.5 | -9.7 | Horiz |

|    |          |      |       |       |      |       |      |      |       |       |
|----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 27 | 233.440M | 58.4 | -26.5 | +10.9 | +3.5 | -10.0 | 36.3 | 46.4 | -10.1 | Verti |
| 28 | 433.481M | 52.5 | -27.4 | +16.1 | +5.0 | -10.0 | 36.2 | 46.4 | -10.2 | Verti |
| 29 | 384.050M | 53.3 | -27.1 | +15.0 | +4.9 | -10.0 | 36.1 | 46.4 | -10.3 | Verti |
| 30 | 633.337M | 48.1 | -27.9 | +19.5 | +6.2 | -10.0 | 35.9 | 46.4 | -10.5 | Verti |
| 31 | 477.780M | 51.2 | -27.7 | +17.0 | +5.3 | -10.0 | 35.8 | 46.4 | -10.6 | Horiz |
| 32 | 576.100M | 48.7 | -27.8 | +18.7 | +5.9 | -10.0 | 35.5 | 46.4 | -10.9 | Horiz |
| 33 | 566.394M | 48.6 | -27.8 | +18.6 | +6.0 | -10.0 | 35.4 | 46.4 | -11.0 | Verti |
| 34 | 400.040M | 51.9 | -27.2 | +15.4 | +5.1 | -10.0 | 35.2 | 46.4 | -11.2 | Horiz |
| 35 | 866.470M | 42.3 | -27.6 | +22.3 | +7.8 | -10.0 | 34.8 | 46.4 | -11.6 | Horiz |
| 36 | 833.103M | 43.0 | -27.7 | +21.9 | +7.5 | -10.0 | 34.7 | 46.4 | -11.7 | Verti |
| 37 | 177.820M | 57.2 | -26.8 | +8.3  | +3.0 | -10.0 | 31.7 | 43.5 | -11.8 | Verti |
| 38 | 122.301M | 55.4 | -27.2 | +11.0 | +2.5 | -10.0 | 31.7 | 43.5 | -11.8 | Horiz |
| 39 | 250.097M | 55.4 | -26.5 | +12.0 | +3.6 | -10.0 | 34.5 | 46.4 | -11.9 | Verti |
| 40 | 867.054M | 41.7 | -27.6 | +22.4 | +7.8 | -10.0 | 34.3 | 46.4 | -12.1 | Verti |
| 41 | 500.053M | 49.1 | -27.8 | +17.4 | +5.5 | -10.0 | 34.2 | 46.4 | -12.2 | Verti |
| 42 | 200.120M | 56.2 | -26.7 | +8.3  | +3.3 | -10.0 | 31.1 | 43.5 | -12.4 | Verti |
| 43 | 133.419M | 54.6 | -27.1 | +11.0 | +2.6 | -10.0 | 31.1 | 43.5 | -12.4 | Horiz |
| 44 | 666.737M | 45.2 | -27.9 | +19.9 | +6.5 | -10.0 | 33.7 | 46.4 | -12.7 | Verti |
| 45 | 466.699M | 49.3 | -27.6 | +16.8 | +5.2 | -10.0 | 33.7 | 46.4 | -12.7 | Verti |
| 46 | 266.743M | 54.2 | -26.5 | +12.3 | +3.7 | -10.0 | 33.7 | 46.4 | -12.7 | Verti |
| 47 | 867.040M | 41.0 | -27.6 | +22.4 | +7.8 | -10.0 | 33.6 | 46.4 | -12.8 | Verti |
| 48 | 733.418M | 43.4 | -27.7 | +20.7 | +6.9 | -10.0 | 33.3 | 46.4 | -13.1 | Horiz |
| 49 | 125.104M | 53.9 | -27.2 | +11.2 | +2.5 | -10.0 | 30.4 | 43.5 | -13.1 | Horiz |
| 50 | 500.060M | 48.1 | -27.8 | +17.4 | +5.5 | -10.0 | 33.2 | 46.4 | -13.2 | Horiz |

|    |          |      |       |       |      |       |      |      |       |       |
|----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 51 | 400.024M | 49.5 | -27.2 | +15.4 | +5.1 | -10.0 | 32.8 | 46.4 | -13.6 | Verti |
| 52 | 250.098M | 53.3 | -26.5 | +12.0 | +3.6 | -10.0 | 32.4 | 46.4 | -14.0 | Horiz |
| 53 | 922.260M | 38.2 | -27.3 | +23.1 | +8.2 | -10.0 | 32.2 | 46.4 | -14.2 | Verti |
| 54 | 200.128M | 53.7 | -26.7 | +8.3  | +3.3 | -10.0 | 28.6 | 43.5 | -14.9 | Verti |
| 55 | 833.434M | 39.4 | -27.7 | +21.9 | +7.5 | -10.0 | 31.1 | 46.4 | -15.3 | Horiz |
| 56 | 200.100M | 53.2 | -26.7 | +8.3  | +3.3 | -10.0 | 28.1 | 43.5 | -15.4 | Horiz |
| 57 | 411.230M | 47.2 | -27.3 | +15.6 | +5.1 | -10.0 | 30.6 | 46.4 | -15.8 | Verti |
| 58 | 444.490M | 46.8 | -27.5 | +16.3 | +5.0 | -10.0 | 30.6 | 46.4 | -15.8 | Horiz |
| 59 | 900.404M | 37.0 | -27.3 | +22.8 | +8.1 | -10.0 | 30.6 | 46.4 | -15.8 | Horiz |
| 60 | 800.186M | 39.6 | -27.7 | +21.4 | +7.0 | -10.0 | 30.3 | 46.4 | -16.1 | Verti |
| 61 | 700.002M | 41.0 | -27.8 | +20.3 | +6.8 | -10.0 | 30.3 | 46.4 | -16.1 | Verti |
| 62 | 955.440M | 36.1 | -27.2 | +23.6 | +7.8 | -10.0 | 30.3 | 46.4 | -16.1 | Horiz |
| 63 | 655.520M | 42.0 | -28.0 | +19.8 | +6.4 | -10.0 | 30.2 | 46.4 | -16.2 | Horiz |
| 64 | 366.814M | 47.7 | -26.9 | +14.6 | +4.7 | -10.0 | 30.1 | 46.4 | -16.3 | Horiz |
| 65 | 266.676M | 50.5 | -26.5 | +12.3 | +3.7 | -10.0 | 30.0 | 46.4 | -16.4 | Horiz |
| 66 | 955.400M | 35.6 | -27.2 | +23.6 | +7.8 | -10.0 | 29.8 | 46.4 | -16.6 | Verti |
| 67 | 933.484M | 35.6 | -27.2 | +23.3 | +8.1 | -10.0 | 29.8 | 46.4 | -16.6 | Horiz |
| 68 | 899.905M | 36.0 | -27.3 | +22.8 | +8.1 | -10.0 | 29.6 | 46.4 | -16.8 | Verti |
| 69 | 655.580M | 41.2 | -28.0 | +19.8 | +6.4 | -10.0 | 29.4 | 46.4 | -17.0 | Verti |
| 70 | 922.590M | 35.3 | -27.3 | +23.1 | +8.2 | -10.0 | 29.3 | 46.4 | -17.1 | Horiz |
| 71 | 388.930M | 46.1 | -27.1 | +15.1 | +5.0 | -10.0 | 29.1 | 46.4 | -17.3 | Horiz |
| 72 | 766.785M | 38.7 | -27.7 | +21.1 | +6.9 | -10.0 | 29.0 | 46.4 | -17.4 | Verti |
| 73 | 355.530M | 45.9 | -26.8 | +14.3 | +4.6 | -10.0 | 28.0 | 46.4 | -18.4 | Horiz |
| 74 | 944.720M | 33.5 | -27.2 | +23.4 | +7.9 | -10.0 | 27.6 | 46.4 | -18.8 | Verti |

|    |          |      |       |       |      |       |      |      |       |       |
|----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 75 | 333.372M | 46.0 | -26.7 | +13.8 | +4.4 | -10.0 | 27.5 | 46.4 | -18.9 | Verti |
| 76 | 533.404M | 41.5 | -27.8 | +18.0 | +5.8 | -10.0 | 27.5 | 46.4 | -18.9 | Horiz |
| 77 | 733.529M | 37.5 | -27.7 | +20.7 | +6.9 | -10.0 | 27.4 | 46.4 | -19.0 | Verti |
| 78 | 978.060M | 35.8 | -27.1 | +23.9 | +7.9 | -10.0 | 30.5 | 49.5 | -19.0 | Horiz |
| 79 | 625.060M | 39.7 | -27.9 | +19.4 | +6.2 | -10.0 | 27.4 | 46.4 | -19.0 | Horiz |
| 80 | 336.070M | 45.8 | -26.7 | +13.8 | +4.4 | -10.0 | 27.3 | 46.4 | -19.1 | Horiz |
| 81 | 966.758M | 35.4 | -27.1 | +23.8 | +7.9 | -10.0 | 30.0 | 49.5 | -19.5 | Verti |
| 82 | 744.480M | 36.9 | -27.7 | +20.8 | +6.9 | -10.0 | 26.9 | 46.4 | -19.5 | Horiz |
| 83 | 244.510M | 48.1 | -26.5 | +11.6 | +3.6 | -10.0 | 26.8 | 46.4 | -19.6 | Verti |
| 84 | 240.030M | 48.4 | -26.5 | +11.3 | +3.5 | -10.0 | 26.7 | 46.4 | -19.7 | Verti |
| 85 | 144.570M | 47.1 | -27.0 | +10.7 | +2.7 | -10.0 | 23.5 | 43.5 | -20.0 | Verti |
| 86 | 600.056M | 39.2 | -27.8 | +19.1 | +5.9 | -10.0 | 26.4 | 46.4 | -20.0 | Verti |
| 87 | 240.082M | 48.1 | -26.5 | +11.3 | +3.5 | -10.0 | 26.4 | 46.4 | -20.0 | Horiz |
| 88 | 275.081M | 46.6 | -26.5 | +12.4 | +3.8 | -10.0 | 26.3 | 46.4 | -20.1 | Verti |
| 89 | 199.332M | 48.5 | -26.7 | +8.3  | +3.3 | -10.0 | 23.4 | 43.5 | -20.1 | Horiz |
| 90 | 175.090M | 48.0 | -26.8 | +8.5  | +3.0 | -10.0 | 22.7 | 43.5 | -20.8 | Verti |
| 91 | 495.330M | 40.6 | -27.8 | +17.3 | +5.5 | -10.0 | 25.6 | 46.4 | -20.8 | Horiz |
| 92 | 640.012M | 37.6 | -28.0 | +19.6 | +6.3 | -10.0 | 25.5 | 46.4 | -20.9 | Horiz |
| 93 | 489.320M | 40.5 | -27.7 | +17.2 | +5.4 | -10.0 | 25.4 | 46.4 | -21.0 | Horiz |
| 94 | 432.150M | 41.7 | -27.4 | +16.1 | +5.0 | -10.0 | 25.4 | 46.4 | -21.0 | Horiz |
| 95 | 333.460M | 43.8 | -26.7 | +13.8 | +4.4 | -10.0 | 25.3 | 46.4 | -21.1 | Horiz |
| 96 | 432.140M | 41.5 | -27.4 | +16.1 | +5.0 | -10.0 | 25.2 | 46.4 | -21.2 | Verti |
| 97 | 111.650M | 46.6 | -27.2 | +10.3 | +2.4 | -10.0 | 22.1 | 43.5 | -21.4 | Verti |
| 98 | 112.320M | 46.4 | -27.2 | +10.4 | +2.4 | -10.0 | 22.0 | 43.5 | -21.5 | Verti |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 99  | 672.060M | 36.0 | -27.9 | +20.0 | +6.6 | -10.0 | 24.7 | 46.4 | -21.7 | Horiz |
| 100 | 811.120M | 32.7 | -27.7 | +21.6 | +7.2 | -10.0 | 23.8 | 46.4 | -22.6 | Horiz |
| 101 | 66.753M  | 46.1 | -27.2 | +5.8  | +1.8 | -10.0 | 16.5 | 39.1 | -22.6 | Horiz |
| 102 | 422.390M | 39.9 | -27.3 | +15.9 | +5.1 | -10.0 | 23.6 | 46.4 | -22.8 | Verti |
| 103 | 480.256M | 39.0 | -27.7 | +17.0 | +5.3 | -10.0 | 23.6 | 46.4 | -22.8 | Horiz |
| 104 | 989.120M | 31.5 | -27.0 | +24.1 | +8.0 | -10.0 | 26.6 | 49.5 | -22.9 | Horiz |
| 105 | 366.800M | 40.6 | -26.9 | +14.6 | +4.7 | -10.0 | 23.0 | 46.4 | -23.4 | Verti |
| 106 | 642.190M | 35.0 | -28.0 | +19.6 | +6.3 | -10.0 | 22.9 | 46.4 | -23.5 | Verti |
| 107 | 218.804M | 46.0 | -26.5 | +9.8  | +3.4 | -10.0 | 22.7 | 46.4 | -23.7 | Horiz |
| 108 | 115.160M | 43.3 | -27.2 | +10.6 | +2.4 | -10.0 | 19.1 | 43.5 | -24.4 | Verti |
| 109 | 533.428M | 35.9 | -27.8 | +18.0 | +5.8 | -10.0 | 21.9 | 46.4 | -24.5 | Verti |
| 110 | 255.610M | 42.3 | -26.5 | +12.1 | +3.6 | -10.0 | 21.5 | 46.4 | -24.9 | Verti |
| 111 | 143.350M | 42.1 | -27.0 | +10.7 | +2.7 | -10.0 | 18.5 | 43.5 | -25.0 | Horiz |
| 112 | 377.900M | 38.6 | -27.0 | +14.9 | +4.8 | -10.0 | 21.3 | 46.4 | -25.1 | Verti |
| 113 | 750.050M | 31.2 | -27.7 | +20.9 | +6.9 | -10.0 | 21.3 | 46.4 | -25.1 | Horiz |
| 114 | 560.086M | 34.5 | -27.8 | +18.5 | +6.0 | -10.0 | 21.2 | 46.4 | -25.2 | Horiz |
| 115 | 288.950M | 41.0 | -26.5 | +12.6 | +4.0 | -10.0 | 21.1 | 46.4 | -25.3 | Horiz |
| 116 | 137.870M | 41.4 | -27.1 | +10.9 | +2.7 | -10.0 | 17.9 | 43.5 | -25.6 | Horiz |
| 117 | 377.880M | 38.0 | -27.0 | +14.9 | +4.8 | -10.0 | 20.7 | 46.4 | -25.7 | Horiz |
| 118 | 222.310M | 43.6 | -26.5 | +10.1 | +3.4 | -10.0 | 20.6 | 46.4 | -25.8 | Verti |
| 119 | 375.094M | 38.0 | -27.0 | +14.8 | +4.8 | -10.0 | 20.6 | 46.4 | -25.8 | Verti |
| 120 | 444.480M | 36.7 | -27.5 | +16.3 | +5.0 | -10.0 | 20.5 | 46.4 | -25.9 | Verti |
| 121 | 277.860M | 40.6 | -26.5 | +12.5 | +3.8 | -10.0 | 20.4 | 46.4 | -26.0 | Verti |
| 122 | 322.320M | 39.2 | -26.6 | +13.4 | +4.3 | -10.0 | 20.3 | 46.4 | -26.1 | Verti |

|     |          |      |       |       |      |       |      |      |       |       |
|-----|----------|------|-------|-------|------|-------|------|------|-------|-------|
| 123 | 375.080M | 37.2 | -27.0 | +14.8 | +4.8 | -10.0 | 19.8 | 46.4 | -26.6 | Horiz |
| 124 | 625.046M | 32.0 | -27.9 | +19.4 | +6.2 | -10.0 | 19.7 | 46.4 | -26.7 | Verti |
| 125 | 144.130M | 40.1 | -27.0 | +10.7 | +2.7 | -10.0 | 16.5 | 43.5 | -27.0 | Horiz |
| 126 | 420.112M | 35.7 | -27.3 | +15.8 | +5.1 | -10.0 | 19.3 | 46.4 | -27.1 | Horiz |
| 127 | 147.520M | 39.0 | -27.0 | +10.5 | +2.8 | -10.0 | 15.3 | 43.5 | -28.2 | Horiz |
| 128 | 289.020M | 37.5 | -26.5 | +12.6 | +4.0 | -10.0 | 17.6 | 46.4 | -28.8 | Verti |
| 129 | 375.080M | 35.0 | -27.0 | +14.8 | +4.8 | -10.0 | 17.6 | 46.4 | -28.8 | Horiz |
| 130 | 384.060M | 34.0 | -27.1 | +15.0 | +4.9 | -10.0 | 16.8 | 46.4 | -29.6 | Horiz |
| 131 | 142.750M | 37.5 | -27.1 | +10.8 | +2.7 | -10.0 | 13.9 | 43.5 | -29.6 | Horiz |
| 132 | 311.140M | 35.8 | -26.6 | +13.1 | +4.2 | -10.0 | 16.5 | 46.4 | -29.9 | Verti |
| 133 | 146.170M | 35.8 | -27.0 | +10.6 | +2.8 | -10.0 | 12.2 | 43.5 | -31.3 | Horiz |
| 134 | 350.078M | 32.8 | -26.8 | +14.2 | +4.5 | -10.0 | 14.7 | 46.4 | -31.7 | Horiz |
| 135 | 225.087M | 36.6 | -26.5 | +10.3 | +3.4 | -10.0 | 13.8 | 46.4 | -32.6 | Verti |
| 136 | 141.920M | 33.2 | -27.1 | +10.8 | +2.7 | -10.0 | 9.6  | 43.5 | -33.9 | Horiz |
| 137 | 225.066M | 34.9 | -26.5 | +10.3 | +3.4 | -10.0 | 12.1 | 46.4 | -34.3 | Horiz |
| 138 | 149.550M | 31.7 | -27.0 | +10.4 | +2.8 | -10.0 | 7.9  | 43.5 | -35.6 | Horiz |

## **FCC 15.207 – AC CONDUCTED EMISSIONS**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.207 - AVE**  
 Work Order #: **82775**  
 Test Type: **Conducted Emissions**  
 Equipment: **Askey Atheros Radio**  
 Manufacturer: **Digital Path**  
 Model: **Relay**  
 S/N: **111504-002**

Date: 11/23/2004  
 Time: 15:53:57  
 Sequence#: 45  
 Tested By: Randal Clark  
 120V 60Hz

### ***Test Equipment:***

| Function                     | S/N               | Calibration Date | Cal Due Date | Asset # |
|------------------------------|-------------------|------------------|--------------|---------|
| HP 8566B SA                  | 2209A01404        | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display          | 2403A08241        | 02/26/2003       | 02/26/2005   | 00489   |
| HP 85650A QPA                | 2811A01267        | 02/26/2003       | 02/26/2005   | 00478   |
| LISN Model 8028-50-TS-24-BNC | 8379276 & 8379280 | 06/05/2003       | 06/05/2005   | 00330   |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model #    | S/N         |
|----------------------|--------------|------------|-------------|
| Askey Atheros Radio* | Digital Path | Relay      | 111504-002  |
| Radio Power Supply   | Digital Path | CHMON v5.1 | 110804-001a |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

### ***Test Conditions / Notes:***

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT operating in a mode representative of worst case using Soekris motherboard. EUT is in continuous transmit mode. Motherboard powered by 28VDC. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 17°C, Relative Humidity: 48%.

### ***Transducer Legend:***

|                           |                               |
|---------------------------|-------------------------------|
| T1=Cable - Internal + cab | T2=LISN Insertion Loss s/n280 |
| T3=HP Filter AN02608      |                               |

### ***Measurement Data:***

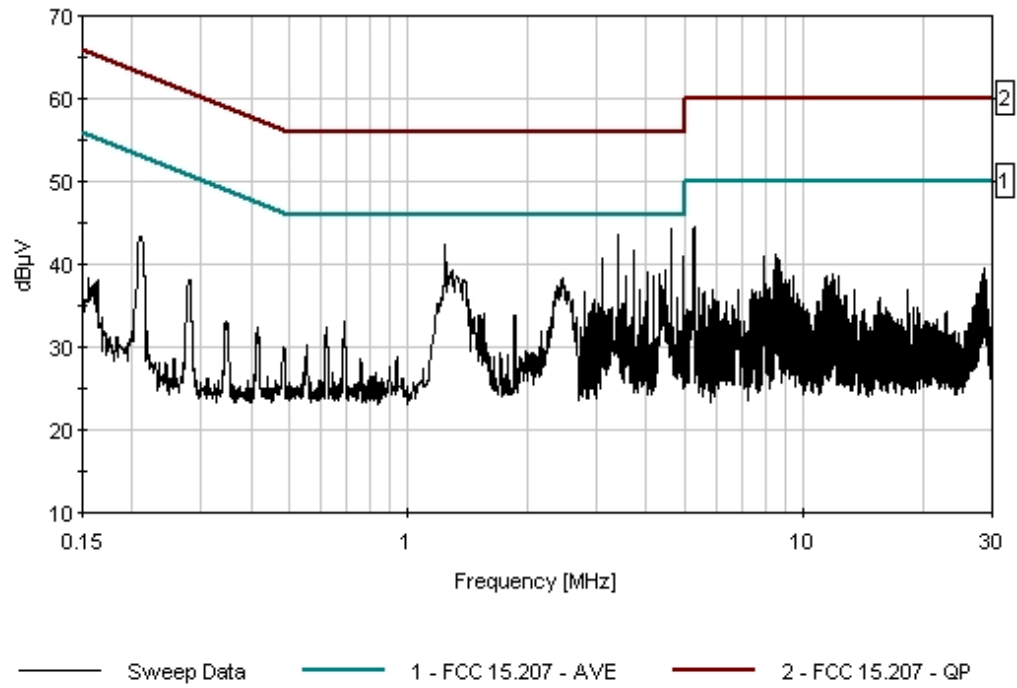
Reading listed by margin.

Test Lead: Black

| #   | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|-----|-------------|--------------|----------|----------|----------|------------|---------------|--------------|--------------|--------------|--------------|
| 1   | 3.403M      | 43.3         | +0.3     | +0.3     | +0.1     |            | +0.0          | 44.0         | 46.0         | -2.0         | Black        |
| Ave |             |              |          |          |          |            |               |              |              |              |              |
| ^   | 3.403M      | 44.1         | +0.3     | +0.3     | +0.1     |            | +0.0          | 44.8         | 46.0         | -1.2         | Black        |
| 3   | 4.640M      | 42.3         | +0.3     | +0.3     | +0.1     |            | +0.0          | 43.0         | 46.0         | -3.0         | Black        |
| Ave |             |              |          |          |          |            |               |              |              |              |              |
| ^   | 4.640M      | 42.6         | +0.3     | +0.3     | +0.1     |            | +0.0          | 43.3         | 46.0         | -2.7         | Black        |

|     |        |      |      |      |      |      |      |      |      |       |
|-----|--------|------|------|------|------|------|------|------|------|-------|
| 5   | 3.705M | 40.9 | +0.3 | +0.4 | +0.1 | +0.0 | 41.7 | 46.0 | -4.3 | Black |
| 6   | 4.943M | 40.3 | +0.3 | +0.3 | +0.1 | +0.0 | 41.0 | 46.0 | -5.0 | Black |
| 7   | 3.089M | 40.0 | +0.3 | +0.3 | +0.1 | +0.0 | 40.7 | 46.0 | -5.3 | Black |
| 8   | 5.282M | 43.8 | +0.3 | +0.3 | +0.1 | +0.0 | 44.5 | 50.0 | -5.5 | Black |
| 9   | 4.479M | 38.5 | +0.3 | +0.3 | +0.1 | +0.0 | 39.2 | 46.0 | -6.8 | Black |
| 10  | 4.020M | 38.3 | +0.3 | +0.4 | +0.1 | +0.0 | 39.1 | 46.0 | -6.9 | Black |
| 11  | 4.326M | 38.1 | +0.3 | +0.4 | +0.1 | +0.0 | 38.9 | 46.0 | -7.1 | Black |
| 12  | 1.241M | 38.1 | +0.2 | +0.3 | +0.2 | +0.0 | 38.8 | 46.0 | -7.2 | Black |
| Ave | 1.241M | 47.8 | +0.2 | +0.3 | +0.2 | +0.0 | 48.5 | 46.0 | +2.5 | Black |
| 14  | 3.556M | 37.8 | +0.3 | +0.4 | +0.1 | +0.0 | 38.6 | 46.0 | -7.4 | Black |
| 15  | 4.173M | 37.8 | +0.3 | +0.4 | +0.1 | +0.0 | 38.6 | 46.0 | -7.4 | Black |
| 16  | 2.451M | 37.6 | +0.3 | +0.3 | +0.1 | +0.0 | 38.3 | 46.0 | -7.7 | Black |
| 17  | 4.373M | 36.7 | +0.3 | +0.4 | +0.1 | +0.0 | 37.5 | 46.0 | -8.5 | Black |
| 18  | 8.516M | 40.4 | +0.3 | +0.5 | +0.1 | +0.0 | 41.3 | 50.0 | -8.7 | Black |
| 19  | 3.858M | 36.2 | +0.3 | +0.4 | +0.1 | +0.0 | 37.0 | 46.0 | -9.0 | Black |
| 20  | 4.403M | 36.2 | +0.3 | +0.4 | +0.1 | +0.0 | 37.0 | 46.0 | -9.0 | Black |
| 21  | 7.940M | 40.1 | +0.3 | +0.5 | +0.1 | +0.0 | 41.0 | 50.0 | -9.0 | Black |
| 22  | 2.782M | 35.9 | +0.3 | +0.3 | +0.1 | +0.0 | 36.6 | 46.0 | -9.4 | Black |
| 23  | 8.588M | 39.7 | +0.3 | +0.5 | +0.1 | +0.0 | 40.6 | 50.0 | -9.4 | Black |

CKC Laboratories, Inc. Date: 11/23/2004 Time: 15:53:57 Digital Path WFO#: 82775  
FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 45



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**

Specification: **FCC 15.207 - AVE**

Work Order #: **82775**

Date: 11/23/2004

Test Type: **Conducted Emissions**

Time: 16:00:53

Equipment: **Askey Atheros Radio**

Sequence#: 46

Manufacturer: Digital Path

Tested By: Randal Clark

Model: Relay

120V 60Hz

S/N: 111504-002

#### **Test Equipment:**

| Function                     | S/N               | Calibration Date | Cal Due Date | Asset # |
|------------------------------|-------------------|------------------|--------------|---------|
| HP 8566B SA                  | 2209A01404        | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display          | 2403A08241        | 02/26/2003       | 02/26/2005   | 00489   |
| HP 85650A QPA                | 2811A01267        | 02/26/2003       | 02/26/2005   | 00478   |
| LISN Model 8028-50-TS-24-BNC | 8379276 & 8379280 | 06/05/2003       | 06/05/2005   | 00330   |

#### **Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #    | S/N         |
|----------------------|--------------|------------|-------------|
| Askey Atheros Radio* | Digital Path | Relay      | 111504-002  |
| Radio Power Supply   | Digital Path | CHMON v5.1 | 110804-001a |

#### **Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

#### **Test Conditions / Notes:**

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT operating in a mode representative of worst case using Soekris motherboard. EUT is in continuous transmit mode. Motherboard powered by 28VDC. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 17°C, Relative Humidity: 48%.

#### **Transducer Legend:**

|                           |                               |
|---------------------------|-------------------------------|
| T1=Cable - Internal + cab | T2=LISN Insertion Loss s/n276 |
| T3=HP Filter AN02608      |                               |

#### **Measurement Data:**

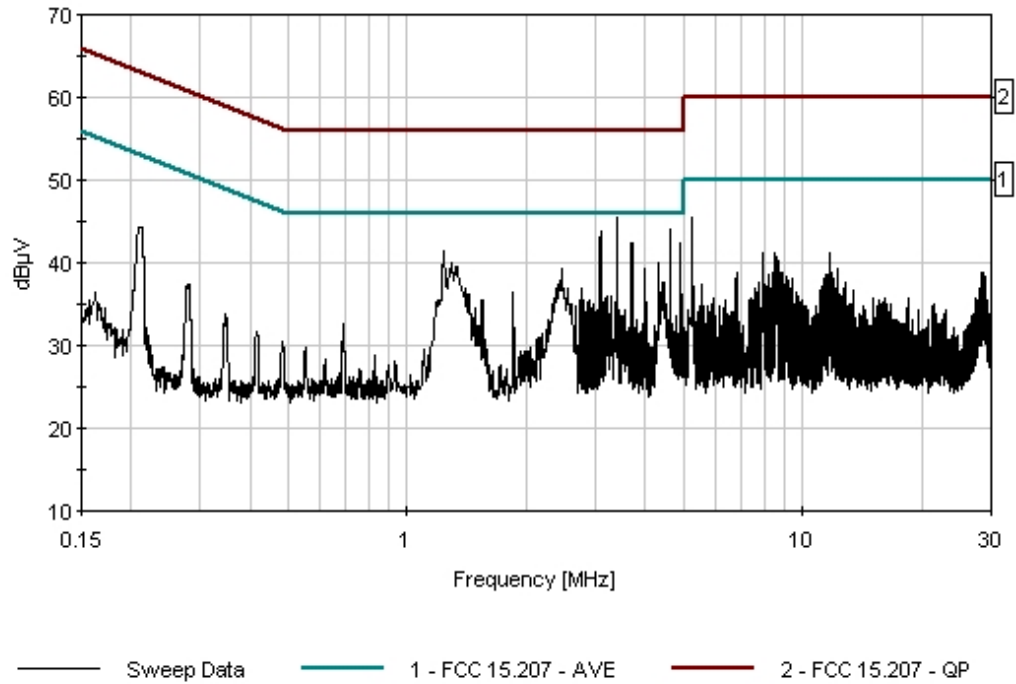
Reading listed by margin.

Test Lead: White

| #   | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|-----|-------------|--------------|----------|----------|----------|----|---------------|--------------|--------------|--------------|--------------|
| 1   | 3.396M      | 43.3         | +0.3     | +0.3     | +0.1     |    | +0.0          | 44.0         | 46.0         | -2.0         | White        |
| Ave |             |              |          |          |          |    |               |              |              |              |              |
| ^   | 3.396M      | 45.6         | +0.3     | +0.3     | +0.1     |    | +0.0          | 46.3         | 46.0         | +0.3         | White        |
| 3   | 4.935M      | 40.8         | +0.3     | +0.4     | +0.1     |    | +0.0          | 41.6         | 46.0         | -4.4         | White        |
| 4   | 5.237M      | 44.7         | +0.3     | +0.4     | +0.1     |    | +0.0          | 45.5         | 50.0         | -4.5         | White        |

|     |          |      |      |      |      |      |      |      |      |       |
|-----|----------|------|------|------|------|------|------|------|------|-------|
| 5   | 4.623M   | 40.6 | +0.3 | +0.4 | +0.1 | +0.0 | 41.4 | 46.0 | -4.6 | White |
| Ave |          |      |      |      |      |      |      |      |      |       |
| ^   | 4.623M   | 42.7 | +0.3 | +0.4 | +0.1 | +0.0 | 43.5 | 46.0 | -2.5 | White |
| 7   | 1.239M   | 40.7 | +0.2 | +0.3 | +0.2 | +0.0 | 41.4 | 46.0 | -4.6 | White |
| 8   | 3.086M   | 39.9 | +0.3 | +0.3 | +0.1 | +0.0 | 40.6 | 46.0 | -5.4 | White |
| Ave |          |      |      |      |      |      |      |      |      |       |
| ^   | 3.086M   | 44.0 | +0.3 | +0.3 | +0.1 | +0.0 | 44.7 | 46.0 | -1.3 | White |
| 10  | 4.305M   | 39.3 | +0.3 | +0.4 | +0.1 | +0.0 | 40.1 | 46.0 | -5.9 | White |
| 11  | 2.468M   | 38.7 | +0.3 | +0.3 | +0.1 | +0.0 | 39.4 | 46.0 | -6.6 | White |
| 12  | 3.704M   | 38.5 | +0.3 | +0.4 | +0.1 | +0.0 | 39.3 | 46.0 | -6.7 | White |
| Ave |          |      |      |      |      |      |      |      |      |       |
| ^   | 3.704M   | 42.1 | +0.3 | +0.4 | +0.1 | +0.0 | 42.9 | 46.0 | -3.1 | White |
| 14  | 3.999M   | 38.5 | +0.3 | +0.4 | +0.1 | +0.0 | 39.3 | 46.0 | -6.7 | White |
| 15  | 4.403M   | 36.8 | +0.3 | +0.4 | +0.1 | +0.0 | 37.6 | 46.0 | -8.4 | White |
| 16  | 211.812k | 43.8 | +0.1 | +0.4 | +0.1 | +0.0 | 44.4 | 53.1 | -8.7 | White |
| 17  | 7.940M   | 40.3 | +0.3 | +0.5 | +0.1 | +0.0 | 41.2 | 50.0 | -8.8 | White |
| 18  | 8.507M   | 40.2 | +0.3 | +0.5 | +0.1 | +0.0 | 41.1 | 50.0 | -8.9 | White |
| 19  | 11.652M  | 40.1 | +0.4 | +0.5 | +0.1 | +0.0 | 41.1 | 50.0 | -8.9 | White |
| 20  | 2.774M   | 36.3 | +0.3 | +0.3 | +0.1 | +0.0 | 37.0 | 46.0 | -9.0 | White |
| 21  | 8.643M   | 39.7 | +0.3 | +0.5 | +0.1 | +0.0 | 40.6 | 50.0 | -9.4 | White |
| 22  | 1.851M   | 35.8 | +0.2 | +0.4 | +0.1 | +0.0 | 36.5 | 46.0 | -9.5 | White |
| 23  | 4.373M   | 35.7 | +0.3 | +0.4 | +0.1 | +0.0 | 36.5 | 46.0 | -9.5 | White |
| 24  | 8.570M   | 39.5 | +0.3 | +0.5 | +0.1 | +0.0 | 40.4 | 50.0 | -9.6 | White |

CKC Laboratories, Inc. Date: 11/23/2004 Time: 16:00:53 Digital Path WVO#: 82775  
FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 46



## **FCC 15.247(c)/15.209/15.205 – SPURIOUS EMISSIONS**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.247 (c) / 15.209 / 15.205**  
 Work Order #: **82775** Date: 11/23/2004  
 Test Type: **Maximized Emissions** Time: 12:09:53  
 Equipment: **Askey Atheros Radio** Sequence#: 40  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay  
 S/N: 111504-002

### ***Test Equipment:***

| Function             | S/N        | Calibration Date | Cal Due Date | Asset # |
|----------------------|------------|------------------|--------------|---------|
| HP 8566B SA          | 2209A01404 | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display  | 2403A08241 | 02/26/2003       | 02/26/2005   | 00489   |
| HP 85650A QPA        | 2811A01267 | 02/26/2003       | 02/26/2005   | 00478   |
| HP 8447D Preamp      | 1937A02604 | 03/07/2003       | 03/07/2005   | 00099   |
| Chase CBL6111C Bilog | 2456       | 12/13/2002       | 12/13/2004   | 01991   |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model #    | S/N         |
|----------------------|--------------|------------|-------------|
| Radio Power Supply   | Digital Path | CHMON v5.1 | 110804-001a |
| Askey Atheros Radio* | Digital Path | Relay      | 111504-002  |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

### ***Test Conditions / Notes:***

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT power supply is located at the turn table. Test data represents emissions from radio in continuous transmit mode, digital circuitry and power supply. Test data is representative of all antenna configurations and all modes of operation. Reported emissions are representing the worst case. Frequency Range Investigated: 30-1000MHz. Temperature: 16°C, Relative Humidity: 36%. RBW = 120kHz VBW = 120kHz.

### ***Transducer Legend:***

|                     |                 |
|---------------------|-----------------|
| T1=Amp - S/N 604    | T2=Bilog Site B |
| T3=Cable - 10 Meter |                 |

### ***Measurement Data:*** Reading listed by margin. Test Distance: 3 Meters

| #                  | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|--------------------|-------------|--------------|----------|----------|----------|----|---------------|----------------|----------------|--------------|--------------|
| 1                  | 820.300M    | 42.8         | -27.7    | +21.7    | +7.3     |    | +0.0          | 44.1           | 46.0           | -1.9         | Verti        |
| See line 15 for QP |             |              |          |          |          |    |               |                |                |              |              |
| 2                  | 780.094M    | 43.3         | -27.7    | +21.2    | +7.0     |    | +0.0          | 43.8           | 46.0           | -2.2         | Verti        |
| QP                 |             |              |          |          |          |    |               |                |                |              |              |
| ^                  | 780.064M    | 46.3         | -27.7    | +21.2    | +7.0     |    | +0.0          | 46.8           | 46.0           | +0.8         | Verti        |

|    |                |      |       |       |      |      |      |      |       |       |
|----|----------------|------|-------|-------|------|------|------|------|-------|-------|
| 4  | 780.084M       | 41.1 | -27.7 | +21.2 | +7.0 | +0.0 | 41.6 | 46.0 | -4.4  | Horiz |
| 5  | 940.036M       | 37.1 | -27.2 | +23.4 | +8.0 | +0.0 | 41.3 | 46.0 | -4.7  | Verti |
| 6  | 639.992M       | 42.7 | -28.0 | +19.6 | +6.3 | +0.0 | 40.6 | 46.0 | -5.4  | Verti |
| 7  | 800.136M       | 39.5 | -27.7 | +21.4 | +7.0 | +0.0 | 40.2 | 46.0 | -5.8  | Verti |
| 8  | 180.121M<br>QP | 52.6 | -26.8 | +8.2  | +3.1 | +0.0 | 37.1 | 43.5 | -6.4  | Horiz |
| ^  | 180.121M       | 55.6 | -26.8 | +8.2  | +3.1 | +0.0 | 40.1 | 43.5 | -3.4  | Horiz |
| 10 | 820.164M       | 38.2 | -27.7 | +21.7 | +7.3 | +0.0 | 39.5 | 46.0 | -6.5  | Horiz |
| 11 | 200.092M       | 51.5 | -26.7 | +8.3  | +3.3 | +0.0 | 36.4 | 43.5 | -7.1  | Verti |
| 12 | 180.112M       | 50.1 | -26.8 | +8.2  | +3.1 | +0.0 | 34.6 | 43.5 | -8.9  | Verti |
| 13 | 800.056M       | 36.2 | -27.7 | +21.4 | +7.0 | +0.0 | 36.9 | 46.0 | -9.1  | Horiz |
| 14 | 840.256M       | 33.8 | -27.7 | +22.0 | +7.6 | +0.0 | 35.7 | 46.0 | -10.3 | Verti |
| 15 | 820.084M<br>QP | 34.1 | -27.7 | +21.7 | +7.3 | +0.0 | 35.4 | 46.0 | -10.6 | Verti |
| 16 | 459.968M       | 40.9 | -27.6 | +16.7 | +5.1 | +0.0 | 35.1 | 46.0 | -10.9 | Verti |
| 17 | 700.084M       | 35.0 | -27.8 | +20.3 | +6.8 | +0.0 | 34.3 | 46.0 | -11.7 | Horiz |
| 18 | 600.080M       | 36.9 | -27.8 | +19.1 | +5.9 | +0.0 | 34.1 | 46.0 | -11.9 | Verti |
| 19 | 200.109M       | 46.5 | -26.7 | +8.3  | +3.3 | +0.0 | 31.4 | 43.5 | -12.1 | Horiz |
| 20 | 620.284M       | 36.2 | -27.9 | +19.4 | +6.1 | +0.0 | 33.8 | 46.0 | -12.2 | Verti |
| 21 | 320.092M       | 42.4 | -26.6 | +13.4 | +4.3 | +0.0 | 33.5 | 46.0 | -12.5 | Verti |
| 22 | 500.060M       | 37.4 | -27.8 | +17.4 | +5.5 | +0.0 | 32.5 | 46.0 | -13.5 | Horiz |
| 23 | 460.098M       | 38.2 | -27.6 | +16.7 | +5.1 | +0.0 | 32.4 | 46.0 | -13.6 | Horiz |
| 24 | 619.964M       | 34.6 | -27.9 | +19.4 | +6.1 | +0.0 | 32.2 | 46.0 | -13.8 | Horiz |
| 25 | 300.108M       | 41.3 | -26.5 | +12.8 | +4.1 | +0.0 | 31.7 | 46.0 | -14.3 | Verti |
| 26 | 960.040M       | 34.7 | -27.2 | +23.7 | +7.9 | +0.0 | 39.1 | 54.0 | -14.9 | Verti |
| 27 | 420.116M       | 36.2 | -27.3 | +15.8 | +5.1 | +0.0 | 29.8 | 46.0 | -16.2 | Horiz |

|    |          |      |       |       |      |      |      |      |       |       |
|----|----------|------|-------|-------|------|------|------|------|-------|-------|
| 28 | 480.088M | 33.9 | -27.7 | +17.0 | +5.3 | +0.0 | 28.5 | 46.0 | -17.5 | Verti |
| 29 | 320.051M | 37.3 | -26.6 | +13.4 | +4.3 | +0.0 | 28.4 | 46.0 | -17.6 | Horiz |
| 30 | 400.028M | 34.6 | -27.2 | +15.4 | +5.1 | +0.0 | 27.9 | 46.0 | -18.1 | Verti |
| 31 | 420.116M | 34.0 | -27.3 | +15.8 | +5.1 | +0.0 | 27.6 | 46.0 | -18.4 | Verti |
| 32 | 400.028M | 33.5 | -27.2 | +15.4 | +5.1 | +0.0 | 26.8 | 46.0 | -19.2 | Horiz |
| 33 | 300.071M | 35.5 | -26.5 | +12.8 | +4.1 | +0.0 | 25.9 | 46.0 | -20.1 | Horiz |
| 34 | 440.104M | 32.0 | -27.4 | +16.3 | +5.0 | +0.0 | 25.9 | 46.0 | -20.1 | Verti |
| 35 | 360.096M | 33.5 | -26.9 | +14.5 | +4.6 | +0.0 | 25.7 | 46.0 | -20.3 | Verti |
| 36 | 220.098M | 38.6 | -26.5 | +9.9  | +3.4 | +0.0 | 25.4 | 46.0 | -20.6 | Horiz |
| 37 | 240.108M | 36.5 | -26.5 | +11.3 | +3.5 | +0.0 | 24.8 | 46.0 | -21.2 | Horiz |
| 38 | 360.084M | 32.0 | -26.9 | +14.4 | +4.6 | +0.0 | 24.1 | 46.0 | -21.9 | Horiz |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.247 (c) / 15.209 / 15.205**  
 Work Order #: **82775** Date: 11/16/2004  
 Test Type: **Maximized Emissions** Time: 16:32:27  
 Equipment: **Askey Atheros Radio** Sequence#: 35  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay  
 S/N: 111504-002

***Test Equipment:***

| Function                          | S/N         | Calibration Date | Cal Due Date | Asset # |
|-----------------------------------|-------------|------------------|--------------|---------|
| HP 8566B SA                       | 2209A01404  | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display               | 2403A08241  | 02/26/2003       | 02/26/2005   | 00489   |
| HP 83051A Preamp                  | 3332A00309  | 03/17/2003       | 03/17/2005   | 02115   |
| EMCO 3115 Horn Antenna            | 9006-3413   | 04/15/2003       | 04/25/2005   | 327     |
| Cable, WL Gore 2'                 | 149047      | 04/10/2003       | 04/10/2005   | P01527  |
| Cable, WL Gore                    | 149047      | 04/10/2003       | 04/10/2005   | P04301  |
| Cable, Andrews Hardline HF-005-20 | NA          | 06/03/2003       | 06/03/2005   | P04275  |
| HPF 3.5GHz                        | 84300-80038 | 03/18/2003       | 03/18/2005   | 01416   |
| Weinchel 10dB attenuator          | C8597       | 10/01/2004       | 10/01/2006   | P02139  |
| Weinchel 3dB attenuator           | C5338       | 10/01/2004       | 10/01/2006   | P01950  |
| SA_8564E                          | 3623A00539  | 08/02/2004       | 08/02/2006   | 01406   |
| ARA MWH-1826/B Horn Antenna       | 1005        | 11/05/2004       | 11/05/2006   | 02046   |
| HP 26-40GHz Horn Antenna          | 84125-80001 | 11/05/2004       | 11/05/2006   | 01414   |

***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model # | S/N        |
|----------------------|--------------|---------|------------|
| Askey Atheros Radio* | Digital Path | Relay   | 111504-002 |

***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

***Test Conditions / Notes:***

EUT is a wireless downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. Instance 1 Configuration: EUT is operating in the 2.4GHz band Modulation = 802.11b default (CCK) Data Rate = 11Mbps Antenna = 9dBi Gain Omni Channel 1 PCDAC = 50, Channel 6 PCDAC = 52, Channel 11 PCDAC = 53. Instance 2 Configuration: EUT is operating in the 5.8GHz band Modulation = 802.11a default (OFDM) Data Rate = 54Mbps Antenna = 18dBi Gain Directional PCDAC = 60. Frequency Range Investigated: 1-40GHz. All Channel configurations tested with low middle and high channels in each band. Temperature: 17°C Relative Humidity: 48%. RBW = 100 kHz VBW = 100 kHz. **No Intermodulation products detected within 20dB of the limit below 8.2GHz. No EUT emissions detected within 20dB of the limit above 8.2GHz.**

**Transducer Legend:**

|                          |                               |
|--------------------------|-------------------------------|
| T1=Horn AN 00327 1-18GHz | T2=AMP AN00941A 50GHz         |
| T3=Cable HF P01527       | T4=WL Gore SN 1065 AN P004301 |
| T5=Att 10dB AN02139      |                               |

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

| #  | Freq<br>MHz      | Rdng<br>dBμV | T1<br>T5<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|----|------------------|--------------|----------------|----------|----------|----------|---------------|----------------|----------------|--------------|--------------|
| 1  | 2386.333M<br>Ave | 36.8         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 45.9           | 54.0           | -8.1         | Verti        |
| ^  | 2386.333M        | 48.2         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 57.3           | 54.0           | +3.3         | Verti        |
| 3  | 2388.333M<br>Ave | 35.8         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 44.9           | 54.0           | -9.1         | Verti        |
| ^  | 2388.333M        | 46.7         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 55.8           | 54.0           | +1.8         | Verti        |
| 5  | 2390.000M<br>Ave | 34.8         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 43.9           | 54.0           | -10.1        | Verti        |
| ^  | 2390.000M        | 45.2         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 54.3           | 54.0           | +0.3         | Verti        |
| 7  | 2488.333M<br>Ave | 32.3         | +28.5<br>+9.9  | -29.7    | +0.4     | +0.6     | +0.0          | 42.0           | 54.0           | -12.0        | Verti        |
| ^  | 2488.333M        | 45.0         | +28.5<br>+9.9  | -29.7    | +0.4     | +0.6     | +0.0          | 54.7           | 54.0           | +0.7         | Verti        |
| 9  | 5725.000M<br>Ave | 74.7         | +34.3<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 92.3           | 105.0          | -12.7        | Verti        |
| ^  | 5725.000M        | 86.8         | +34.3<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 104.4          | 105.0          | -0.6         | Verti        |
| 11 | 2483.500M<br>Ave | 30.7         | +28.5<br>+9.9  | -29.7    | +0.4     | +0.6     | +0.0          | 40.4           | 54.0           | -13.6        | Verti        |
| ^  | 2483.500M        | 41.2         | +28.5<br>+9.9  | -29.7    | +0.4     | +0.6     | +0.0          | 50.9           | 54.0           | -3.1         | Verti        |
| 13 | 2397.667M<br>Ave | 56.7         | +28.3<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 65.9           | 83.0           | -17.1        | Verti        |
| ^  | 2397.667M        | 66.3         | +28.3<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 75.5           | 83.0           | -7.5         | Verti        |
| 15 | 5850.000M<br>Ave | 69.3         | +34.2<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 86.8           | 105.0          | -18.2        | Verti        |
| ^  | 5850.000M        | 83.2         | +34.2<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 100.7          | 105.0          | -4.3         | Verti        |
| 17 | 5850.000M        | 51.0         | +34.2<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 68.5           | 105.0          | -36.5        | Horiz        |
| 18 | 5725.000M        | 48.5         | +34.3<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 66.1           | 105.0          | -38.9        | Horiz        |



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**

Specification: **FCC 15.247 (c) / 15.209 / 15.205**

Work Order #: **82775**

Date: 11/16/2004

Test Type: **Maximized Emissions**

Time: 16:28:17

Equipment: **Askey Atheros Radio**

Sequence#: 34

Manufacturer: Digital Path

Tested By: Randal Clark

Model: Relay

S/N: 111504-002

**Test Equipment:**

| Function                          | S/N         | Calibration Date | Cal Due Date | Asset # |
|-----------------------------------|-------------|------------------|--------------|---------|
| HP 8566B SA                       | 2209A01404  | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display               | 2403A08241  | 02/26/2003       | 02/26/2005   | 00489   |
| HP 83051A Preamplifier            | 3332A00309  | 03/17/2003       | 03/17/2005   | 02115   |
| EMCO 3115 Horn Antenna            | 9006-3413   | 04/15/2003       | 04/25/2005   | 327     |
| Cable, WL Gore 2'                 | 149047      | 04/10/2003       | 04/10/2005   | P01527  |
| Cable, WL Gore                    | 149047      | 04/10/2003       | 04/10/2005   | P04301  |
| Cable, Andrews Hardline HF-005-20 | NA          | 06/03/2003       | 06/03/2005   | P04275  |
| HPF 3.5GHz                        | 84300-80038 | 03/18/2003       | 03/18/2005   | 01416   |
| Weinchel 10dB attenuator          | C8597       | 10/01/2004       | 10/01/2006   | P02139  |
| Weinchel 3dB attenuator           | C5338       | 10/01/2004       | 10/01/2006   | P01950  |
| SA 8564E                          | 3623A00539  | 08/02/2004       | 08/02/2006   | 01406   |
| ARA MWH-1826/B Horn Antenna       | 1005        | 11/05/2004       | 11/05/2006   | 02046   |
| HP 26-40GHz Horn Antenna          | 84125-80001 | 11/05/2004       | 11/05/2006   | 01414   |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model # | S/N        |
|----------------------|--------------|---------|------------|
| Askey Atheros Radio* | Digital Path | Relay   | 111504-002 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. Instance 1 Configuration: EUT is operating in the 2.4GHz band. Modulation = 802.11g default (OFDM) Data Rate = 54Mbps Antenna = 9dBi Gain Omni Channel 1 PCDAC = 47, Channel 6 PCDAC = 47, Channel 11 PCDAC = 48. Instance 2 Configuration: EUT is operating in the 5.8GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps Antenna = 18dBi Gain Directional PCDAC = 60. Frequency Range Investigated: 1-40GHz. All Channel configurations tested with low middle and high channels in each band. Temperature: 17°C, Relative Humidity: 48%. RBW = 100 kHz VBW = 100 kHz. **No Intermodulation products detected within 20dB of the limit below 8.2GHz. No EUT emissions detected within 20dB of the limit above 8.2GHz.**

**Transducer Legend:**

|                          |                               |
|--------------------------|-------------------------------|
| T1=Horn AN 00327 1-18GHz | T2=AMP AN00941A 50GHz         |
| T3=Cable HF P01527       | T4=WL Gore SN 1065 AN P004301 |
| T5=Att 10dB AN02139      |                               |

**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

| #  | Freq<br>MHz      | Rdng<br>dBμV | T1<br>T5<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|----|------------------|--------------|----------------|----------|----------|----------|---------------|----------------|----------------|--------------|--------------|
| 1  | 2390.000M<br>Ave | 42.8         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 51.9           | 54.0           | -2.1         | Verti        |
| ^  | 2390.000M        | 53.0         | +28.2<br>+9.9  | -30.0    | +0.4     | +0.6     | +0.0          | 62.1           | 54.0           | +8.1         | Verti        |
| 3  | 2483.500M<br>Ave | 37.2         | +28.5<br>+9.9  | -29.7    | +0.4     | +0.6     | +0.0          | 46.9           | 54.0           | -7.1         | Verti        |
| ^  | 2483.500M        | 46.3         | +28.5<br>+9.9  | -29.7    | +0.4     | +0.6     | +0.0          | 56.0           | 54.0           | +2.0         | Verti        |
| 5  | 1666.667M        | 39.7         | +25.7<br>+9.9  | -30.2    | +0.3     | +0.6     | +0.0          | 46.0           | 54.0           | -8.0         | Verti        |
| 6  | 5725.000M<br>Ave | 74.7         | +34.3<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 92.3           | 105.0          | -12.7        | Verti        |
| ^  | 5725.000M        | 86.8         | +34.3<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 104.4          | 105.0          | -0.6         | Verti        |
| 8  | 5850.000M<br>Ave | 69.3         | +34.2<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 86.8           | 105.0          | -18.2        | Verti        |
| ^  | 5850.000M        | 83.2         | +34.2<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 100.7          | 105.0          | -4.3         | Verti        |
| 10 | 5850.000M        | 51.0         | +34.2<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 68.5           | 105.0          | -36.5        | Horiz        |
| 11 | 5725.000M        | 48.5         | +34.3<br>+10.0 | -28.3    | +0.6     | +1.0     | +0.0          | 66.1           | 105.0          | -38.9        | Horiz        |



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.247 (c) / 15.209 / 15.205**  
 Work Order #: **82775** Date: 11/15/2004  
 Test Type: **Maximized Emissions** Time: 15:05:07  
 Equipment: **Askey Atheros Radio** Sequence#: 27  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay  
 S/N: 111504-002

**Test Equipment:**

| Function                          | S/N         | Calibration Date | Cal Due Date | Asset # |
|-----------------------------------|-------------|------------------|--------------|---------|
| HP 8566B SA                       | 2209A01404  | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display               | 2403A08241  | 02/26/2003       | 02/26/2005   | 00489   |
| HP 83051A Preamp                  | 3332A00309  | 03/17/2003       | 03/17/2005   | 02115   |
| EMCO 3115 Horn Antenna            | 9006-3413   | 04/15/2003       | 04/25/2005   | 327     |
| Cable, WL Gore 2'                 | 149047      | 04/10/2003       | 04/10/2005   | P01527  |
| Cable, WL Gore                    | 149047      | 04/10/2003       | 04/10/2005   | P04301  |
| Cable, Andrews Hardline HF-005-20 | NA          | 06/03/2003       | 06/03/2005   | P04275  |
| HPF 3.5GHz                        | 84300-80038 | 03/18/2003       | 03/18/2005   | 01416   |
| Weinchel 10dB attenuator          | C8597       | 10/01/2004       | 10/01/2006   | P02139  |
| Weinchel 3dB attenuator           | C5338       | 10/01/2004       | 10/01/2006   | P01950  |
| SA 8564E                          | 3623A00539  | 08/02/2004       | 08/02/2006   | 01406   |
| ARA MWH-1826/B Horn Antenna       | 1005        | 11/05/2004       | 11/05/2006   | 02046   |
| HP 26-40GHz Horn Antenna          | 84125-80001 | 11/05/2004       | 11/05/2006   | 01414   |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model # | S/N        |
|----------------------|--------------|---------|------------|
| Askey Atheros Radio* | Digital Path | Relay   | 111504-002 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. Instance 1 Configuration: EUT is operating in the 2.4GHz band Modulation = 802.11b default (CCK) Data Rate = 11Mbps Antenna = 14.2dBi Gain Directional Channel 1 PCDAC = 50 Channel 6 PCDAC = 52 Channel 11 PCDAC = 53 Instance 2 Configuration: EUT is operating in the 2.4GHz band Modulation = 802.11b default (CCK) Data Rate = 11Mbps Antenna = 9dBi Gain Omni Channel 1 PCDAC = 50, Channel 6 PCDAC = 52, Channel 11 PCDAC = 53. Channel Configurations Tested: 1: Instance 1 Channel 1, Instance 2 Channel 6 2: Instance 1 Channel 1, Instance 2 Channel 11 3: Instance 1 Channel 11, Instance 2 Channel 1 4: Instance 1 Channel 11, Instance 2 Channel 6 5: Instance 1 Channel 6, Instance 2 Channel 11 Frequency Range Investigated: 1-40GHz. Temperature: 18°C Relative Humidity: 48%. RBW = 100 kHz VBW = 100 kHz. **No EUT emissions detected within 20dB of the limit above 3.5GHz.**

**Transducer Legend:**

|                               |                                |
|-------------------------------|--------------------------------|
| T1=Amp - S/N 604              | T2=Bilog Site B                |
| T3=Cable - 10 Meter           | T4=Horn AN 00327 1-18GHz       |
| T5=AMP AN00941A 50GHz         | T6=Cable - 3 Meter to bulkhead |
| T7=Cable HF-005-20            | T8=Cable HF P01527             |
| T9=WL Gore SN 1065 AN P004301 | T10=HPF 3.5 GHz High Pass      |
| T11=Att 10dB AN02139          | T12=Pad 6dB                    |
| T13=Pad 3dB                   |                                |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq      | Rdng | T1<br>T5<br>T9<br>T13         | T2<br>T6<br>T10      | T3<br>T7<br>T11      | T4<br>T8<br>T12       | Dist  | Corr   | Spec           | Margin | Polar |
|---|-----------|------|-------------------------------|----------------------|----------------------|-----------------------|-------|--------|----------------|--------|-------|
|   | MHz       | dBμV | dB                            | dB                   | dB                   | dB                    | Table | dBμV/m | dBμV/m         | dB     | Ant   |
| 1 | 2483.500M | 33.9 | +0.0<br>-29.7<br>+0.6<br>+3.2 | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 53.8   | 54.0<br>Test 3 | -0.2   | Verti |
| ^ | 2483.500M | 50.9 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 67.6   | 54.0<br>Test 4 | +13.6  | Verti |
| ^ | 2483.500M | 41.9 | +0.0<br>-29.7<br>+0.6<br>+3.2 | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 61.8   | 54.0<br>Test 3 | +7.8   | Verti |
| ^ | 2483.500M | 42.1 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 58.8   | 54.0<br>Test 5 | +4.8   | Verti |
| ^ | 2483.500M | 41.7 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 58.4   | 54.0<br>Test 2 | +4.4   | Verti |
| ^ | 2483.500M | 39.2 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 55.9   | 54.0<br>Test 1 | +1.9   | Verti |
| 7 | 2483.500M | 37.1 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 53.8   | 54.0<br>Test 4 | -0.2   | Verti |
| 8 | 2486.500M | 32.9 | +0.0<br>-29.7<br>+0.6<br>+3.2 | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 52.8   | 54.0<br>Test 3 | -1.2   | Verti |
| ^ | 2486.500M | 48.6 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 65.3   | 54.0<br>Test 4 | +11.3  | Verti |
| ^ | 2486.500M | 42.9 | +0.0<br>-29.7<br>+0.6<br>+3.2 | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0  | 62.8   | 54.0<br>Test 3 | +8.8   | Verti |

|    |                  |      |                               |                       |                      |                       |      |      |                |       |       |
|----|------------------|------|-------------------------------|-----------------------|----------------------|-----------------------|------|------|----------------|-------|-------|
| 11 | 2385.000M<br>Ave | 36.7 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 52.7 | 54.0<br>Test 1 | -1.3  | Verti |
| ^  | 2385.000M        | 49.8 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 65.8 | 54.0<br>Test 1 | +11.8 | Verti |
| 13 | 2360.000M<br>Ave | 33.4 | +28.2<br>+0.4<br>+0.0         | -29.9<br>+0.6<br>+3.1 | +4.8<br>+0.0         | +1.9<br>+9.9          | +0.0 | 52.4 | 54.0           | -1.6  | Verti |
| ^  | 2360.000M        | 39.5 | +28.2<br>+0.4<br>+0.0         | -29.9<br>+0.6<br>+3.1 | +4.8<br>+0.0         | +1.9<br>+9.9          | +0.0 | 58.5 | 54.0           | +4.5  | Verti |
| 15 | 2486.500M<br>Ave | 35.2 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 51.9 | 54.0<br>Test 4 | -2.1  | Verti |
| 16 | 2513.300M<br>Ave | 31.6 | +0.0<br>-29.6<br>+0.6<br>+3.2 | +0.0<br>+5.0<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 51.6 | 54.0<br>Test 3 | -2.4  | Verti |
| ^  | 2513.300M        | 43.5 | +0.0<br>-29.6<br>+0.6<br>+3.2 | +0.0<br>+5.0<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 63.5 | 54.0<br>Test 3 | +9.5  | Verti |
| 18 | 2390.000M<br>Ave | 34.9 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 50.9 | 54.0<br>Test 1 | -3.1  | Verti |
| 19 | 2386.300M<br>Ave | 34.7 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 50.7 | 54.0<br>Test 2 | -3.3  | Verti |
| ^  | 2386.300M        | 48.2 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0  | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 64.2 | 54.0<br>Test 2 | +10.2 | Verti |
| 21 | 1882.590M<br>Ave | 31.9 | +0.0<br>+0.4<br>+0.0          | +0.0<br>+0.6<br>+3.2  | +0.0<br>+0.0         | +1.7<br>+9.9          | +0.0 | 49.2 | 54.0           | -4.8  | Verti |
| ^  | 1882.590M        | 42.7 | +26.7<br>+0.4<br>+0.0         | -29.5<br>+0.6<br>+3.2 | +4.3<br>+0.0         | +1.7<br>+9.9          | +0.0 | 60.0 | 54.0           | +6.0  | Verti |

|    |                  |      |                               |                      |                      |                       |      |      |                |      |       |
|----|------------------|------|-------------------------------|----------------------|----------------------|-----------------------|------|------|----------------|------|-------|
| 23 | 2390.000M<br>Ave | 32.3 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 48.3 | 54.0<br>Test 2 | -5.7 | Verti |
| 24 | 2487.000M<br>Ave | 31.3 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 48.0 | 54.0<br>Test 5 | -6.0 | Verti |
| ^  | 2487.000M        | 41.3 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 58.0 | 54.0<br>Test 5 | +4.0 | Verti |
| 26 | 2385.300M<br>Ave | 28.6 | +0.0<br>-30.0<br>+0.6<br>+3.1 | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 47.7 | 54.0<br>Test 3 | -6.3 | Verti |
| ^  | 2385.300M        | 38.4 | +0.0<br>-30.0<br>+0.6<br>+3.1 | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 57.5 | 54.0<br>Test 3 | +3.5 | Verti |
| 28 | 2360.500M<br>Ave | 31.6 | +0.0<br>-29.9<br>+0.6         | +0.0<br>+4.8<br>+0.0 | +0.0<br>+1.9<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 47.5 | 54.0<br>Test 2 | -6.5 | Verti |
| ^  | 2360.500M        | 46.3 | +0.0<br>-29.9<br>+0.6         | +0.0<br>+4.8<br>+0.0 | +0.0<br>+1.9<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 62.2 | 54.0<br>Test 2 | +8.2 | Verti |
| 30 | 2486.800M<br>Ave | 30.0 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 46.7 | 54.0<br>Test 2 | -7.3 | Verti |
| ^  | 2486.800M        | 40.0 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 56.7 | 54.0<br>Test 2 | +2.7 | Verti |
| 32 | 2483.500M<br>Ave | 29.7 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 46.4 | 54.0<br>Test 5 | -7.6 | Verti |
| 33 | 2483.500M<br>Ave | 29.2 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 45.9 | 54.0<br>Test 2 | -8.1 | Verti |

|    |                  |      |                               |                      |                      |                       |      |      |                |       |       |
|----|------------------|------|-------------------------------|----------------------|----------------------|-----------------------|------|------|----------------|-------|-------|
| 34 | 2390.000M<br>Ave | 26.3 | +0.0<br>-30.0<br>+0.6<br>+3.1 | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 45.4 | 54.0<br>Test 3 | -8.6  | Verti |
| ^  | 2390.000M        | 47.8 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 63.8 | 54.0<br>Test 1 | +9.8  | Verti |
| ^  | 2390.000M        | 47.5 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 63.5 | 54.0<br>Test 2 | +9.5  | Verti |
| ^  | 2390.000M        | 38.1 | +0.0<br>-30.0<br>+0.6<br>+3.1 | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 57.2 | 54.0<br>Test 3 | +3.2  | Verti |
| ^  | 2390.000M        | 40.2 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 56.2 | 54.0<br>Test 5 | +2.2  | Verti |
| ^  | 2390.000M        | 39.2 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 55.2 | 54.0<br>Test 4 | +1.2  | Verti |
| 40 | 2390.000M<br>Ave | 28.4 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 44.4 | 54.0<br>Test 4 | -9.6  | Verti |
| 41 | 2483.500M<br>Ave | 27.1 | +0.0<br>-29.7<br>+0.6         | +0.0<br>+5.0<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.5<br>+0.4<br>+0.0 | +0.0 | 43.8 | 54.0<br>Test 1 | -10.2 | Verti |
| 42 | 2390.000M<br>Ave | 27.6 | +0.0<br>-30.0<br>+0.6         | +0.0<br>+4.9<br>+0.0 | +0.0<br>+2.0<br>+9.9 | +28.2<br>+0.4<br>+0.0 | +0.0 | 43.6 | 54.0<br>Test 5 | -10.4 | Verti |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**

Specification: **FCC 15.247 (c) / 15.209 / 15.205**

Work Order #: **82775**

Date: 11/15/2004

Test Type: **Maximized Emissions**

Time: 12:18:29

Equipment: **Askey Atheros Radio**

Sequence#: 26

Manufacturer: Digital Path

Tested By: Randal Clark

Model: Relay

S/N: 111504-002

**Test Equipment:**

| Function                          | S/N         | Calibration Date | Cal Due Date | Asset # |
|-----------------------------------|-------------|------------------|--------------|---------|
| HP 8566B SA                       | 2209A01404  | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display               | 2403A08241  | 02/26/2003       | 02/26/2005   | 00489   |
| HP 83051A Preamplifier            | 3332A00309  | 03/17/2003       | 03/17/2005   | 02115   |
| EMCO 3115 Horn Antenna            | 9006-3413   | 04/15/2003       | 04/25/2005   | 327     |
| Cable, WL Gore 2'                 | 149047      | 04/10/2003       | 04/10/2005   | P01527  |
| Cable, WL Gore                    | 149047      | 04/10/2003       | 04/10/2005   | P04301  |
| Cable, Andrews Hardline HF-005-20 | NA          | 06/03/2003       | 06/03/2005   | P04275  |
| HPF 3.5GHz                        | 84300-80038 | 03/18/2003       | 03/18/2005   | 01416   |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model # | S/N        |
|----------------------|--------------|---------|------------|
| Askey Atheros Radio* | Digital Path | Relay   | 111504-002 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. Instance 1 Configuration: EUT is operating in the 2.4GHz band Modulation = 802.11g default (OFDM) Data Rate = 54Mbps Antenna = 14.2dBi Gain Directional Channel 1 PCDAC = 45 Channel 6 PCDAC = 47 Channel 11 PCDAC = 38. Instance 2 Configuration: EUT is operating in the 2.4GHz band Modulation = 802.11g default (OFDM) Data Rate = 54Mbps Antenna = 9dBi Gain Omni Channel 1 PCDAC = 47, Channel 6 PCDAC = 47, Channel 11 PCDAC = 48. Channel Configurations Tested: 1: Instance 1 Channel 1, Instance 2 Channel 6 2: Instance 1 Channel 1, Instance 2 Channel 11 3: Instance 1 Channel 11, Instance 2 Channel 1 4: Instance 1 Channel 11, Instance 2 Channel 6 5: Instance 1 Channel 6, Instance 2 Channel 11. Frequency Range Investigated: 1-40GHz. Temperature: 18°C Relative Humidity: 48%. RBW = 100 kHz VBW = 100 kHz. **No EUT emissions detected within 20dB of the limit above 3.5GHz.**

**Transducer Legend:**

|                                |                               |
|--------------------------------|-------------------------------|
| T1=Horn AN 00327 1-18GHz       | T2=AMP AN00941A 50GHz         |
| T3=Cable - 3 Meter to bulkhead | T4=Cable HF-005-20            |
| T5=Cable HF P01527             | T6=WL Gore SN 1065 AN P004301 |
| T7=HPF 3.5 GHz High Pass       | T8=Att 10dB AN02139           |

**Measurement Data:**

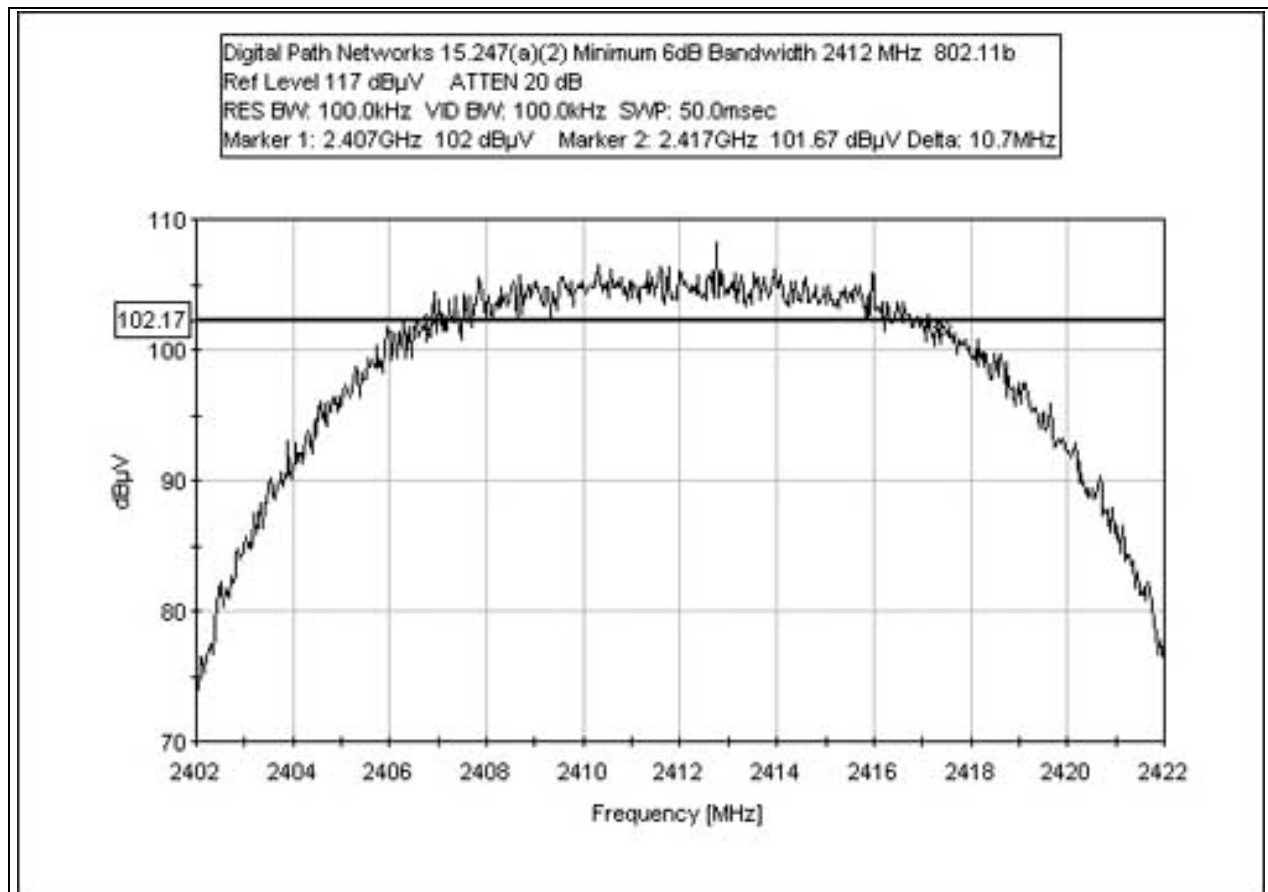
Reading listed by margin.

Test Distance: 3 Meters

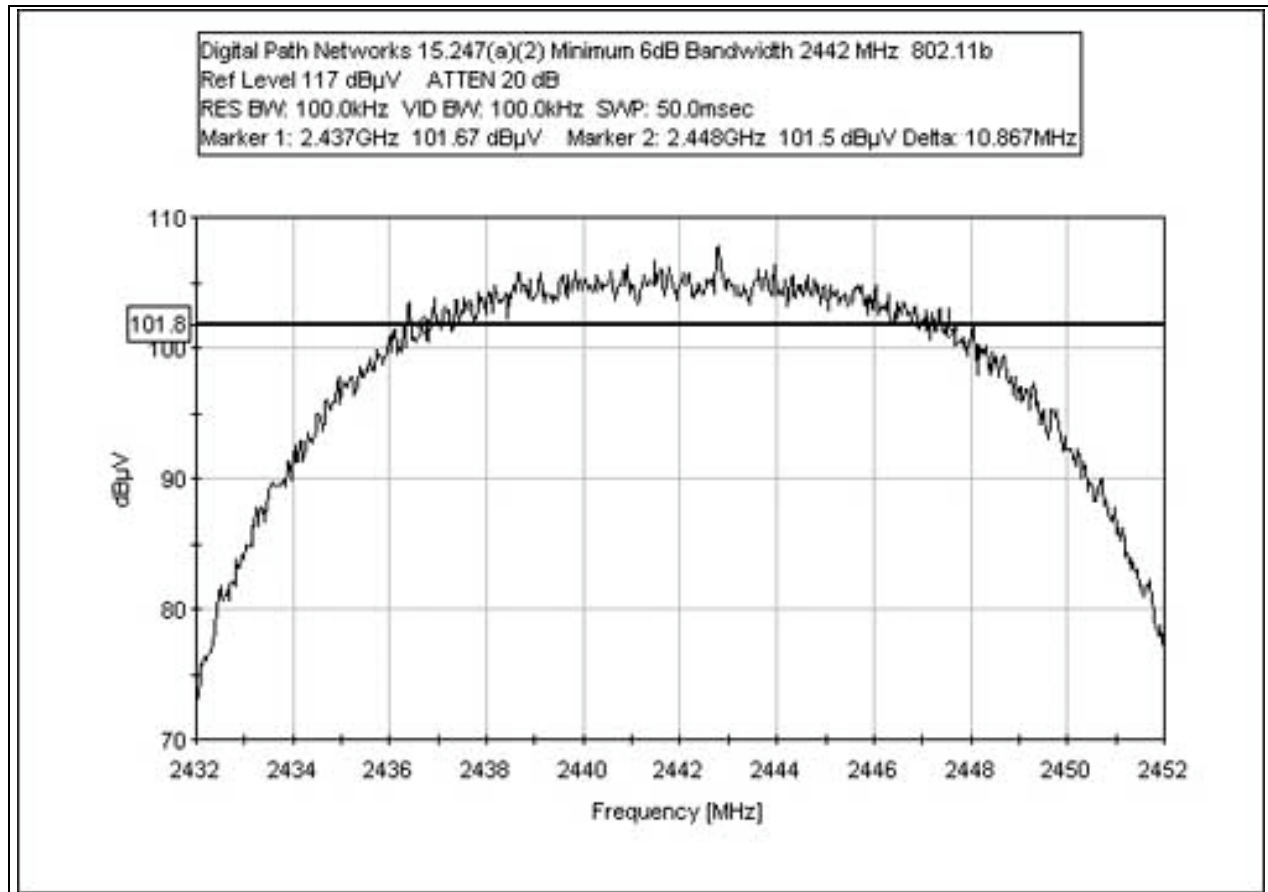
| #  | Freq<br>MHz | Rdng<br>dBμV | T1<br>T5<br>dB | T2<br>T6<br>dB | T3<br>T7<br>dB | T4<br>T8<br>dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m                 | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------|----------------|----------------|----------------|----------------|---------------|----------------|--------------------------------|--------------|--------------|
| 1  | 2360.000M   | 33.4         | +1.9           | +0.4           | +0.6           | +0.0           | +0.0          | 52.4           | 54.0                           | -1.6         | Verti        |
|    | Ave         |              | +9.9           | +0.0           | +3.1           |                |               |                |                                |              |              |
| ^  | 2360.000M   | 39.5         | +1.9           | +0.4           | +0.6           | +0.0           | +0.0          | 58.5           | 54.0                           | +4.5         | Verti        |
|    |             |              | +9.9           | +0.0           | +3.1           |                |               |                |                                |              |              |
| 3  | 2483.500M   | 43.8         | +28.5          | -29.7          | +5.0           | +2.0           | +0.0          | 50.6           | 54.0                           | -3.4         | Verti        |
|    | Ave         |              | +0.4           | +0.6           | +0.0           |                |               |                | Test 3                         |              |              |
| 4  | 2483.500M   | 43.3         | +28.5          | -29.7          | +5.0           | +2.0           | +0.0          | 50.1           | 54.0                           | -3.9         | Verti        |
|    | Ave         |              | +0.4           | +0.6           | +0.0           |                |               |                | Test 3                         |              |              |
| 5  | 1882.590M   | 31.9         | +1.7           | +0.4           | +0.6           | +0.0           | +0.0          | 49.2           | 54.0                           | -4.8         | Verti        |
|    | Ave         |              | +9.9           | +0.0           | +3.2           |                |               |                |                                |              |              |
| ^  | 1882.590M   | 42.7         | +1.7           | +0.4           | +0.6           | +0.0           | +0.0          | 60.0           | 54.0                           | +6.0         | Verti        |
|    |             |              | +9.9           | +0.0           | +3.2           |                |               |                |                                |              |              |
| 7  | 2483.500M   | 40.5         | +28.5          | -29.7          | +5.0           | +2.0           | +0.0          | 47.3           | 54.0                           | -6.7         | Verti        |
|    | Ave         |              | +0.4           | +0.6           | +0.0           |                |               |                | Test 4                         |              |              |
| 8  | 2510.000M   | 39.7         | +28.5          | -29.7          | +5.0           | +2.0           | +0.0          | 46.5           | 54.0                           | -7.5         | Verti        |
|    |             |              | +0.4           | +0.6           | +0.0           |                |               |                | Test 3                         |              |              |
| 9  | 2390.000M   | 38.8         | +28.2          | -30.0          | +4.9           | +2.0           | +0.0          | 44.9           | 54.0                           | -9.1         | Verti        |
|    | Ave         |              | +0.4           | +0.6           | +0.0           |                |               |                | Test 3                         |              |              |
| 10 | 2492.500M   | 38.1         | +28.5          | -29.7          | +5.0           | +2.0           | +0.0          | 44.9           | 54.0                           | -9.1         | Verti        |
|    |             |              | +0.4           | +0.6           |                |                |               |                | Test 4                         |              |              |
| 11 | 2390.000M   | 37.7         | +28.2          | -30.0          | +4.9           | +2.0           | +0.0          | 43.8           | 54.0                           | -10.2        | Horiz        |
|    |             |              | +0.4           | +0.6           | +0.0           |                |               |                | Representative of<br>all tests |              |              |
| 12 | 2390.000M   | 36.4         | +28.2          | -30.0          | +4.9           | +2.0           | +0.0          | 43.1           | 54.0                           | -10.9        | Verti        |
|    | Ave         |              | +0.4           | +0.6           |                |                |               |                | Test 2                         |              |              |
| 13 | 2366.000M   | 36.9         | +28.2          | -29.9          | +4.9           | +2.0           | +0.0          | 43.1           | 54.0                           | -10.9        | Verti        |
|    |             |              | +0.4           | +0.6           |                |                |               |                | Test 1                         |              |              |
| 14 | 2512.500M   | 36.1         | +28.5          | -29.6          | +5.0           | +2.0           | +0.0          | 43.0           | 54.0                           | -11.0        | Verti        |
|    |             |              | +0.4           | +0.6           |                |                |               |                | Test 3                         |              |              |
| 15 | 2485.500M   | 35.5         | +28.5          | -29.7          | +5.0           | +2.0           | +0.0          | 42.3           | 54.0                           | -11.7        | Verti        |
|    |             |              | +0.4           | +0.6           |                |                |               |                | Test 1                         |              |              |

|    |                  |      |               |               |              |      |      |      |                                        |       |       |
|----|------------------|------|---------------|---------------|--------------|------|------|------|----------------------------------------|-------|-------|
| 16 | 2483.500M<br>Ave | 33.6 | +28.5<br>+0.4 | -29.7<br>+0.6 | +5.0<br>+0.0 | +2.0 | +0.0 | 40.4 | 54.0<br>Test 5                         | -13.6 | Verti |
| ^  | 2483.500M        | 53.5 | +28.5<br>+0.4 | -29.7<br>+0.6 | +5.0         | +2.0 | +0.0 | 60.9 | 54.0<br>Test 4                         | +6.9  | Verti |
| ^  | 2483.500M        | 49.8 | +28.5<br>+0.4 | -29.7<br>+0.6 | +5.0<br>+0.0 | +2.0 | +0.0 | 56.6 | 54.0<br>Test 3                         | +2.6  | Verti |
| ^  | 2483.500M        | 47.4 | +28.5<br>+0.4 | -29.7<br>+0.6 | +5.0<br>+0.0 | +2.0 | +0.0 | 54.2 | 54.0<br>Test 5                         | +0.2  | Verti |
| ^  | 2483.500M        | 33.0 | +28.5<br>+0.4 | -29.7<br>+0.6 | +5.0<br>+0.0 | +2.0 | +0.0 | 39.8 | 54.0<br>Test 2                         | -14.2 | Verti |
| 21 | 2400.000M        | 60.1 | +28.3<br>+0.4 | -30.0<br>+0.6 | +4.9         | +2.0 | +0.0 | 66.3 | 80.0<br>Test 1                         | -13.7 | Verti |
| 22 | 2390.000M        | 34.1 | +28.2<br>+0.4 | -30.0<br>+0.6 | +4.9<br>+0.0 | +2.0 | +0.0 | 40.2 | 54.0<br>Representative of<br>all tests | -13.8 | Horiz |
| 23 | 2400.000M        | 58.0 | +28.3<br>+0.4 | -30.0<br>+0.6 | +4.9         | +2.0 | +0.0 | 64.2 | 80.0<br>Test 3                         | -15.8 | Verti |
| 24 | 2400.000M        | 57.2 | +28.3<br>+0.4 | -30.0<br>+0.6 | +4.9         | +2.0 | +0.0 | 63.4 | 80.0<br>Test 2                         | -16.6 | Verti |
| 25 | 2390.000M<br>Ave | 28.0 | +28.2<br>+0.4 | -30.0<br>+0.6 | +4.9<br>+0.0 | +2.0 | +0.0 | 34.1 | 54.0<br>Test 5                         | -19.9 | Verti |
| ^  | 2390.000M        | 46.5 | +28.2<br>+0.4 | -30.0<br>+0.6 | +4.9<br>+0.0 | +2.0 | +0.0 | 52.6 | 54.0<br>Test 3                         | -1.4  | Verti |
| ^  | 2390.000M        | 44.0 | +28.2<br>+0.4 | -30.0<br>+0.6 | +4.9         | +2.0 | +0.0 | 50.1 | 54.0<br>Test 2                         | -3.9  | Verti |
| ^  | 2390.000M        | 43.8 | +28.2<br>+0.4 | -30.0<br>+0.6 | +4.9         | +2.0 | +0.0 | 49.9 | 54.0<br>Test 1                         | -4.1  | Verti |
| ^  | 2390.000M        | 40.3 | +28.2<br>+0.4 | -30.0<br>+0.6 | +4.9<br>+0.0 | +2.0 | +0.0 | 46.4 | 54.0<br>Test 2                         | -7.6  | Verti |
| ^  | 2390.000M        | 39.5 | +28.2<br>+0.4 | -30.0<br>+0.6 | +4.9<br>+0.0 | +2.0 | +0.0 | 45.6 | 54.0<br>Test 5                         | -8.4  | Verti |

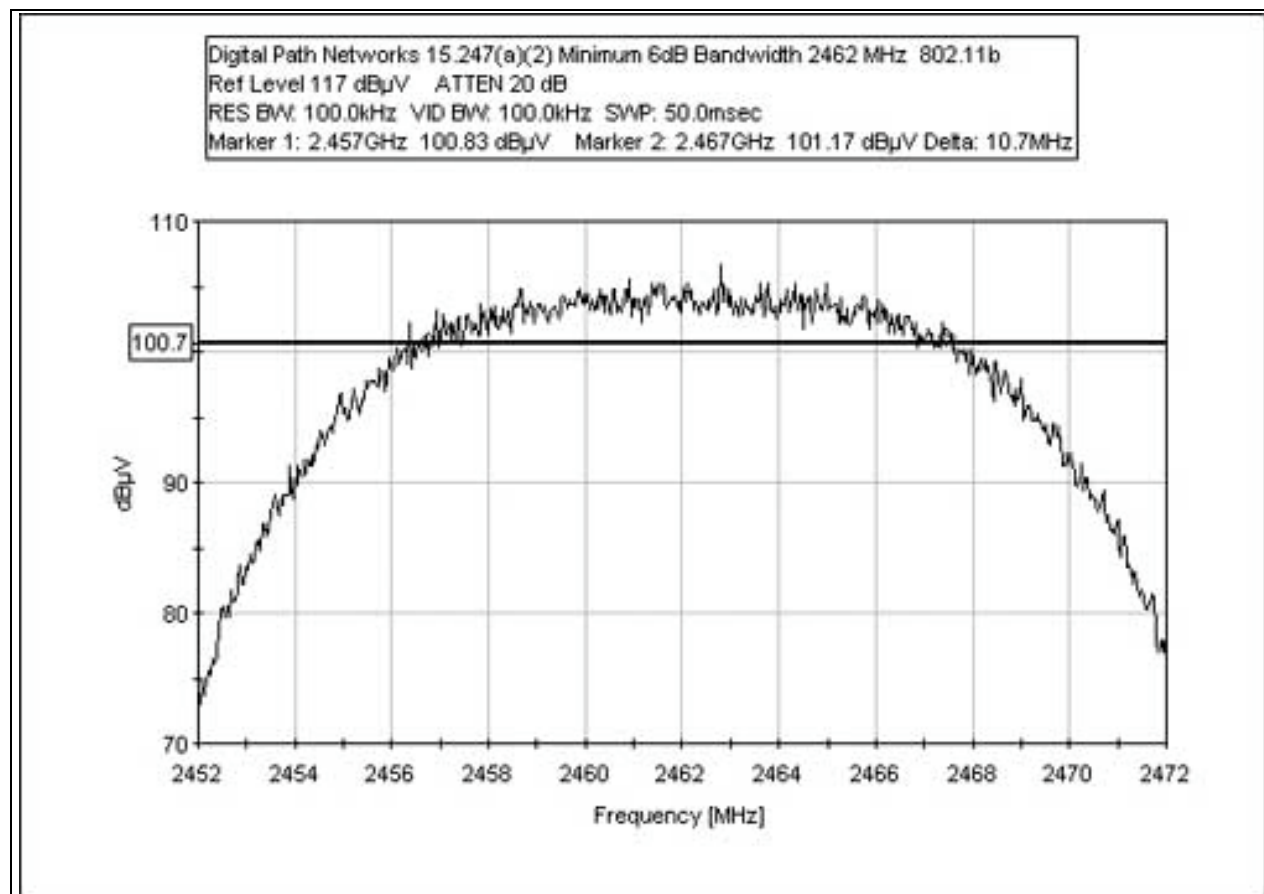
**FCC 15.247(a)(2) 6dB BANDWIDTH 2412 MHz 802.11b**



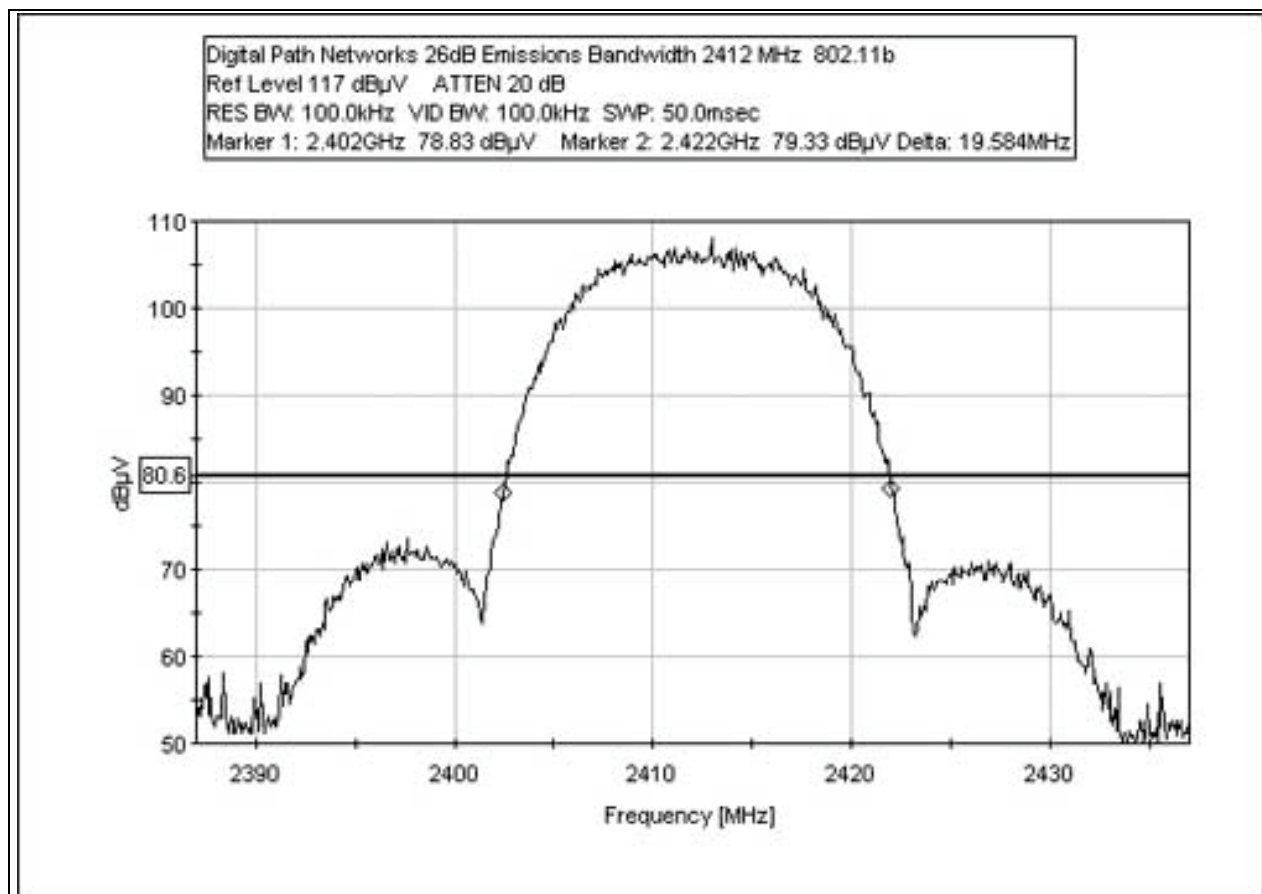
**FCC 15.247(a)(2) 6dB BANDWIDTH 2442 MHz 802.11b**



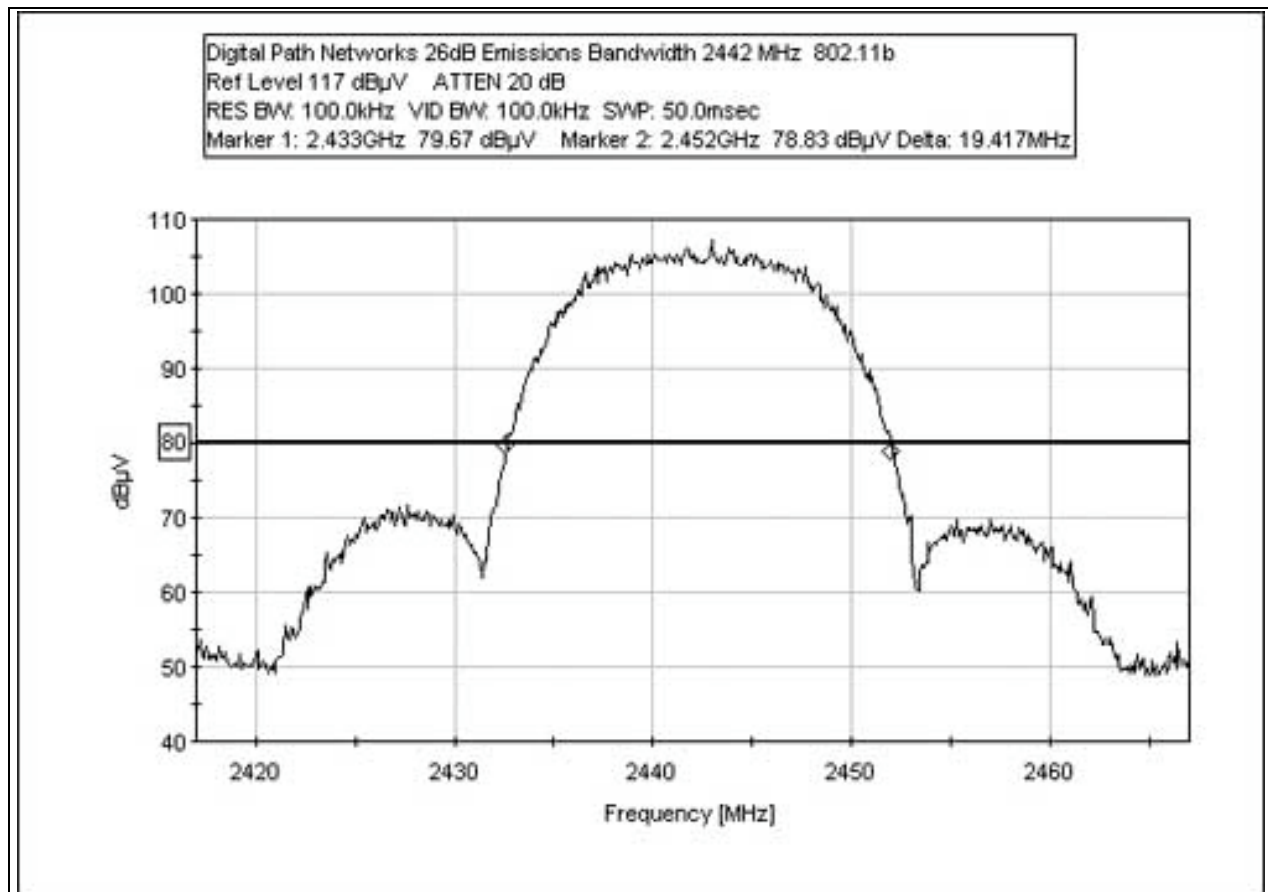
**FCC 15.247(a)(2) 6dB BANDWIDTH 2462 MHz 802.11b**



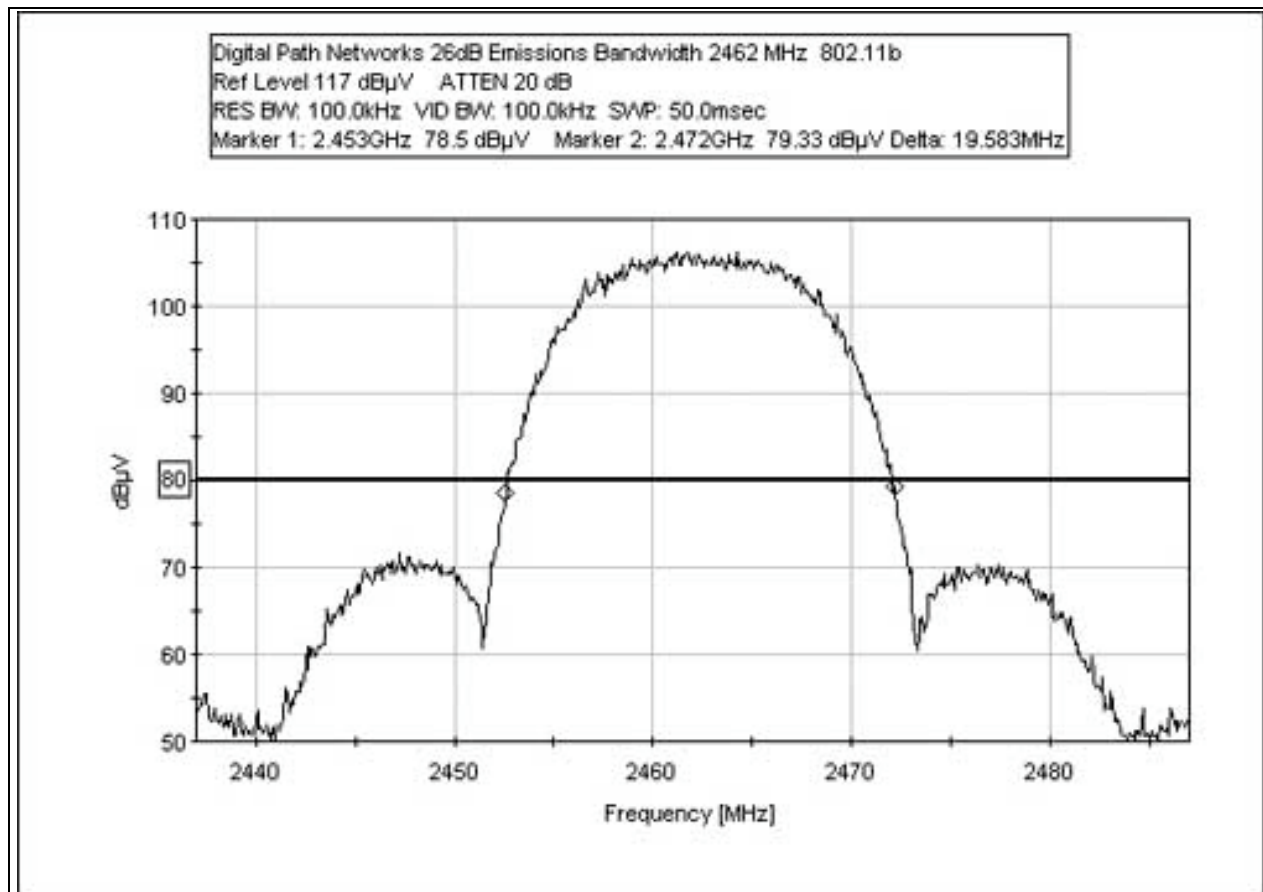
**FCC 15.247(a)(2) 26dB BANDWIDTH 2412 MHz 802.11b**



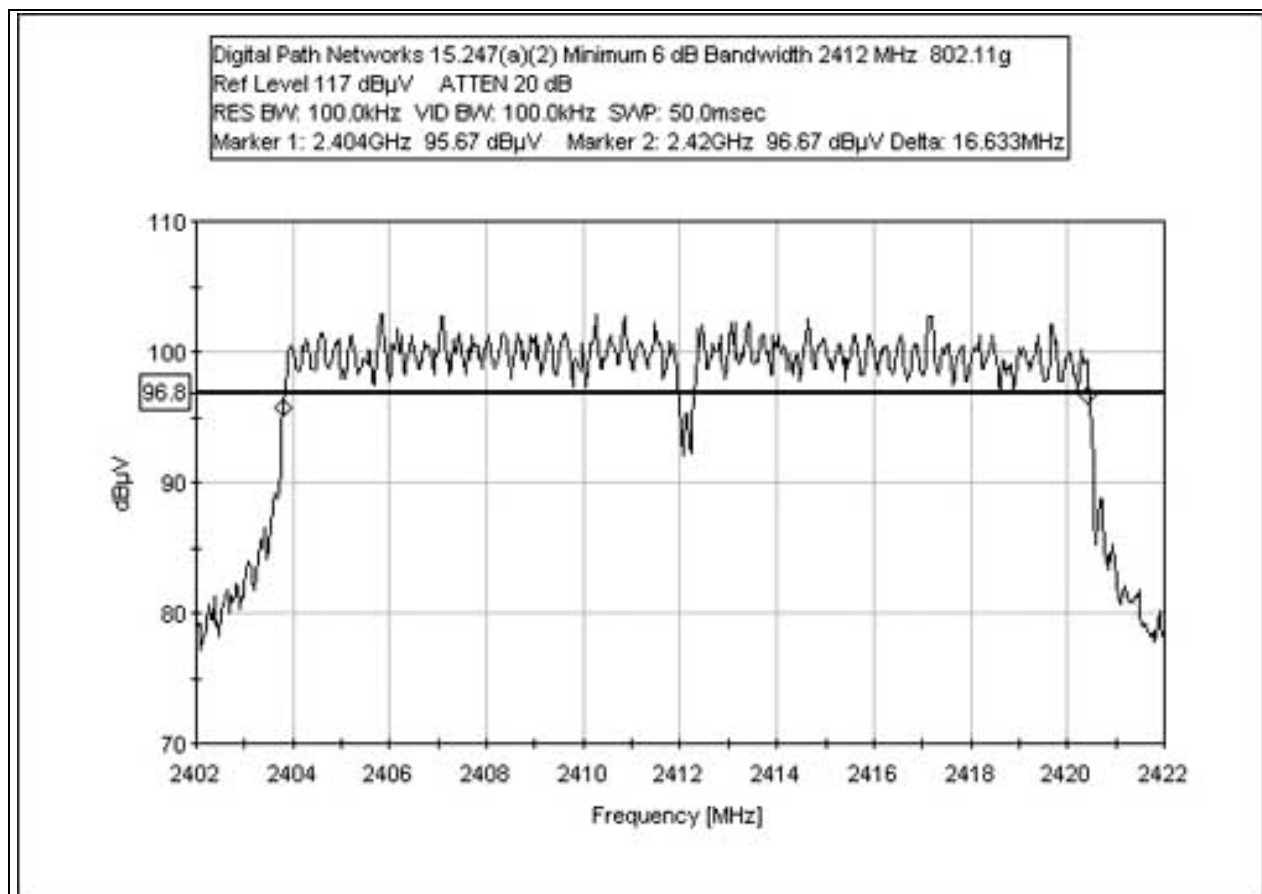
**FCC 15.247(a)(2) 26dB BANDWIDTH 2442 MHz 802.11b**



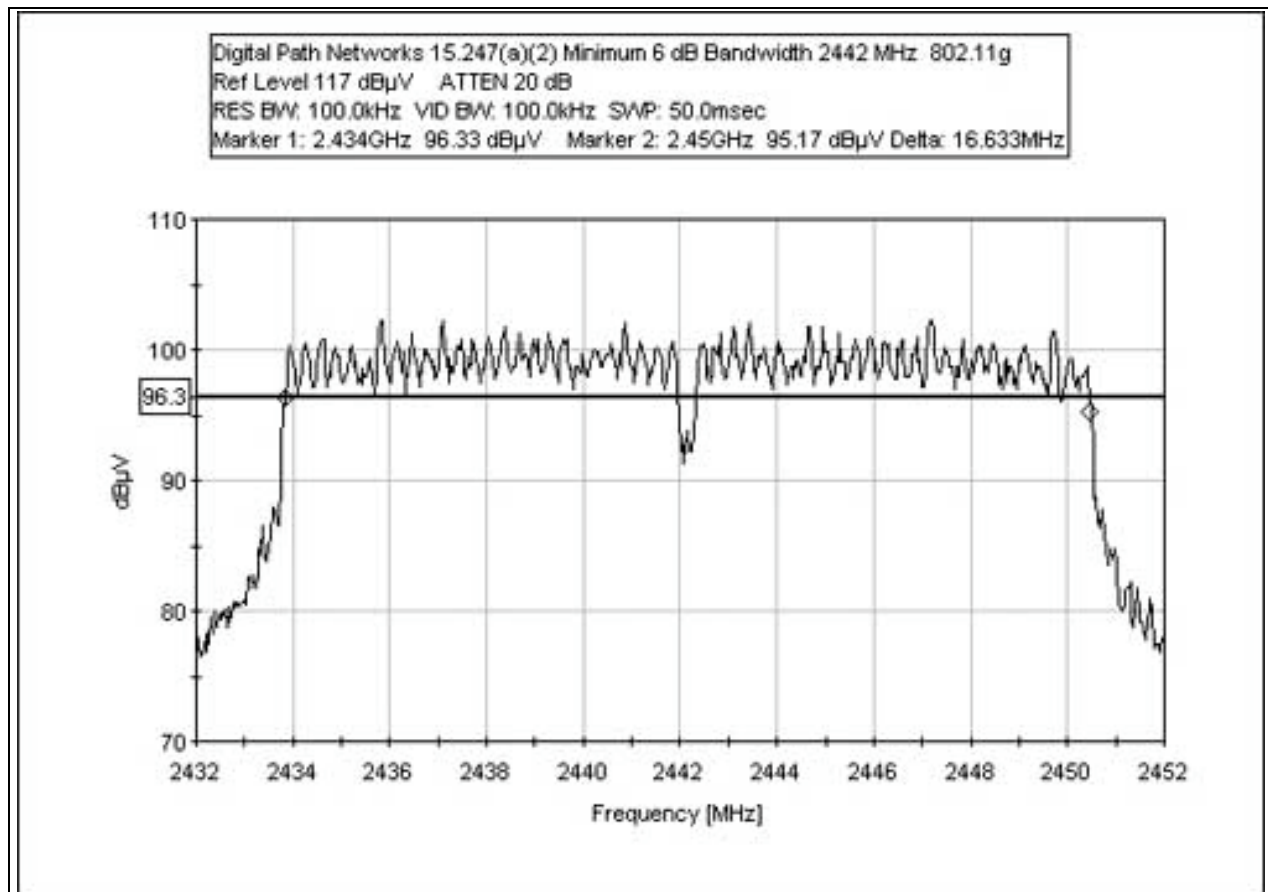
**FCC 15.247(a)(2) 26dB BANDWIDTH 2462 MHz 802.11b**



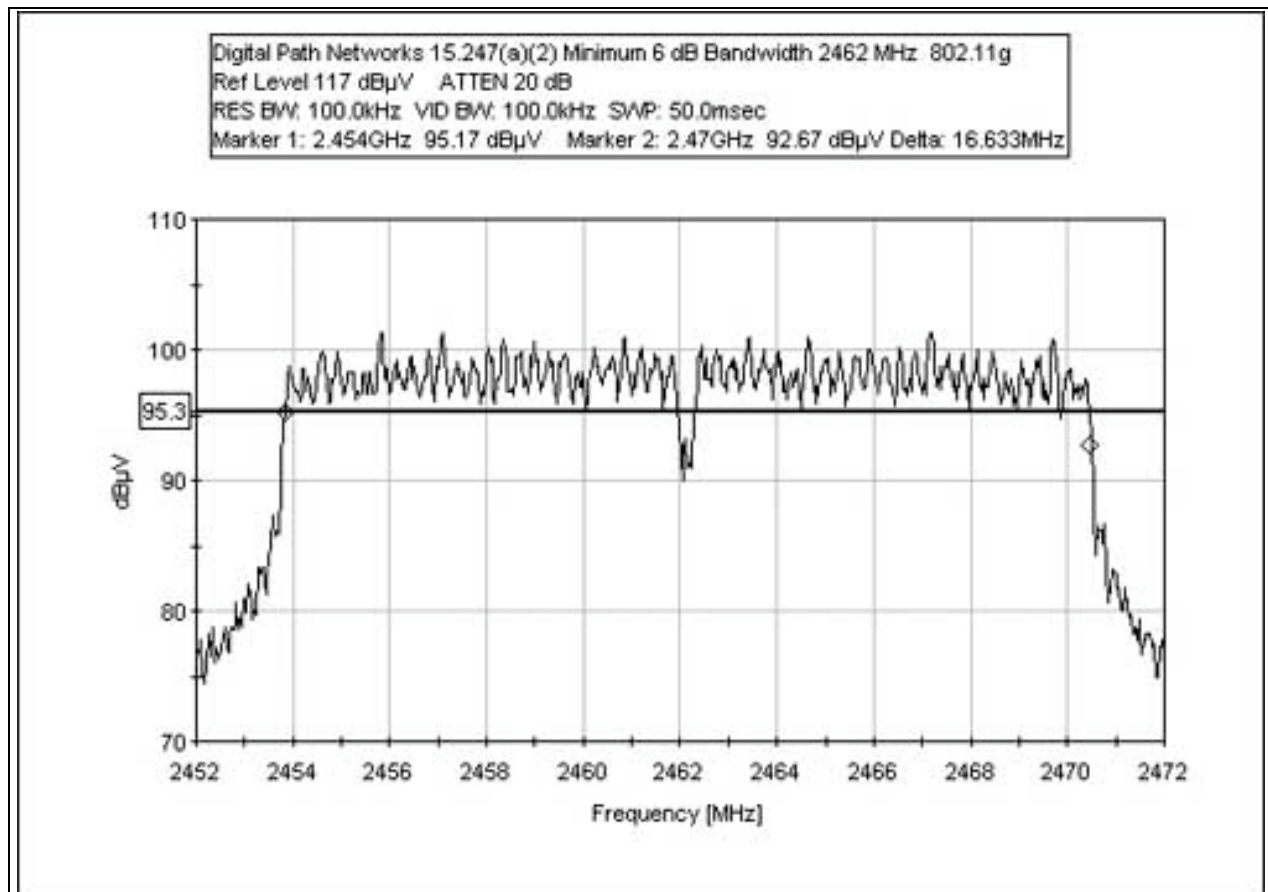
**FCC 15.247(a)(2) 6dB BANDWIDTH 2412 MHz 802.11g**



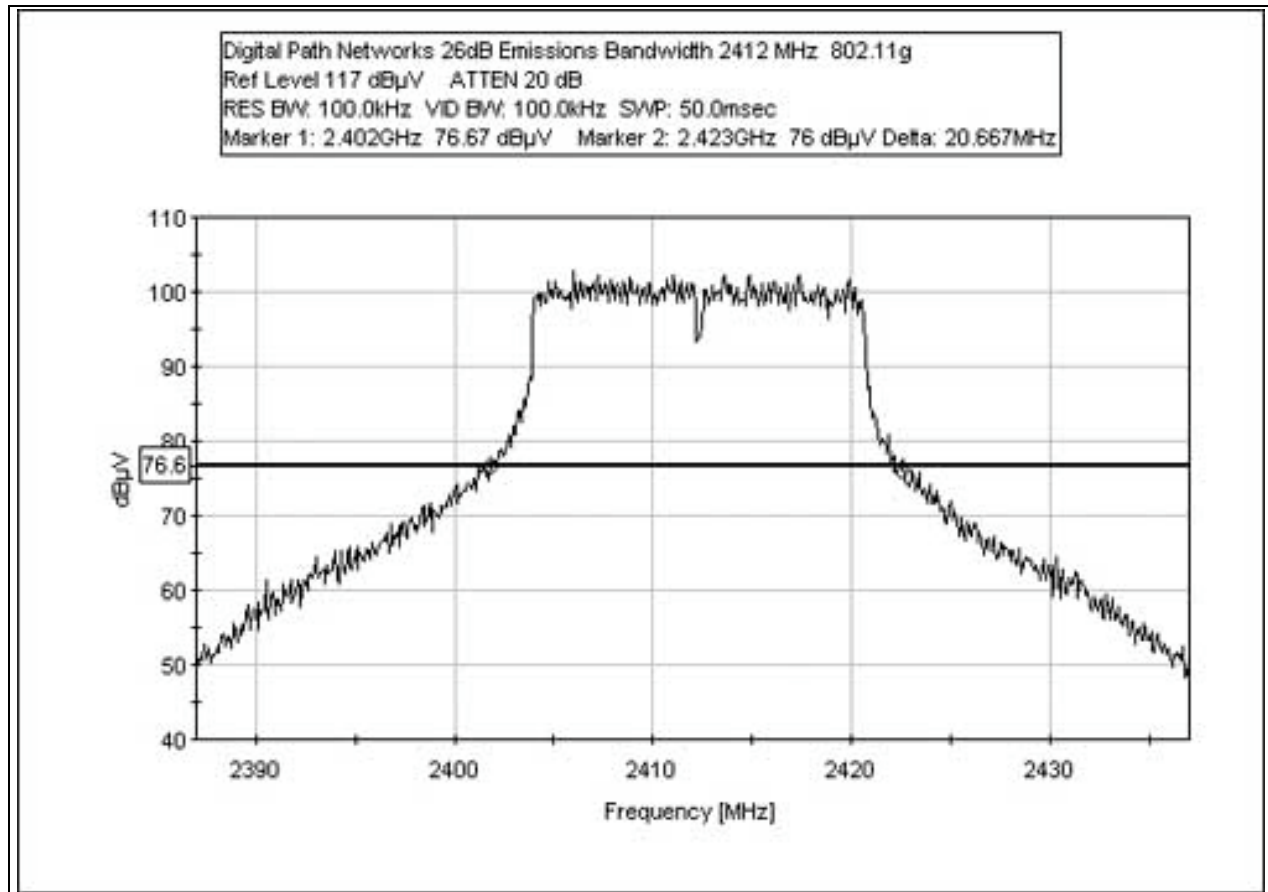
**FCC 15.247(a)(2) 6dB BANDWIDTH 2442 MHz 802.11g**



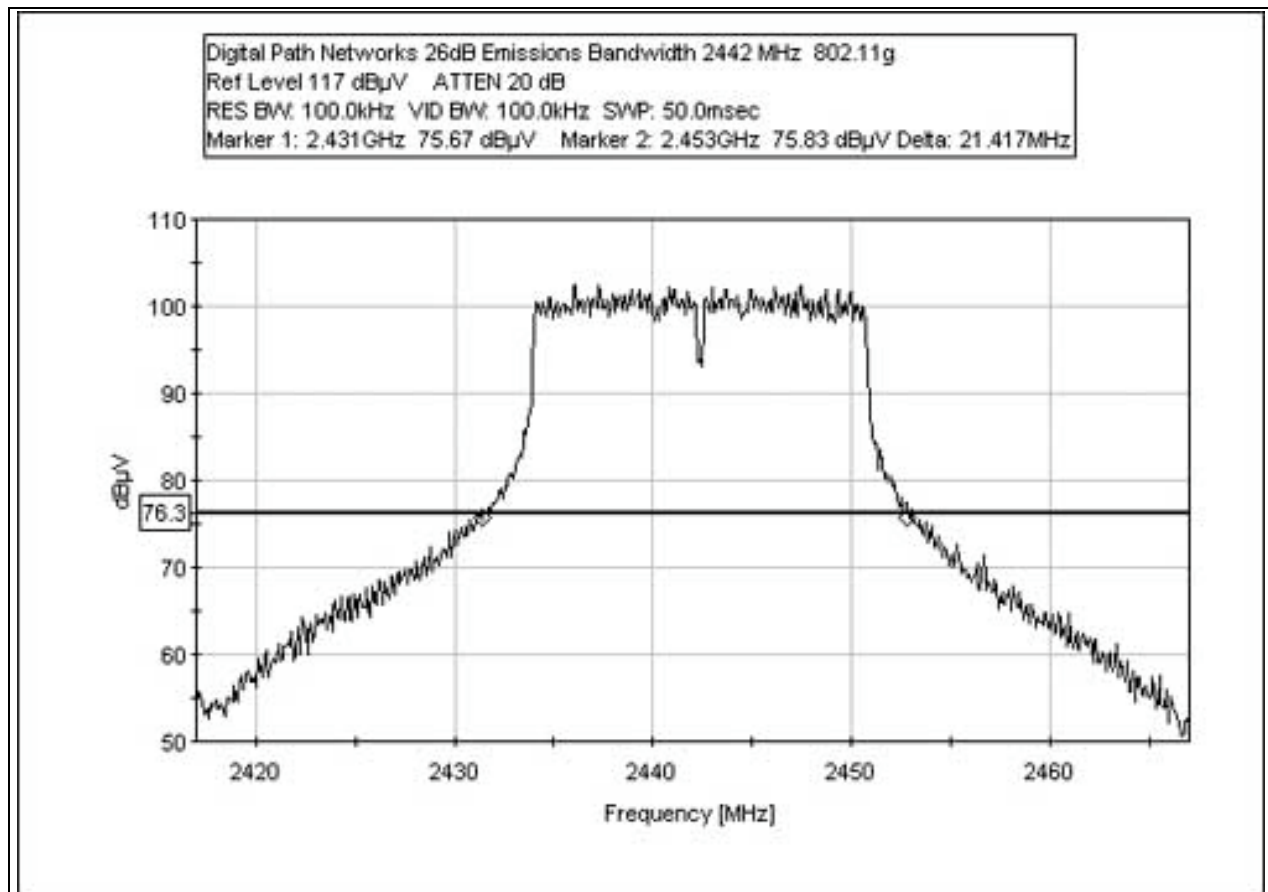
**FCC 15.247(a)(2) 6dB BANDWIDTH 2462 MHz 802.11g**



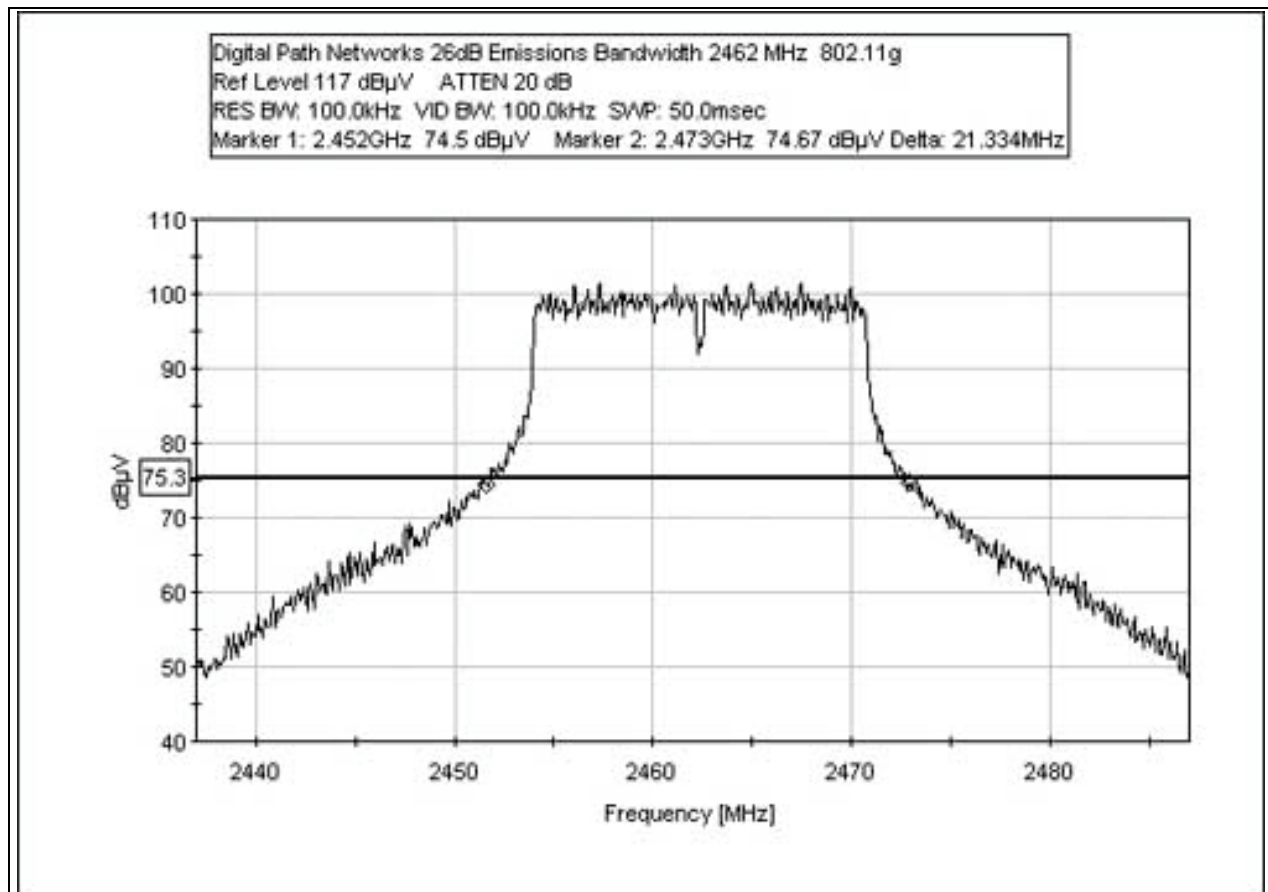
**FCC 15.247(a)(2) 26dB BANDWIDTH 2412 MHz 802.11g**



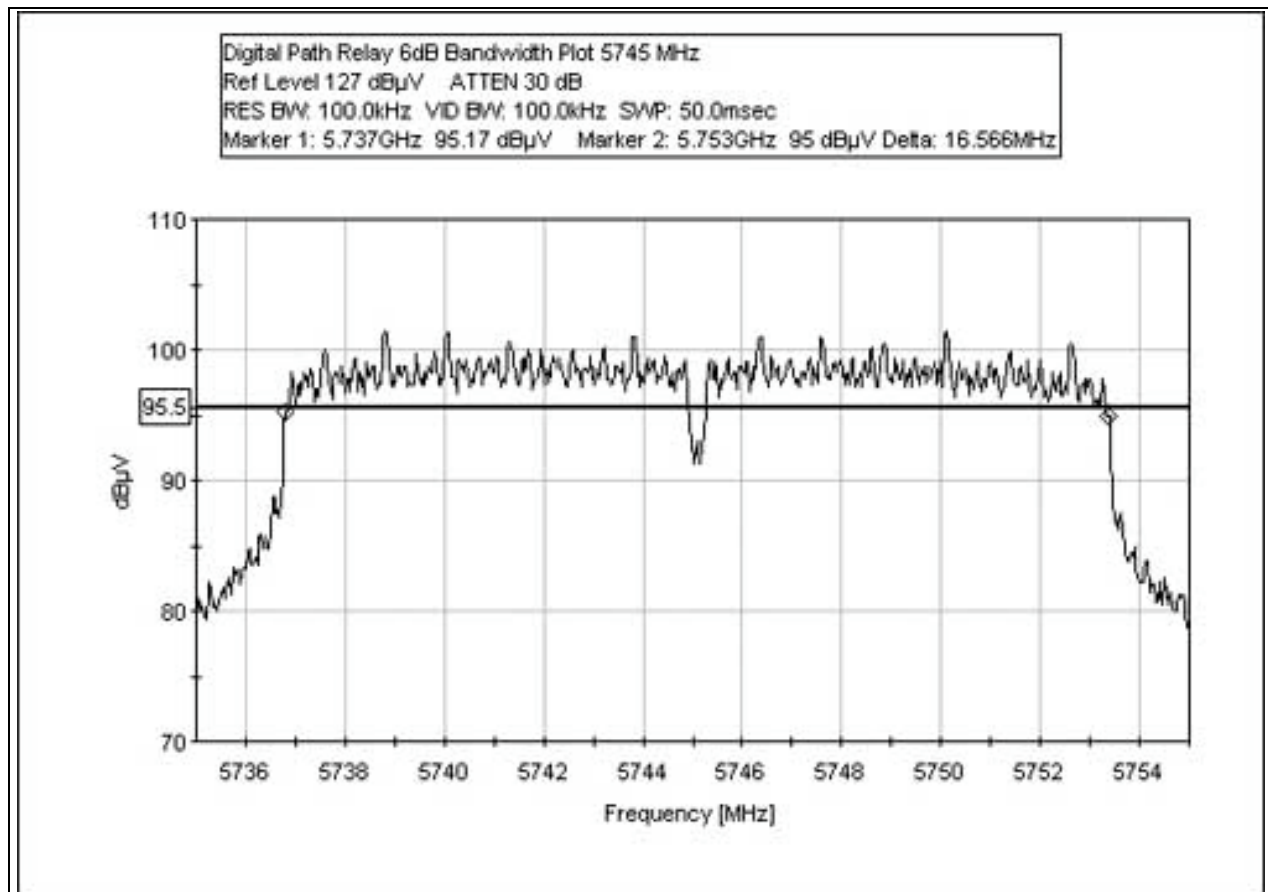
**FCC 15.247(a)(2) 26dB BANDWIDTH 2442 MHz 802.11g**



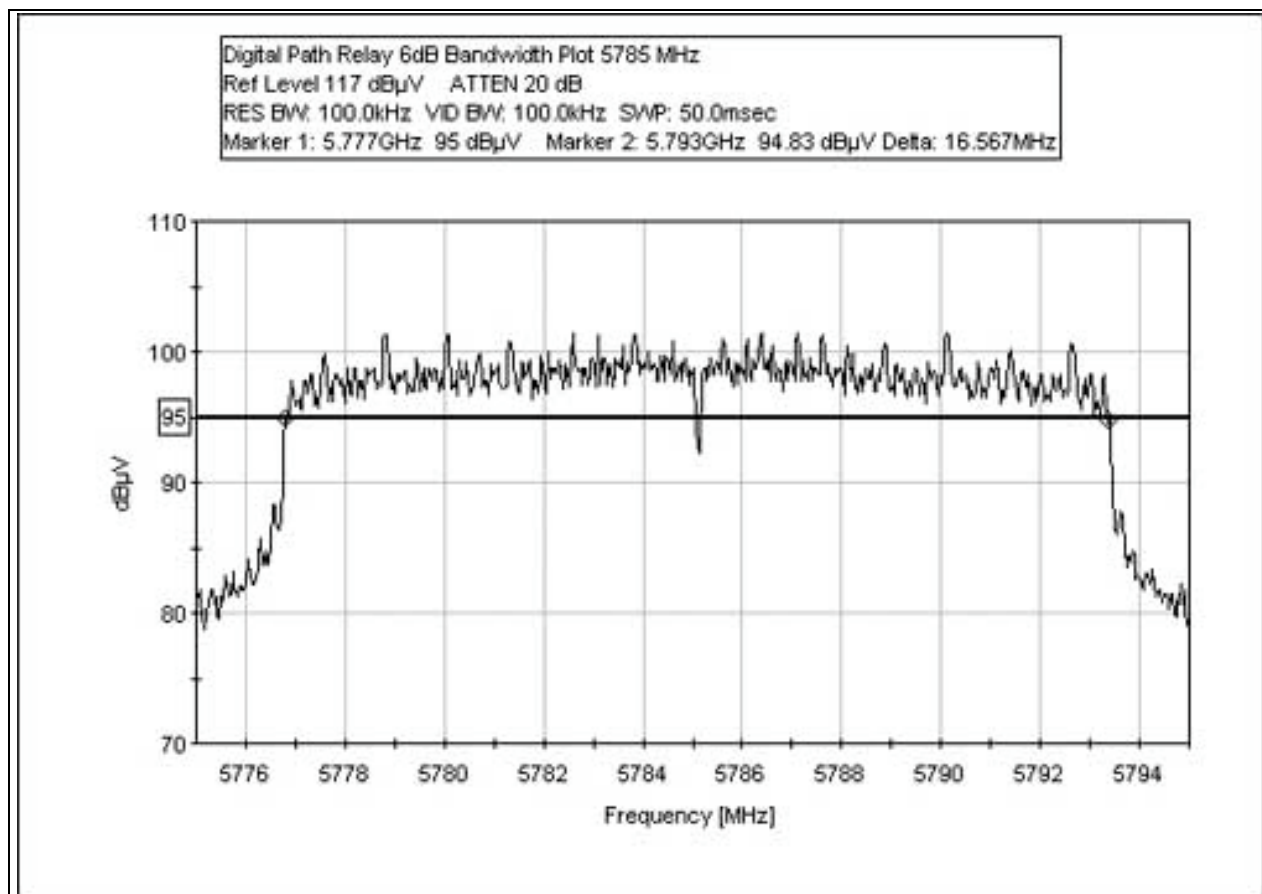
**FCC 15.247(a)(2) 26dB BANDWIDTH 2462 MHz 802.11g**



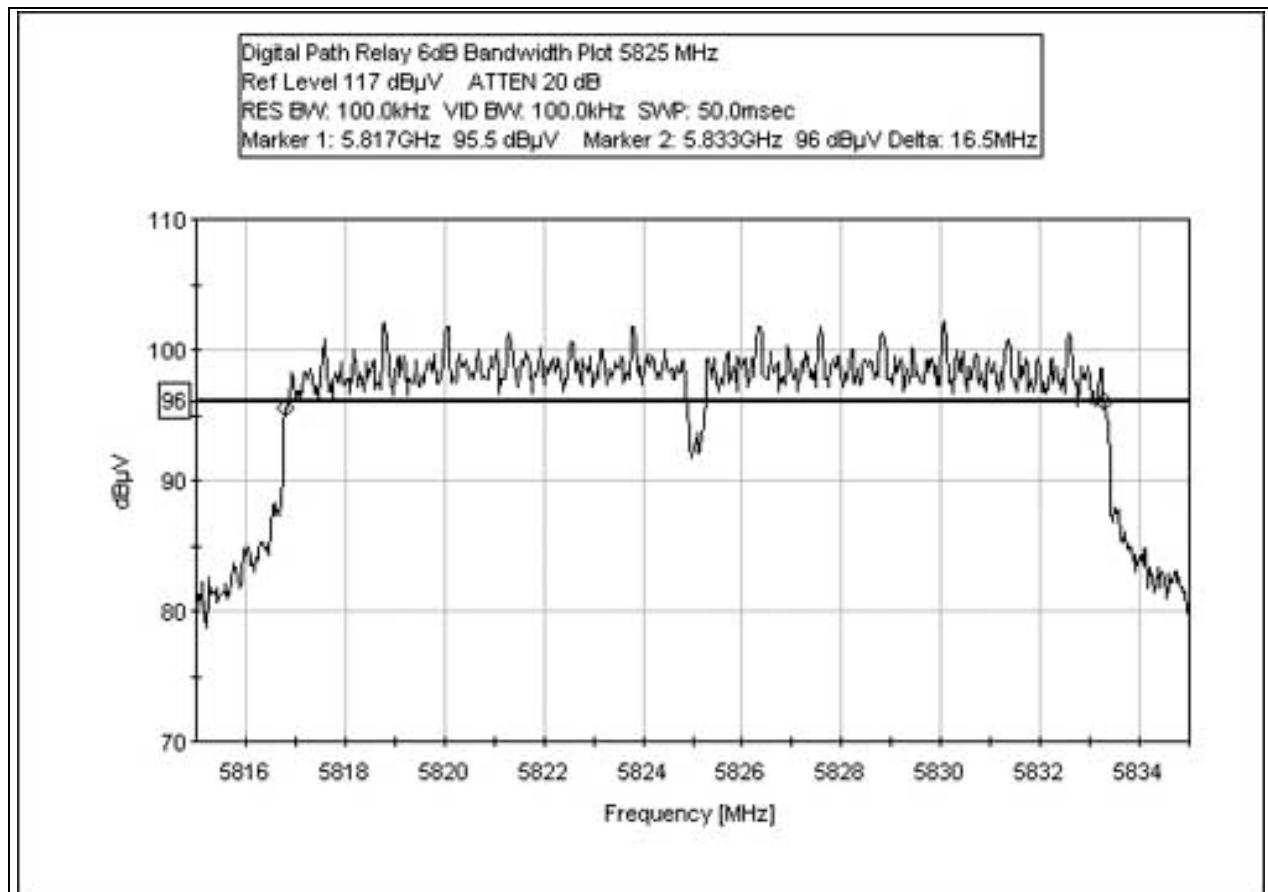
**FCC 15.247(a)(2) 6dB BANDWIDTH 5745 MHz 802.11a**



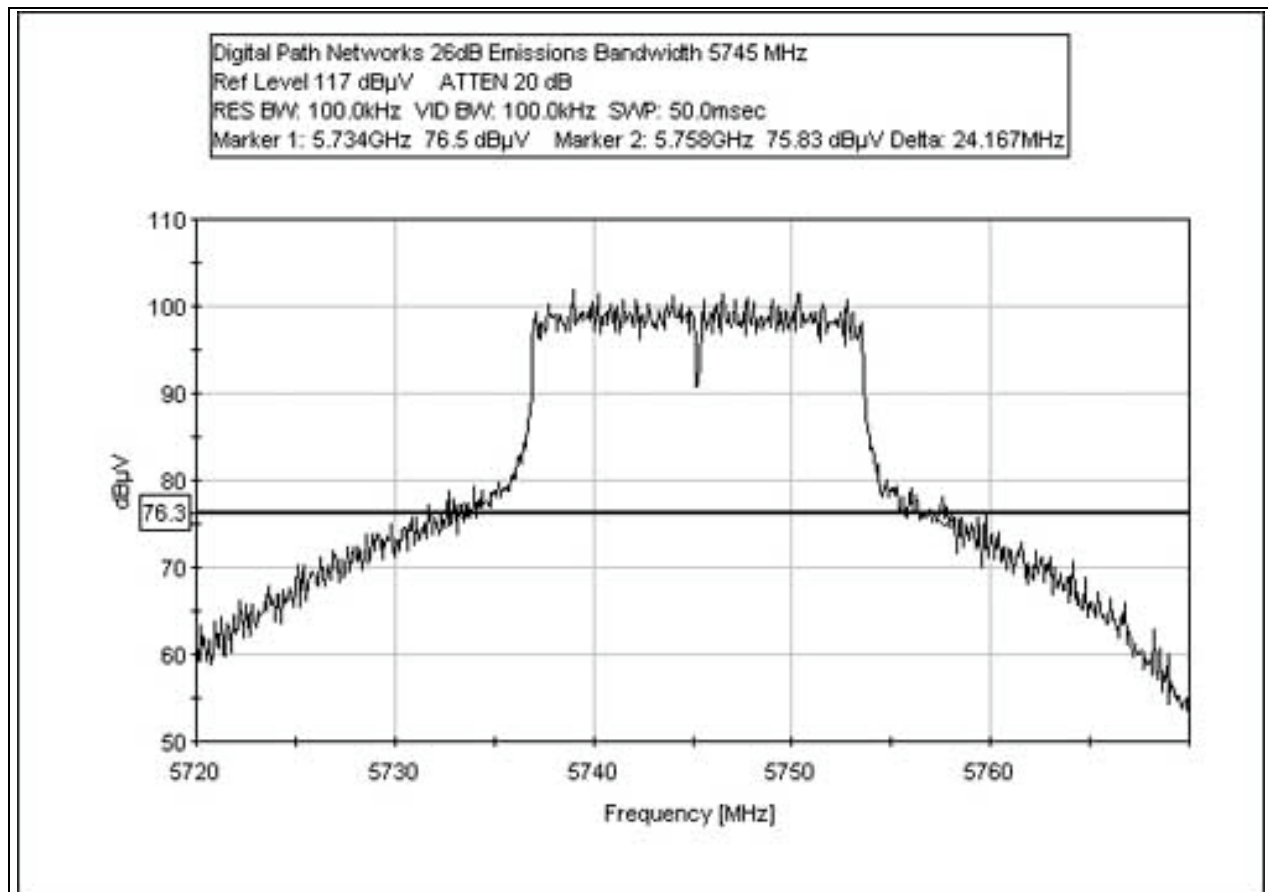
**FCC 15.247(a)(2) 6dB BANDWIDTH 5785 MHz 802.11a**



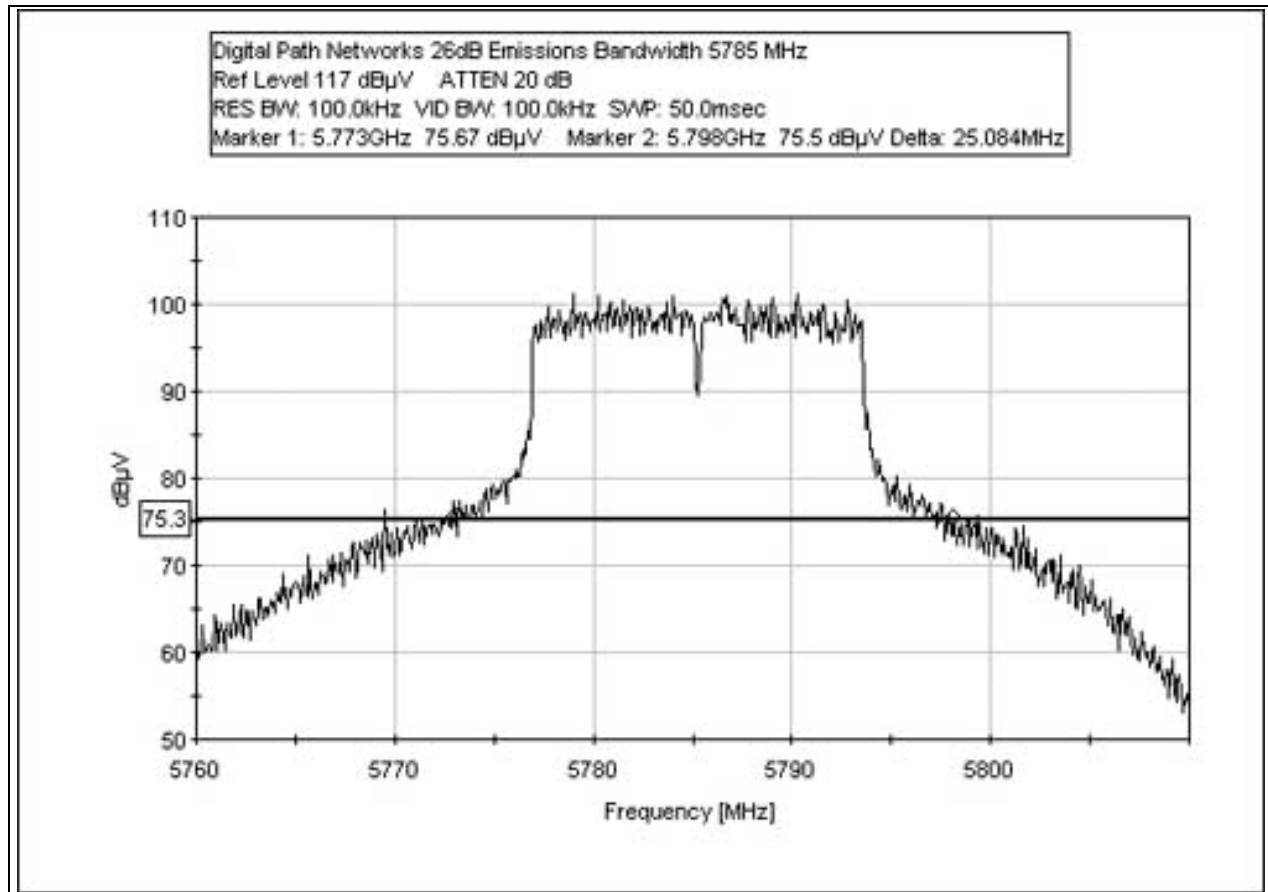
**FCC 15.247(a)(2) 6dB BANDWIDTH 5825 MHz 802.11a**



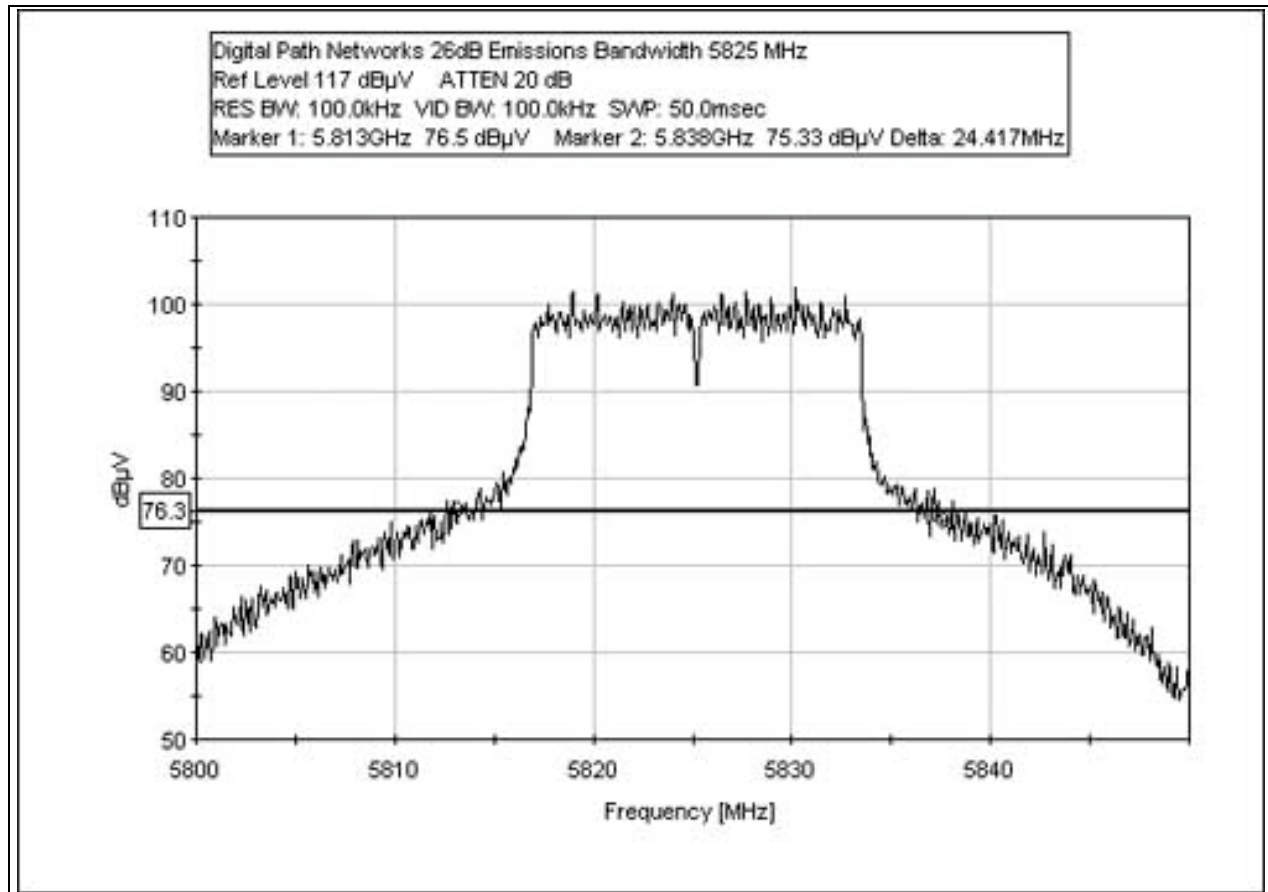
**FCC 15.247(a)(2) 26dB BANDWIDTH 5745 MHz 802.11a**



**FCC 15.247(a)(2) 26dB BANDWIDTH 5785 MHz 802.11a**



**FCC 15.247(a)(2) 26dB BANDWIDTH 5825 MHz 802.11a**



## **FCC 15.247(b)(1) PEAK OUTPUT POWER**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(b)(3)**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 13:08:46  
 Equipment: **Radio** Sequence#: 15  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

### ***Test Equipment:***

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

### ***Equipment Under Test (\* = EUT):***

| Function            | Manufacturer | Model #          | S/N        |
|---------------------|--------------|------------------|------------|
| Askey Atheros Radio | Digital Path | Relay & Downlink | 110804-001 |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

### ***Test Conditions / Notes:***

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11b default (CCK) Data Rate = 11Mbps. Channel 1 PCDAC = 50, Channel 6 PCDAC = 52, Channel 11 PCDAC = 53. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50%. RBW = 2 MHz, VBW = 3 MHz. The power output is integrated over the emissions bandwidth by the following calculation:  $\text{Power(dB/2 MHz RBW)} + 10 * \text{LOG(EBW / 2MHz RBW)}$ . The measured 26dB Emissions Bandwidth is 20MHz, therefore the bandwidth correction is 10.0dB.

Test setup is in accordance with “New DTS Test Procedures” released in the FCC Information Database.

### **EUT operating in 802.11b mode**

| Frequency | Power Output (Watts) | Limit (Watts) | Result |
|-----------|----------------------|---------------|--------|
| 2412      | 0.49                 | 0.5           | Pass   |
| 2442      | 0.48                 | 0.5           | Pass   |
| 2462      | 0.48                 | 0.5           | Pass   |

15.247(b)(4) Except as shown in paragraphs (b)(4)(i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(i) Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

(ii) Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

15.247(b)(3) limit is adjusted for use with a 9dBi gain omni-directional antenna and a 14.2dBi gain directional antenna as follows:

| <b>Antenna Gain<br/>(dBi)</b> | <b>Required<br/>Reduction</b> | <b>Limit<br/>Reduction<br/>(dB)</b> | <b>Limit<br/>(dBm)</b> |
|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| 9.0                           | 1:1 above 6dB                 | 3                                   | 27                     |
| 14.2                          | 3:1 above 6dB                 | 3                                   | 27                     |



Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**

Specification: **15.247(b)(3)**

Work Order #: **82775**

Date: 11/11/2004

Test Type: **Antenna Port**

Time: 13:22:21

Equipment: **Radio**

Sequence#: 1

Manufacturer: Digital Path

Tested By: Randal Clark

Model: Relay & Downlink

120V 60Hz

S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function            | Manufacturer | Model #          | S/N        |
|---------------------|--------------|------------------|------------|
| Askey Atheros Radio | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11g default (OFDM) Data Rate = 54Mbps Channel 1 PCDAC = 47, Channel 6 PCDAC = 47, Channel 11 PCDAC = 48. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50%. RBW = 2 MHz, VBW = 3 MHz The power output is integrated over the emissions bandwidth by the following calculation:  $\text{Power(dB/2 MHz RBW)} + 10 \cdot \text{LOG}(\text{EBW} / 2\text{MHz RBW})$ . The measured 26dB Emissions Bandwidth is 22MHz, therefore the bandwidth correction is 10.4dB.

Test setup is in accordance with “New DTS Test Procedures” released in the FCC Information Database.

**EUT operating in 802.11g mode**

| Frequency | Power Output (Watts) | Limit (Watts) | Result |
|-----------|----------------------|---------------|--------|
| 2412      | 0.48                 | 0.5           | Pass   |
| 2442      | 0.47                 | 0.5           | Pass   |
| 2462      | 0.47                 | 0.5           | Pass   |

15.247(b)(4) Except as shown in paragraphs (b)(4)(i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6 dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(i) Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

(ii) Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

15.247(b)(3) limit is adjusted for use with a 9dBi gain omni-directional antenna and a 14.2dBi gain directional antenna as follows:

| Antenna Gain (dBi) | Required Reduction | Limit Reduction (dB) | Limit (dBm) |
|--------------------|--------------------|----------------------|-------------|
| 9.0                | 1:1 above 6dB      | 3                    | 27          |
| 14.2               | 3:1 above 6dB      | 3                    | 27          |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(b)(3)**  
 Work Order #: **82775**  
 Test Type: **Antenna Port**  
 Equipment: **Askey Atheros Radio**  
 Manufacturer: Digital Path  
 Model: Relay & Downlink  
 S/N: 110804-001

Date: 11/10/2004  
 Time: 16:57:04  
 Sequence#: 2  
 Tested By: Randal Clark  
 120V 60Hz

**Test Equipment:**

| Function            | S/N        | Calibration Date | Cal Due Date | Asset # |
|---------------------|------------|------------------|--------------|---------|
| SA_8564E            | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel attenuator | 6dB J7614  | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline            | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

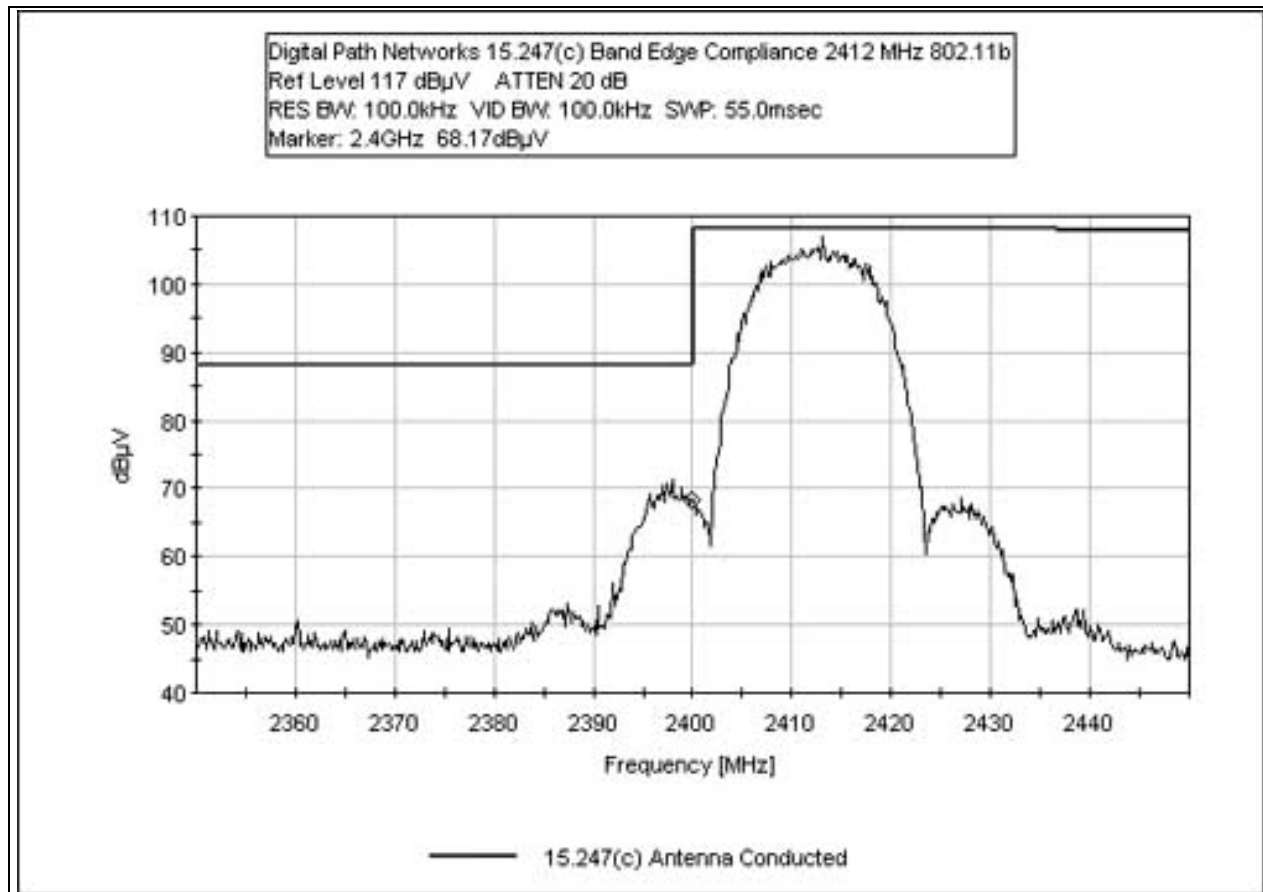
**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.8GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps PCDAC=50. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50%. RBW = 2 MHz, VBW = 3 MHz. The power output is integrated over the emissions bandwidth by the following calculation:  $\text{Power(dB/2 MHz RBW)} + 10 * \text{LOG(EBW / 2MHz RBW)}$ . The measured 26dB Emissions Bandwidth is 25MHz, therefore the bandwidth correction is 10.9dB.

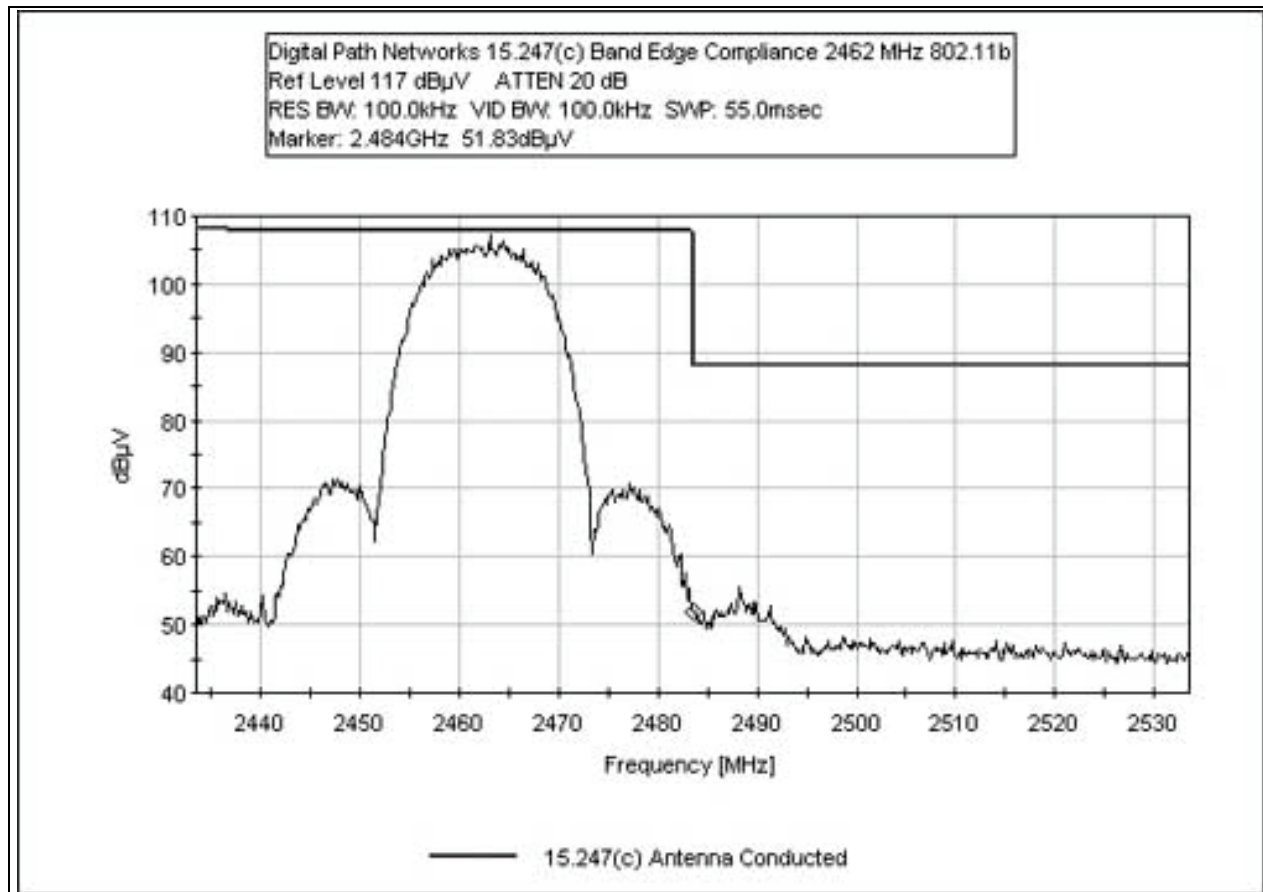
Test setup is in accordance with “New DTS Test Procedures” released in the FCC Information Database.

| Frequency | Power Output (Watts) | Limit (Watts) | Result |
|-----------|----------------------|---------------|--------|
| 5745      | 0.95                 | 1.0           | Pass   |
| 5785      | 0.93                 | 1.0           | Pass   |
| 5825      | 0.93                 | 1.0           | Pass   |

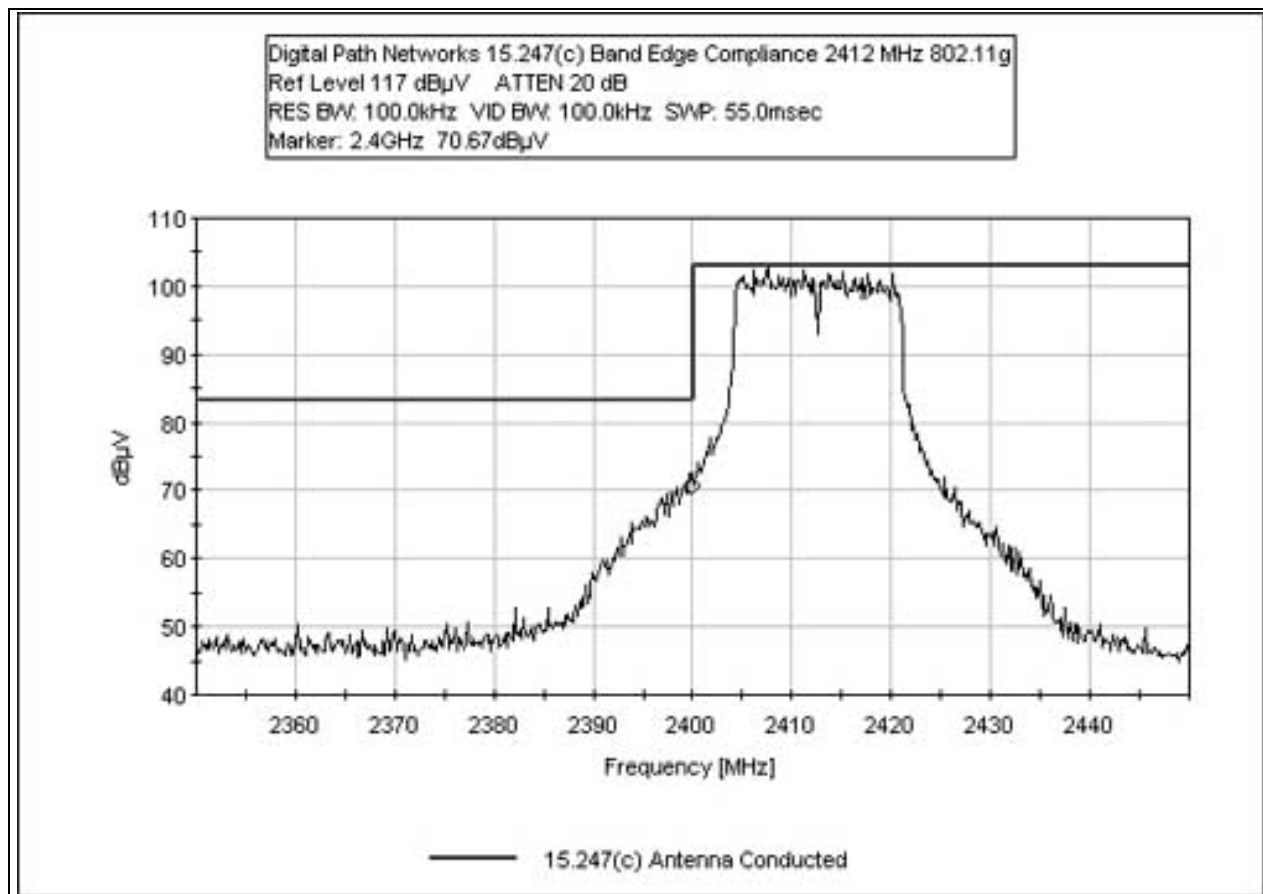
**FCC 15.247(c) BANDEDGE ANTENNA CONDUCTED MEASUREMENT**  
**2412 MHz 802.11b**



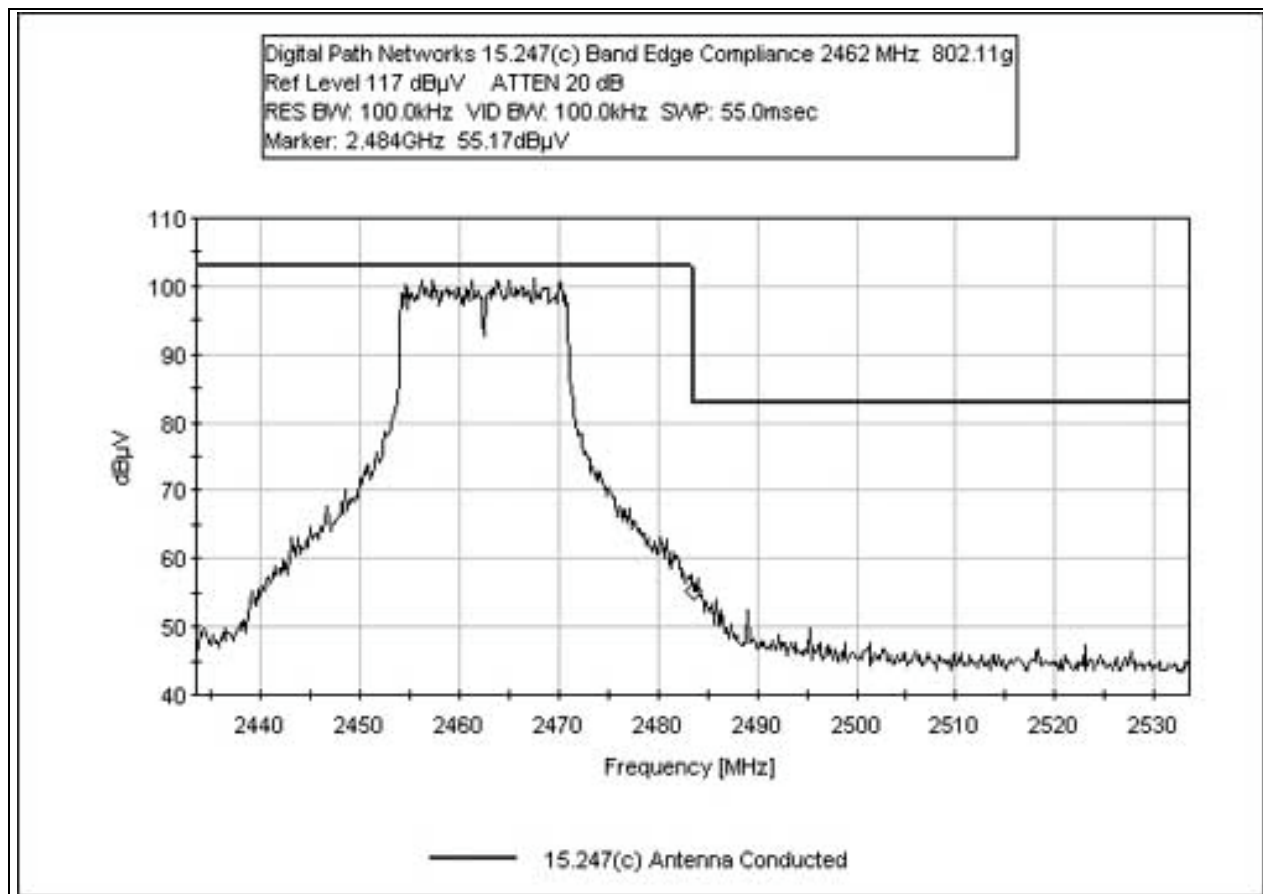
**FCC 15.247(c) BANDEDGE ANTENNA CONDUCTED MEASUREMENT**  
**2462 MHz 802.11b**



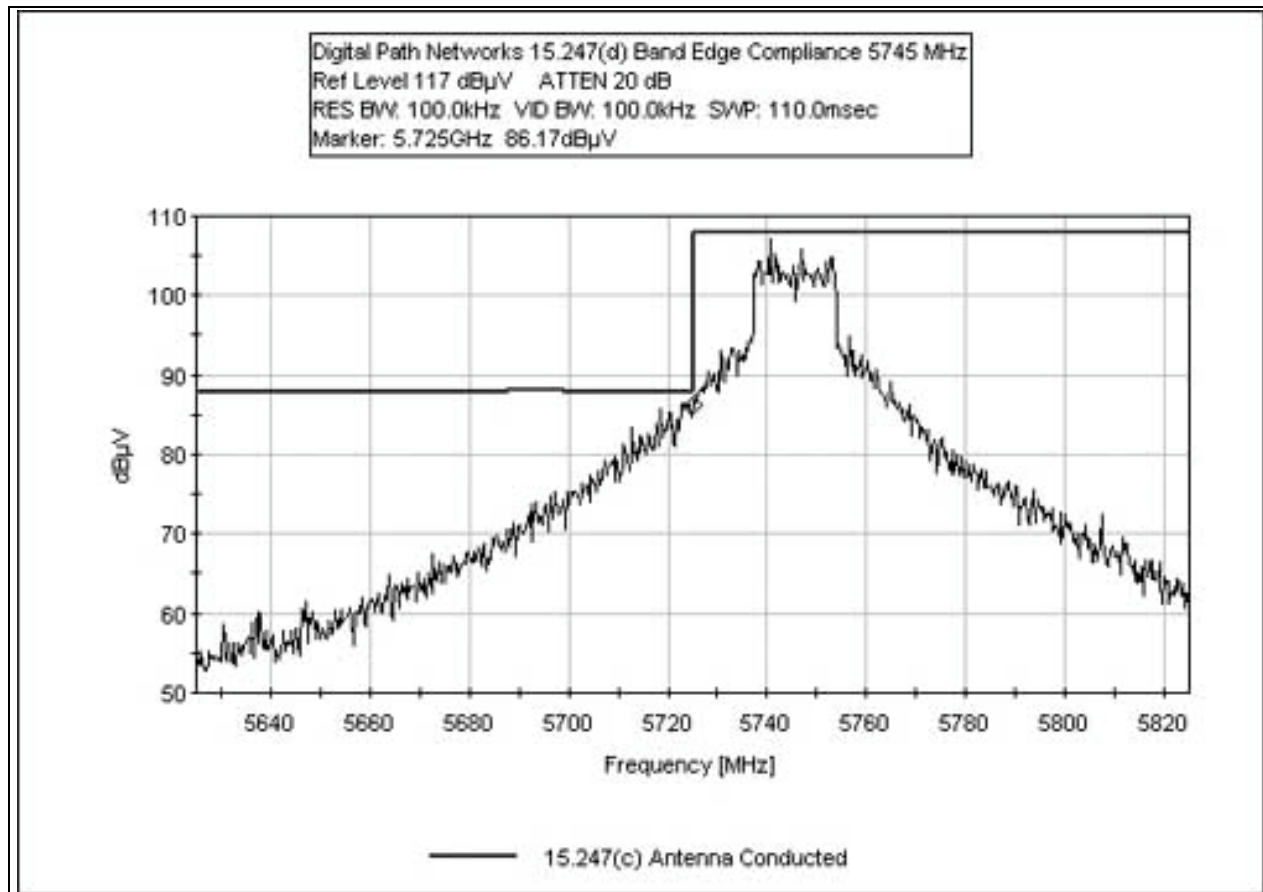
**FCC 15.247(c) BANDEDGE ANTENNA CONDUCTED MEASUREMENT**  
**2412 MHz 802.11g**



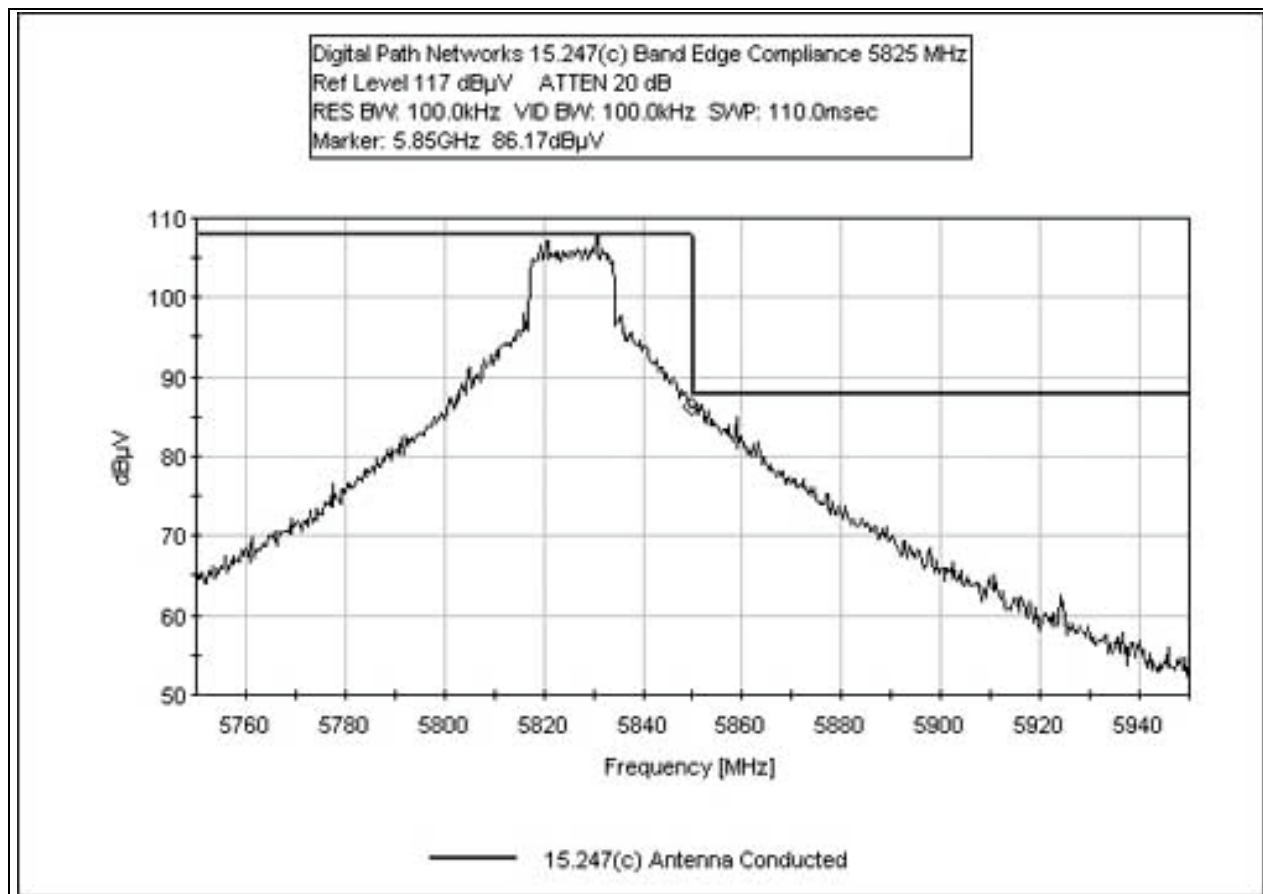
**FCC 15.247(c) BANDEDGE ANTENNA CONDUCTED MEASUREMENT**  
**2462 MHz 802.11g**



**FCC 15.247(c) BANDEDGE ANTENNA CONDUCTED MEASUREMENT**  
**5745 MHz 802.11a**



**FCC 15.247(c) BANDEDGE ANTENNA CONDUCTED MEASUREMENT**  
**5825 MHz 802.11a**



## **FCC 15.247(c) ANTENNA CONDUCTED SPURIOUS EMISSIONS**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362  
 Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 16:11:57  
 Equipment: **Askey Atheros Radio** Sequence#: 16  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

### ***Test Equipment:***

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

### ***Test Conditions / Notes:***

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11b default (CCK) Data Rate = 11Mbps PCDAC=53. Carrier Frequency: 2462 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz, Temperature: 20°C, Relative Humidity: 50%.

### ***Transducer Legend:***

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

### ***Measurement Data:*** Reading listed by margin. Test Lead: Antenna

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----|----|---------------|--------------|--------------|--------------|--------------|
| 1 | 2462.000M   | 106.5        | +5.8     | +1.2     |    |    | +0.0          | 113.5        | 115.0        | -1.5         | Anten        |
|   |             |              |          |          |    |    |               | Carrier      |              |              |              |
| 2 | 4924.000M   | 57.8         | +5.8     | +1.1     |    |    | +0.0          | 64.7         | 95.0         | -30.3        | Anten        |
| 3 | 2488.533M   | 56.3         | +5.8     | +1.2     |    |    | +0.0          | 63.3         | 95.0         | -31.7        | Anten        |
| 4 | 4925.029M   | 56.3         | +5.8     | +1.1     |    |    | +0.0          | 63.2         | 95.0         | -31.8        | Anten        |
| 5 | 506.786M    | 51.5         | +5.7     | +0.5     |    |    | +0.0          | 57.7         | 95.0         | -37.3        | Anten        |
| 6 | 2483.500M   | 50.3         | +5.8     | +1.2     |    |    | +0.0          | 57.3         | 95.0         | -37.7        | Anten        |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 24840.170M | 49.7 | +6.2 | +1.3 | +0.0 | 57.2 | 95.0 | -37.8 | Anten |
| 8  | 23956.800M | 49.8 | +5.8 | +1.4 | +0.0 | 57.0 | 95.0 | -38.0 | Anten |
| 9  | 2690.261M  | 49.5 | +5.8 | +1.2 | +0.0 | 56.5 | 95.0 | -38.5 | Anten |
| 10 | 24620.000M | 48.7 | +6.1 | +1.2 | +0.0 | 56.0 | 95.0 | -39.0 | Anten |
| 11 | 26000.000M | 48.3 | +5.9 | +1.1 | +0.0 | 55.3 | 95.0 | -39.7 | Anten |
| 12 | 37265.440M | 53.0 | +0.0 | +1.9 | +0.0 | 54.9 | 95.0 | -40.1 | Anten |
| 13 | 21845.070M | 47.2 | +6.0 | +1.1 | +0.0 | 54.3 | 95.0 | -40.7 | Anten |
| 14 | 17413.960M | 46.7 | +6.0 | +1.2 | +0.0 | 53.9 | 95.0 | -41.1 | Anten |
| 15 | 11221.800M | 46.0 | +5.9 | +1.3 | +0.0 | 53.2 | 95.0 | -41.8 | Anten |
| 16 | 262.574M   | 46.0 | +5.7 | +0.4 | +0.0 | 52.1 | 95.0 | -42.9 | Anten |
| 17 | 1798.482M  | 45.3 | +5.7 | +1.1 | +0.0 | 52.1 | 95.0 | -42.9 | Anten |
| 18 | 595.988M   | 45.7 | +5.7 | +0.5 | +0.0 | 51.9 | 95.0 | -43.1 | Anten |
| 19 | 1020.393M  | 45.2 | +5.7 | +0.5 | +0.0 | 51.4 | 95.0 | -43.6 | Anten |
| 20 | 150.164M   | 44.8 | +5.7 | +0.4 | +0.0 | 50.9 | 95.0 | -44.1 | Anten |
| 21 | 31025.040M | 49.0 | +0.0 | +1.9 | +0.0 | 50.9 | 95.0 | -44.1 | Anten |
| 22 | 91.135M    | 44.7 | +5.7 | +0.4 | +0.0 | 50.8 | 95.0 | -44.2 | Anten |
| 23 | 51.516M    | 44.7 | +5.7 | +0.3 | +0.0 | 50.7 | 95.0 | -44.3 | Anten |
| 24 | 14772.000M | 43.5 | +5.9 | +0.8 | +0.0 | 50.2 | 95.0 | -44.8 | Anten |
| 25 | 17234.000M | 42.5 | +6.0 | +1.2 | +0.0 | 49.7 | 95.0 | -45.3 | Anten |
| 26 | 22158.000M | 42.5 | +6.0 | +1.1 | +0.0 | 49.6 | 95.0 | -45.4 | Anten |
| 27 | 9848.001M  | 41.8 | +5.9 | +1.3 | +0.0 | 49.0 | 95.0 | -46.0 | Anten |
| 28 | 7386.000M  | 41.8 | +5.8 | +1.3 | +0.0 | 48.9 | 95.0 | -46.1 | Anten |
| 29 | 12310.000M | 41.8 | +5.9 | +0.8 | +0.0 | 48.5 | 95.0 | -46.5 | Anten |
| 30 | 19696.000M | 41.0 | +6.1 | +1.1 | +0.0 | 48.2 | 95.0 | -46.8 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775**  
 Test Type: **Antenna Port**  
 Equipment: **Askey Atheros Radio**  
 Manufacturer: Digital Path  
 Model: Relay & Downlink  
 S/N: 110804-001

Date: 11/11/2004  
 Time: 14:57:33  
 Sequence#: 17  
 Tested By: Randal Clark  
 120V 60Hz

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11b default (CCK) Data Rate = 11Mbps PCDAC=52, Carrier Frequency: 2442 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20°C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

**Measurement Data:**

Reading listed by margin.

Test Lead: Antenna

| # | Freq MHz   | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 2442.000M  | 108.0     | +5.8  | +1.2  |    |    | +0.0       | 115.0     | 115.0     | +0.0      | Anten     |
|   |            |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 4884.034M  | 56.7      | +5.8  | +1.1  |    |    | +0.0       | 63.6      | 95.0      | -31.4     | Anten     |
| 3 | 2361.920M  | 51.2      | +5.7  | +1.2  |    |    | +0.0       | 58.1      | 95.0      | -36.9     | Anten     |
| 4 | 24792.960M | 50.5      | +6.1  | +1.3  |    |    | +0.0       | 57.9      | 95.0      | -37.1     | Anten     |
| 5 | 486.863M   | 51.2      | +5.7  | +0.5  |    |    | +0.0       | 57.4      | 95.0      | -37.6     | Anten     |
| 6 | 2690.261M  | 49.2      | +5.8  | +1.2  |    |    | +0.0       | 56.2      | 95.0      | -38.8     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 25777.470M | 49.3 | +5.9 | +1.0 | +0.0 | 56.2 | 95.0 | -38.8 | Anten |
| 8  | 23808.460M | 48.5 | +6.0 | +1.4 | +0.0 | 55.9 | 95.0 | -39.1 | Anten |
| 9  | 17463.560M | 48.0 | +6.0 | +1.2 | +0.0 | 55.2 | 95.0 | -39.8 | Anten |
| 10 | 26000.000M | 47.8 | +5.9 | +1.1 | +0.0 | 54.8 | 95.0 | -40.2 | Anten |
| 11 | 36914.860M | 52.5 | +0.0 | +2.0 | +0.0 | 54.5 | 95.0 | -40.5 | Anten |
| 12 | 11757.370M | 46.2 | +5.9 | +0.8 | +0.0 | 52.9 | 95.0 | -42.1 | Anten |
| 13 | 1947.201M  | 45.7 | +5.8 | +1.1 | +0.0 | 52.6 | 95.0 | -42.4 | Anten |
| 14 | 953.589M   | 46.2 | +5.7 | +0.5 | +0.0 | 52.4 | 95.0 | -42.6 | Anten |
| 15 | 24420.030M | 44.2 | +6.2 | +1.2 | +0.0 | 51.6 | 95.0 | -43.4 | Anten |
| 16 | 31141.900M | 49.5 | +0.0 | +1.8 | +0.0 | 51.3 | 95.0 | -43.7 | Anten |
| 17 | 304.587M   | 44.8 | +5.7 | +0.4 | +0.0 | 50.9 | 95.0 | -44.1 | Anten |
| 18 | 59.289M    | 44.8 | +5.7 | +0.3 | +0.0 | 50.8 | 95.0 | -44.2 | Anten |
| 19 | 159.172M   | 44.5 | +5.7 | +0.4 | +0.0 | 50.6 | 95.0 | -44.4 | Anten |
| 20 | 48.801M    | 44.2 | +5.7 | +0.3 | +0.0 | 50.2 | 95.0 | -44.8 | Anten |
| 21 | 21978.030M | 43.0 | +6.0 | +1.1 | +0.0 | 50.1 | 95.0 | -44.9 | Anten |
| 22 | 14652.030M | 43.2 | +5.9 | +0.8 | +0.0 | 49.9 | 95.0 | -45.1 | Anten |
| 23 | 9768.033M  | 42.7 | +5.9 | +1.3 | +0.0 | 49.9 | 95.0 | -45.1 | Anten |
| 24 | 12210.030M | 42.7 | +5.9 | +0.8 | +0.0 | 49.4 | 95.0 | -45.6 | Anten |
| 25 | 7326.033M  | 41.2 | +5.8 | +1.3 | +0.0 | 48.3 | 95.0 | -46.7 | Anten |
| 26 | 17094.030M | 40.8 | +5.9 | +1.2 | +0.0 | 47.9 | 95.0 | -47.1 | Anten |
| 27 | 19536.030M | 40.2 | +6.0 | +1.1 | +0.0 | 47.3 | 95.0 | -47.7 | Anten |
| 28 | 27752.920M | 44.8 | +0.0 | +1.5 | +0.0 | 46.3 | 95.0 | -48.7 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 14:50:43  
 Equipment: **Askey Atheros Radio** Sequence#: 18  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11b default (CCK) Data Rate = 11Mbps PCDAC=50. Carrier Frequency: 2412 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20°C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

**Measurement Data:**

Reading listed by margin.

Test Lead: Antenna

| # | Freq MHz      | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|---------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 2412.000M     | 108.0     | +5.7  | +1.2  |    |    | +0.0       | 114.9     | 115.0     | -0.1      | Anten     |
|   |               |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 2397.467M Ave | 64.7      | +5.7  | +1.2  |    |    | +0.0       | 71.6      | 95.0      | -23.4     | Anten     |
| ^ | 2397.467M     | 77.0      | +5.7  | +1.2  |    |    | +0.0       | 83.9      | 95.0      | -11.1     | Anten     |
| 4 | 2400.000M Ave | 63.4      | +5.7  | +1.2  |    |    | +0.0       | 70.3      | 95.0      | -24.7     | Anten     |
| ^ | 2400.000M     | 73.0      | +5.7  | +1.2  |    |    | +0.0       | 79.9      | 95.0      | -15.1     | Anten     |
| 6 | 4824.083M     | 60.5      | +5.8  | +1.1  |    |    | +0.0       | 67.4      | 95.0      | -27.6     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 2386.583M  | 58.8 | +5.7 | +1.2 | +0.0 | 65.7 | 95.0 | -29.3 | Anten |
| 8  | 24671.840M | 51.5 | +6.1 | +1.2 | +0.0 | 58.8 | 95.0 | -36.2 | Anten |
| 9  | 456.697M   | 51.2 | +5.7 | +0.5 | +0.0 | 57.4 | 95.0 | -37.6 | Anten |
| 10 | 2688.643M  | 49.7 | +5.8 | +1.2 | +0.0 | 56.7 | 95.0 | -38.3 | Anten |
| 11 | 23975.110M | 49.0 | +5.8 | +1.4 | +0.0 | 56.2 | 95.0 | -38.8 | Anten |
| 12 | 25684.290M | 49.3 | +5.8 | +0.9 | +0.0 | 56.0 | 95.0 | -39.0 | Anten |
| 13 | 4822.430M  | 48.8 | +5.8 | +1.1 | +0.0 | 55.7 | 95.0 | -39.3 | Anten |
| 14 | 17426.940M | 47.3 | +6.0 | +1.2 | +0.0 | 54.5 | 95.0 | -40.5 | Anten |
| 15 | 37031.720M | 52.5 | +0.0 | +2.0 | +0.0 | 54.5 | 95.0 | -40.5 | Anten |
| 16 | 26000.000M | 47.3 | +5.9 | +1.1 | +0.0 | 54.3 | 95.0 | -40.7 | Anten |
| 17 | 2045.270M  | 45.7 | +5.8 | +1.1 | +0.0 | 52.6 | 95.0 | -42.4 | Anten |
| 18 | 7219.090M  | 44.8 | +5.8 | +1.4 | +0.0 | 52.0 | 95.0 | -43.0 | Anten |
| 19 | 174.564M   | 45.8 | +5.7 | +0.4 | +0.0 | 51.9 | 95.0 | -43.1 | Anten |
| 20 | 1080.433M  | 45.5 | +5.7 | +0.5 | +0.0 | 51.7 | 95.0 | -43.3 | Anten |
| 21 | 4215.779M  | 44.8 | +5.8 | +1.0 | +0.0 | 51.6 | 95.0 | -43.4 | Anten |
| 22 | 24120.000M | 44.0 | +5.8 | +1.4 | +0.0 | 51.2 | 95.0 | -43.8 | Anten |
| 23 | 31025.040M | 49.2 | +0.0 | +1.9 | +0.0 | 51.1 | 95.0 | -43.9 | Anten |
| 24 | 86.525M    | 44.8 | +5.7 | +0.4 | +0.0 | 50.9 | 95.0 | -44.1 | Anten |
| 25 | 36.173M    | 44.7 | +5.7 | +0.3 | +0.0 | 50.7 | 95.0 | -44.3 | Anten |
| 26 | 19296.000M | 42.8 | +6.0 | +1.1 | +0.0 | 49.9 | 95.0 | -45.1 | Anten |
| 27 | 9648.000M  | 42.2 | +5.8 | +1.4 | +0.0 | 49.4 | 95.0 | -45.6 | Anten |
| 28 | 16884.000M | 42.2 | +5.9 | +1.2 | +0.0 | 49.3 | 95.0 | -45.7 | Anten |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 29 | 21708.000M | 42.0 | +6.0 | +1.2 | +0.0 | 49.2 | 95.0 | -45.8 | Anten |
| 30 | 14472.000M | 42.5 | +5.9 | +0.8 | +0.0 | 49.2 | 95.0 | -45.8 | Anten |
| 31 | 7236.083M  | 42.0 | +5.8 | +1.4 | +0.0 | 49.2 | 95.0 | -45.8 | Anten |
| 32 | 12060.000M | 41.7 | +5.9 | +1.0 | +0.0 | 48.6 | 95.0 | -46.4 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 11:31:35  
 Equipment: **Askey Atheros Radio** Sequence#: 12  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band Modulation = 802.11g default (OFDM) Data Rate = 54Mbps PCDAC=48. Carrier Frequency: 2462 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20°C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

**Measurement Data:**

Reading listed by margin.

Test Lead: Antenna

| # | Freq MHz   | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 2462.000M  | 101.5     | +5.8  | +1.2  |    |    | +0.0       | 108.5     | 110.0     | -1.5      | Anten     |
|   |            |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 2483.583M  | 55.3      | +5.8  | +1.2  |    |    | +0.0       | 62.3      | 90.0      | -27.7     | Anten     |
| 3 | 24718.790M | 50.8      | +6.1  | +1.2  |    |    | +0.0       | 58.1      | 90.0      | -31.9     | Anten     |
| 4 | 2690.261M  | 50.5      | +5.8  | +1.2  |    |    | +0.0       | 57.5      | 90.0      | -32.5     | Anten     |
| 5 | 23943.320M | 49.2      | +5.8  | +1.4  |    |    | +0.0       | 56.4      | 90.0      | -33.6     | Anten     |
| 6 | 37569.280M | 53.3      | +0.0  | +1.7  |    |    | +0.0       | 55.0      | 90.0      | -35.0     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 26000.000M | 47.7 | +5.9 | +1.1 | +0.0 | 54.7 | 90.0 | -35.3 | Anten |
| 8  | 24620.000M | 47.2 | +6.1 | +1.2 | +0.0 | 54.5 | 90.0 | -35.5 | Anten |
| 9  | 4930.013M  | 47.5 | +5.8 | +1.1 | +0.0 | 54.4 | 90.0 | -35.6 | Anten |
| 10 | 21663.200M | 46.8 | +5.9 | +1.2 | +0.0 | 53.9 | 90.0 | -36.1 | Anten |
| 11 | 17513.160M | 46.5 | +6.0 | +1.2 | +0.0 | 53.7 | 90.0 | -36.3 | Anten |
| 12 | 10931.320M | 45.7 | +5.9 | +1.2 | +0.0 | 52.8 | 90.0 | -37.2 | Anten |
| 13 | 1655.771M  | 45.5 | +5.7 | +1.2 | +0.0 | 52.4 | 90.0 | -37.6 | Anten |
| 14 | 1541.603M  | 45.3 | +5.7 | +1.2 | +0.0 | 52.2 | 90.0 | -37.8 | Anten |
| 15 | 4924.000M  | 45.2 | +5.8 | +1.1 | +0.0 | 52.1 | 90.0 | -37.9 | Anten |
| 16 | 1083.074M  | 45.5 | +5.7 | +0.5 | +0.0 | 51.7 | 90.0 | -38.3 | Anten |
| 17 | 327.955M   | 45.3 | +5.7 | +0.4 | +0.0 | 51.4 | 90.0 | -38.6 | Anten |
| 18 | 427.093M   | 45.2 | +5.7 | +0.5 | +0.0 | 51.4 | 90.0 | -38.6 | Anten |
| 19 | 6569.664M  | 44.3 | +5.8 | +1.3 | +0.0 | 51.4 | 90.0 | -38.6 | Anten |
| 20 | 19696.000M | 43.5 | +6.1 | +1.1 | +0.0 | 50.7 | 90.0 | -39.3 | Anten |
| 21 | 48.595M    | 44.7 | +5.7 | +0.3 | +0.0 | 50.7 | 90.0 | -39.3 | Anten |
| 22 | 89.037M    | 44.5 | +5.7 | +0.4 | +0.0 | 50.6 | 90.0 | -39.4 | Anten |
| 23 | 116.589M   | 44.5 | +5.7 | +0.4 | +0.0 | 50.6 | 90.0 | -39.4 | Anten |
| 24 | 31025.040M | 48.7 | +0.0 | +1.9 | +0.0 | 50.6 | 90.0 | -39.4 | Anten |
| 25 | 14772.000M | 43.2 | +5.9 | +0.8 | +0.0 | 49.9 | 90.0 | -40.1 | Anten |
| 26 | 22158.000M | 42.5 | +6.0 | +1.1 | +0.0 | 49.6 | 90.0 | -40.4 | Anten |
| 27 | 9848.001M  | 42.3 | +5.9 | +1.3 | +0.0 | 49.5 | 90.0 | -40.5 | Anten |
| 28 | 12310.000M | 42.2 | +5.9 | +0.8 | +0.0 | 48.9 | 90.0 | -41.1 | Anten |
| 29 | 17234.000M | 41.5 | +6.0 | +1.2 | +0.0 | 48.7 | 90.0 | -41.3 | Anten |
| 30 | 7386.000M  | 41.3 | +5.8 | +1.3 | +0.0 | 48.4 | 90.0 | -41.6 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 11:44:41  
 Equipment: **Askey Atheros Radio** Sequence#: 13  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11g default (OFDM) Data Rate = 54Mbps PCDAC=47. Carrier Frequency: 2442 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20 °C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

**Measurement Data:** Reading listed by margin. Test Lead: Antenna

| # | Freq MHz   | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 2442.000M  | 101.7     | +5.8  | +1.2  |    |    | +0.0       | 108.7     | 110.0     | -1.3      | Anten     |
|   |            |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 24752.500M | 50.7      | +6.1  | +1.3  |    |    | +0.0       | 58.1      | 90.0      | -31.9     | Anten     |
| 3 | 4885.250M  | 51.0      | +5.8  | +1.1  |    |    | +0.0       | 57.9      | 90.0      | -32.1     | Anten     |
| 4 | 2690.261M  | 49.8      | +5.8  | +1.2  |    |    | +0.0       | 56.8      | 90.0      | -33.2     | Anten     |
| 5 | 25993.260M | 49.3      | +5.9  | +1.1  |    |    | +0.0       | 56.3      | 90.0      | -33.7     | Anten     |
| 6 | 23929.830M | 48.7      | +5.9  | +1.4  |    |    | +0.0       | 56.0      | 90.0      | -34.0     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 26000.000M | 48.0 | +5.9 | +1.1 | +0.0 | 55.0 | 90.0 | -35.0 | Anten |
| 8  | 36938.230M | 52.5 | +0.0 | +2.0 | +0.0 | 54.5 | 90.0 | -35.5 | Anten |
| 9  | 21795.470M | 46.7 | +6.0 | +1.1 | +0.0 | 53.8 | 90.0 | -36.2 | Anten |
| 10 | 17413.960M | 46.5 | +6.0 | +1.2 | +0.0 | 53.7 | 90.0 | -36.3 | Anten |
| 11 | 15744.020M | 46.7 | +5.9 | +0.9 | +0.0 | 53.5 | 90.0 | -36.5 | Anten |
| 12 | 19993.260M | 46.3 | +6.0 | +1.1 | +0.0 | 53.4 | 90.0 | -36.6 | Anten |
| 13 | 4885.160M  | 46.2 | +5.8 | +1.1 | +0.0 | 53.1 | 90.0 | -36.9 | Anten |
| 14 | 24420.330M | 45.2 | +6.2 | +1.2 | +0.0 | 52.6 | 90.0 | -37.4 | Anten |
| 15 | 21978.330M | 45.5 | +6.0 | +1.1 | +0.0 | 52.6 | 90.0 | -37.4 | Anten |
| 16 | 10132.500M | 45.5 | +5.9 | +1.2 | +0.0 | 52.6 | 90.0 | -37.4 | Anten |
| 17 | 1741.398M  | 45.3 | +5.7 | +1.1 | +0.0 | 52.1 | 90.0 | -37.9 | Anten |
| 18 | 6445.070M  | 44.7 | +5.8 | +1.3 | +0.0 | 51.8 | 90.0 | -38.2 | Anten |
| 19 | 871.939M   | 45.5 | +5.7 | +0.5 | +0.0 | 51.7 | 90.0 | -38.3 | Anten |
| 20 | 271.524M   | 45.2 | +5.7 | +0.4 | +0.0 | 51.3 | 90.0 | -38.7 | Anten |
| 21 | 31118.530M | 49.3 | +0.0 | +1.8 | +0.0 | 51.1 | 90.0 | -38.9 | Anten |
| 22 | 447.469M   | 44.8 | +5.7 | +0.5 | +0.0 | 51.0 | 90.0 | -39.0 | Anten |
| 23 | 105.397M   | 44.7 | +5.7 | +0.4 | +0.0 | 50.8 | 90.0 | -39.2 | Anten |
| 24 | 14653.250M | 43.0 | +5.9 | +0.8 | +0.0 | 49.7 | 90.0 | -40.3 | Anten |
| 25 | 19537.250M | 42.3 | +6.0 | +1.1 | +0.0 | 49.4 | 90.0 | -40.6 | Anten |
| 26 | 7327.250M  | 41.8 | +5.8 | +1.3 | +0.0 | 48.9 | 90.0 | -41.1 | Anten |
| 27 | 17095.250M | 41.3 | +5.9 | +1.2 | +0.0 | 48.4 | 90.0 | -41.6 | Anten |
| 28 | 12211.250M | 40.8 | +5.9 | +0.8 | +0.0 | 47.5 | 90.0 | -42.5 | Anten |
| 29 | 9769.250M  | 40.0 | +5.9 | +1.3 | +0.0 | 47.2 | 90.0 | -42.8 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 11:59:58  
 Equipment: **Askey Atheros Radio** Sequence#: 14  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11g default (OFDM) Data Rate = 54Mbps PCDAC=47. Carrier Frequency: 2412 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20°C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

**Measurement Data:**

Reading listed by margin.

Test Lead: Antenna

| # | Freq MHz   | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 2412.000M  | 102.2     | +5.7  | +1.2  |    |    | +0.0       | 109.1     | 110.0     | -0.9      | Anten     |
|   |            |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 4822.833M  | 51.5      | +5.8  | +1.1  |    |    | +0.0       | 58.4      | 90.0      | -31.6     | Anten     |
| 3 | 24671.590M | 50.5      | +6.1  | +1.2  |    |    | +0.0       | 57.8      | 90.0      | -32.2     | Anten     |
| 4 | 2687.524M  | 49.2      | +5.8  | +1.2  |    |    | +0.0       | 56.2      | 90.0      | -33.8     | Anten     |
| 5 | 24030.980M | 49.0      | +5.8  | +1.4  |    |    | +0.0       | 56.2      | 90.0      | -33.8     | Anten     |
| 6 | 25737.010M | 49.3      | +5.8  | +0.9  |    |    | +0.0       | 56.0      | 90.0      | -34.0     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 37686.140M | 53.5 | +0.0 | +1.7 | +0.0 | 55.2 | 90.0 | -34.8 | Anten |
| 8  | 26000.000M | 47.8 | +5.9 | +1.1 | +0.0 | 54.8 | 90.0 | -35.2 | Anten |
| 9  | 21944.280M | 47.2 | +6.0 | +1.1 | +0.0 | 54.3 | 90.0 | -35.7 | Anten |
| 10 | 9506.149M  | 45.5 | +5.8 | +1.4 | +0.0 | 52.7 | 90.0 | -37.3 | Anten |
| 11 | 1986.259M  | 45.7 | +5.8 | +1.1 | +0.0 | 52.6 | 90.0 | -37.4 | Anten |
| 12 | 667.401M   | 46.2 | +5.7 | +0.5 | +0.0 | 52.4 | 90.0 | -37.6 | Anten |
| 13 | 24120.170M | 45.0 | +5.8 | +1.4 | +0.0 | 52.2 | 90.0 | -37.8 | Anten |
| 14 | 4830.338M  | 45.3 | +5.8 | +1.1 | +0.0 | 52.2 | 90.0 | -37.8 | Anten |
| 15 | 3141.729M  | 44.8 | +5.8 | +1.2 | +0.0 | 51.8 | 90.0 | -38.2 | Anten |
| 16 | 6450.054M  | 44.7 | +5.8 | +1.3 | +0.0 | 51.8 | 90.0 | -38.2 | Anten |
| 17 | 138.972M   | 45.3 | +5.7 | +0.4 | +0.0 | 51.4 | 90.0 | -38.6 | Anten |
| 18 | 53.985M    | 45.3 | +5.7 | +0.3 | +0.0 | 51.3 | 90.0 | -38.7 | Anten |
| 19 | 448.827M   | 45.0 | +5.7 | +0.5 | +0.0 | 51.2 | 90.0 | -38.8 | Anten |
| 20 | 31025.040M | 49.2 | +0.0 | +1.9 | +0.0 | 51.1 | 90.0 | -38.9 | Anten |
| 21 | 69.255M    | 45.0 | +5.7 | +0.3 | +0.0 | 51.0 | 90.0 | -39.0 | Anten |
| 22 | 205.148M   | 44.7 | +5.7 | +0.4 | +0.0 | 50.8 | 90.0 | -39.2 | Anten |
| 23 | 21708.170M | 43.5 | +6.0 | +1.2 | +0.0 | 50.7 | 90.0 | -39.3 | Anten |
| 24 | 7235.750M  | 43.2 | +5.8 | +1.4 | +0.0 | 50.4 | 90.0 | -39.6 | Anten |
| 25 | 19296.170M | 42.8 | +6.0 | +1.1 | +0.0 | 49.9 | 90.0 | -40.1 | Anten |
| 26 | 12059.750M | 42.7 | +5.9 | +1.0 | +0.0 | 49.6 | 90.0 | -40.4 | Anten |
| 27 | 14472.170M | 42.8 | +5.9 | +0.8 | +0.0 | 49.5 | 90.0 | -40.5 | Anten |
| 28 | 9647.750M  | 41.5 | +5.8 | +1.4 | +0.0 | 48.7 | 90.0 | -41.3 | Anten |
| 29 | 16884.170M | 41.3 | +5.9 | +1.2 | +0.0 | 48.4 | 90.0 | -41.6 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/08/2004  
 Test Type: **Antenna Port** Time: 15:14:49  
 Equipment: **Askey Atheros Radio** Sequence#: 3  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.8GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps PCDAC=50. Carrier Frequency: 5785 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20°C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

**Measurement Data:**

Reading listed by margin.

Test Lead: Antenna

| # | Freq MHz   | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 5824.000M  | 106.8     | +5.8  | +1.3  |    |    | +0.0       | 113.9     | 115.0     | -1.1      | Anten     |
|   |            |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 24820.090M | 49.7      | +6.2  | +1.3  |    |    | +0.0       | 57.2      | 95.0      | -37.8     | Anten     |
| 3 | 23873.420M | 48.7      | +5.9  | +1.4  |    |    | +0.0       | 56.0      | 95.0      | -39.0     | Anten     |
| 4 | 37382.300M | 53.0      | +0.0  | +1.8  |    |    | +0.0       | 54.8      | 95.0      | -40.2     | Anten     |
| 5 | 26000.000M | 47.2      | +5.9  | +1.1  |    |    | +0.0       | 54.2      | 95.0      | -40.8     | Anten     |
| 6 | 17431.510M | 46.2      | +6.0  | +1.2  |    |    | +0.0       | 53.4      | 95.0      | -41.6     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 2692.750M  | 46.0 | +5.8 | +1.2 | +0.0 | 53.0 | 95.0 | -42.0 | Anten |
| 8  | 13883.020M | 46.3 | +5.9 | +0.8 | +0.0 | 53.0 | 95.0 | -42.0 | Anten |
| 9  | 3859.298M  | 46.0 | +5.8 | +1.1 | +0.0 | 52.9 | 95.0 | -42.1 | Anten |
| 10 | 7487.484M  | 45.2 | +5.8 | +1.2 | +0.0 | 52.2 | 95.0 | -42.8 | Anten |
| 11 | 1977.870M  | 45.2 | +5.8 | +1.1 | +0.0 | 52.1 | 95.0 | -42.9 | Anten |
| 12 | 23140.500M | 44.0 | +6.3 | +1.4 | +0.0 | 51.7 | 95.0 | -43.3 | Anten |
| 13 | 2978.066M  | 44.3 | +5.8 | +1.2 | +0.0 | 51.3 | 95.0 | -43.7 | Anten |
| 14 | 3212.821M  | 44.2 | +5.8 | +1.2 | +0.0 | 51.2 | 95.0 | -43.8 | Anten |
| 15 | 150.980M   | 45.0 | +5.7 | +0.4 | +0.0 | 51.1 | 95.0 | -43.9 | Anten |
| 16 | 881.611M   | 44.8 | +5.7 | +0.5 | +0.0 | 51.0 | 95.0 | -44.0 | Anten |
| 17 | 81.433M    | 44.8 | +5.7 | +0.4 | +0.0 | 50.9 | 95.0 | -44.1 | Anten |
| 18 | 31025.040M | 48.7 | +0.0 | +1.9 | +0.0 | 50.6 | 95.0 | -44.4 | Anten |
| 19 | 489.593M   | 44.3 | +5.7 | +0.5 | +0.0 | 50.5 | 95.0 | -44.5 | Anten |
| 20 | 17355.500M | 43.2 | +6.0 | +1.2 | +0.0 | 50.4 | 95.0 | -44.6 | Anten |
| 21 | 33.007M    | 44.2 | +5.7 | +0.3 | +0.0 | 50.2 | 95.0 | -44.8 | Anten |
| 22 | 11570.500M | 43.0 | +5.9 | +0.9 | +0.0 | 49.8 | 95.0 | -45.2 | Anten |
| 23 | 34710.000M | 44.8 | +0.0 | +1.6 | +0.0 | 46.4 | 95.0 | -48.6 | Anten |
| 24 | 28925.000M | 40.8 | +0.0 | +1.8 | +0.0 | 42.6 | 95.0 | -52.4 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 10:08:41  
 Equipment: **Askey Atheros Radio** Sequence#: 4  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.8GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps PCDAC=50. Carrier Frequency: 5825 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20°C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

**Measurement Data:**

Reading listed by margin.

Test Lead: Antenna

| # | Freq MHz      | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|---------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 5825.000M     | 107.7     | +5.8  | +1.3  |    |    | +0.0       | 114.8     | 115.0     | -0.2      | Anten     |
|   |               |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 5850.000M Ave | 75.8      | +5.8  | +1.3  |    |    | +0.0       | 82.9      | 95.0      | -12.1     | Anten     |
| ^ | 5850.000M     | 86.5      | +5.8  | +1.3  |    |    | +0.0       | 93.6      | 95.0      | -1.4      | Anten     |
| 4 | 24696.610M    | 50.8      | +6.1  | +1.2  |    |    | +0.0       | 58.1      | 95.0      | -36.9     | Anten     |
| 5 | 24010.620M    | 49.3      | +5.8  | +1.4  |    |    | +0.0       | 56.5      | 95.0      | -38.5     | Anten     |
| 6 | 3888.190M     | 48.0      | +5.8  | +1.1  |    |    | +0.0       | 54.9      | 95.0      | -40.1     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 26000.000M | 47.7 | +5.9 | +1.1 | +0.0 | 54.7 | 95.0 | -40.3 | Anten |
| 8  | 36844.740M | 52.7 | +0.0 | +2.0 | +0.0 | 54.7 | 95.0 | -40.3 | Anten |
| 9  | 17492.430M | 46.2 | +6.0 | +1.2 | +0.0 | 53.4 | 95.0 | -41.6 | Anten |
| 10 | 6731.010M  | 45.5 | +5.8 | +1.2 | +0.0 | 52.5 | 95.0 | -42.5 | Anten |
| 11 | 2014.803M  | 45.5 | +5.8 | +1.1 | +0.0 | 52.4 | 95.0 | -42.6 | Anten |
| 12 | 120.980M   | 46.0 | +5.7 | +0.4 | +0.0 | 52.1 | 95.0 | -42.9 | Anten |
| 13 | 31048.410M | 50.2 | +0.0 | +1.9 | +0.0 | 52.1 | 95.0 | -42.9 | Anten |
| 14 | 17474.670M | 44.8 | +6.0 | +1.2 | +0.0 | 52.0 | 95.0 | -43.0 | Anten |
| 15 | 526.600M   | 45.0 | +5.7 | +0.5 | +0.0 | 51.2 | 95.0 | -43.8 | Anten |
| 16 | 857.466M   | 45.0 | +5.7 | +0.5 | +0.0 | 51.2 | 95.0 | -43.8 | Anten |
| 17 | 23299.670M | 43.5 | +6.1 | +1.4 | +0.0 | 51.0 | 95.0 | -44.0 | Anten |
| 18 | 57.964M    | 45.0 | +5.7 | +0.3 | +0.0 | 51.0 | 95.0 | -44.0 | Anten |
| 19 | 132.290M   | 44.8 | +5.7 | +0.4 | +0.0 | 50.9 | 95.0 | -44.1 | Anten |
| 20 | 11649.670M | 43.0 | +5.9 | +0.8 | +0.0 | 49.7 | 95.0 | -45.3 | Anten |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 10:06:44  
 Equipment: **Askey Atheros Radio** Sequence#: 5  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA 8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.8GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps PCDAC=50. Carrier Frequency: 5745 MHz. Frequency Range Investigated: 30MHz to 40GHz. RBW = 100kHz, VBW = 100kHz. Temperature: 20°C, Relative Humidity: 50%.

**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

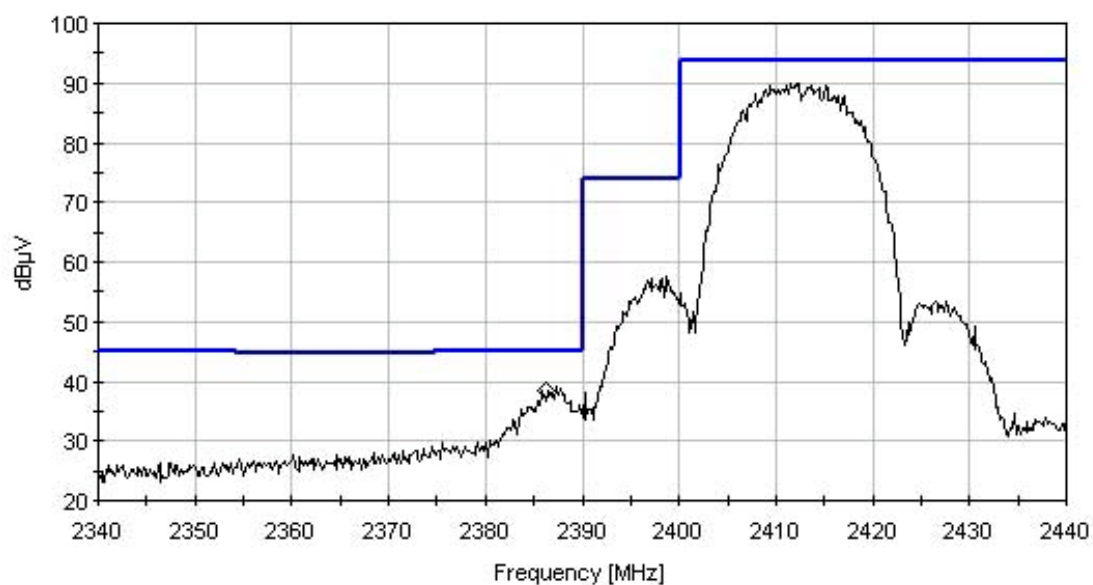
**Measurement Data:** Reading listed by margin. Test Lead: Antenna

| # | Freq MHz      | Rdng dBμV | T1 dB | T2 dB | dB | dB | Dist Table | Corr dBμV | Spec dBμV | Margin dB | Polar Ant |
|---|---------------|-----------|-------|-------|----|----|------------|-----------|-----------|-----------|-----------|
| 1 | 5745.000M     | 107.7     | +5.8  | +1.3  |    |    | +0.0       | 114.8     | 115.0     | -0.2      | Anten     |
|   |               |           |       |       |    |    |            |           | Carrier   |           |           |
| 2 | 5725.000M Ave | 71.2      | +5.8  | +1.3  |    |    | +0.0       | 78.3      | 95.0      | -16.7     | Anten     |
| ^ | 5725.000M     | 86.2      | +5.8  | +1.3  |    |    | +0.0       | 93.3      | 95.0      | -1.7      | Anten     |
| 4 | 24641.730M    | 50.8      | +6.1  | +1.2  |    |    | +0.0       | 58.1      | 95.0      | -36.9     | Anten     |
| 5 | 26000.000M    | 48.3      | +5.9  | +1.1  |    |    | +0.0       | 55.3      | 95.0      | -39.7     | Anten     |
| 6 | 37522.540M    | 53.5      | +0.0  | +1.7  |    |    | +0.0       | 55.2      | 95.0      | -39.8     | Anten     |

|    |            |      |      |      |      |      |      |       |       |
|----|------------|------|------|------|------|------|------|-------|-------|
| 7  | 11491.250M | 47.3 | +5.9 | +0.9 | +0.0 | 54.1 | 95.0 | -40.9 | Anten |
| 8  | 17431.510M | 46.5 | +6.0 | +1.2 | +0.0 | 53.7 | 95.0 | -41.3 | Anten |
| 9  | 16670.030M | 46.3 | +6.0 | +1.2 | +0.0 | 53.5 | 95.0 | -41.5 | Anten |
| 10 | 2710.808M  | 46.2 | +5.8 | +1.2 | +0.0 | 53.2 | 95.0 | -41.8 | Anten |
| 11 | 1503.005M  | 45.5 | +5.7 | +1.0 | +0.0 | 52.2 | 95.0 | -42.8 | Anten |
| 12 | 954.046M   | 45.2 | +5.7 | +0.5 | +0.0 | 51.4 | 95.0 | -43.6 | Anten |
| 13 | 153.872M   | 45.2 | +5.7 | +0.4 | +0.0 | 51.3 | 95.0 | -43.7 | Anten |
| 14 | 500.101M   | 45.0 | +5.7 | +0.5 | +0.0 | 51.2 | 95.0 | -43.8 | Anten |
| 15 | 1000.000M  | 44.8 | +5.7 | +0.5 | +0.0 | 51.0 | 95.0 | -44.0 | Anten |
| 16 | 100.394M   | 44.7 | +5.7 | +0.4 | +0.0 | 50.8 | 95.0 | -44.2 | Anten |
| 17 | 31025.040M | 48.7 | +0.0 | +1.9 | +0.0 | 50.6 | 95.0 | -44.4 | Anten |
| 18 | 22980.000M | 43.2 | +6.1 | +1.3 | +0.0 | 50.6 | 95.0 | -44.4 | Anten |
| 19 | 30.211M    | 44.5 | +5.7 | +0.3 | +0.0 | 50.5 | 95.0 | -44.5 | Anten |
| 20 | 11490.000M | 42.7 | +5.9 | +0.9 | +0.0 | 49.5 | 95.0 | -45.5 | Anten |
| 21 | 17235.000M | 40.8 | +6.0 | +1.2 | +0.0 | 48.0 | 95.0 | -47.0 | Anten |
| 22 | 34470.000M | 43.5 | +0.0 | +1.5 | +0.0 | 45.0 | 95.0 | -50.0 | Anten |
| 23 | 28725.000M | 40.2 | +0.0 | +1.7 | +0.0 | 41.9 | 95.0 | -53.1 | Anten |

## FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 1 MODE B LOW AVERAGE

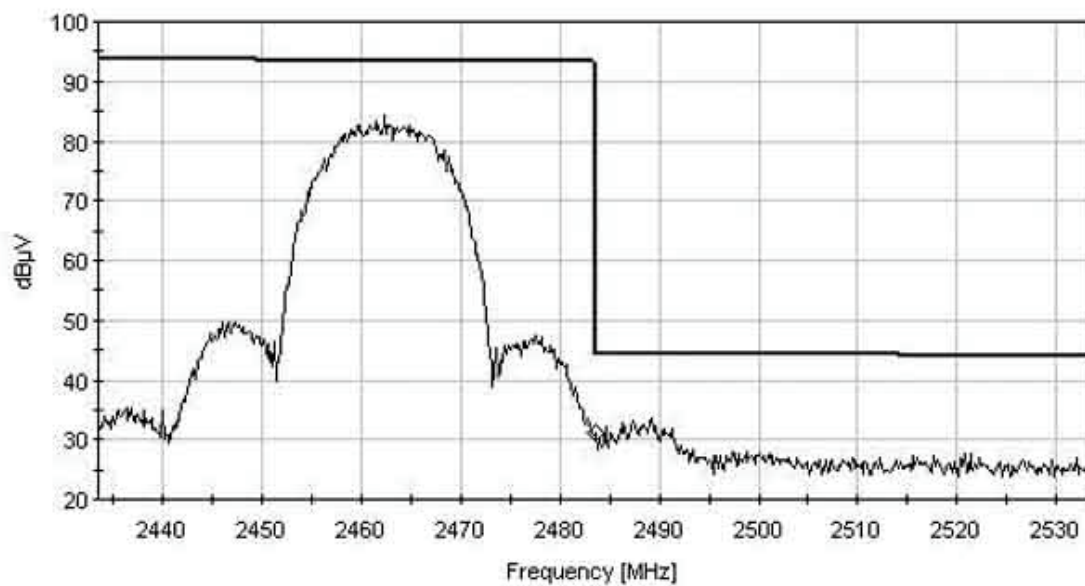
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions-  
 Configuration 1 (9dBi) (Average Measurement)  
 Ref Level 107 dBuV ATTN 10 dB RES BW:100.0kHz VID BW:100.0kHz SWP:55.0msec  
 Marker: 2.386GHz 38.5dBuV



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 1 MODE B  
HIGH AVERAGE**

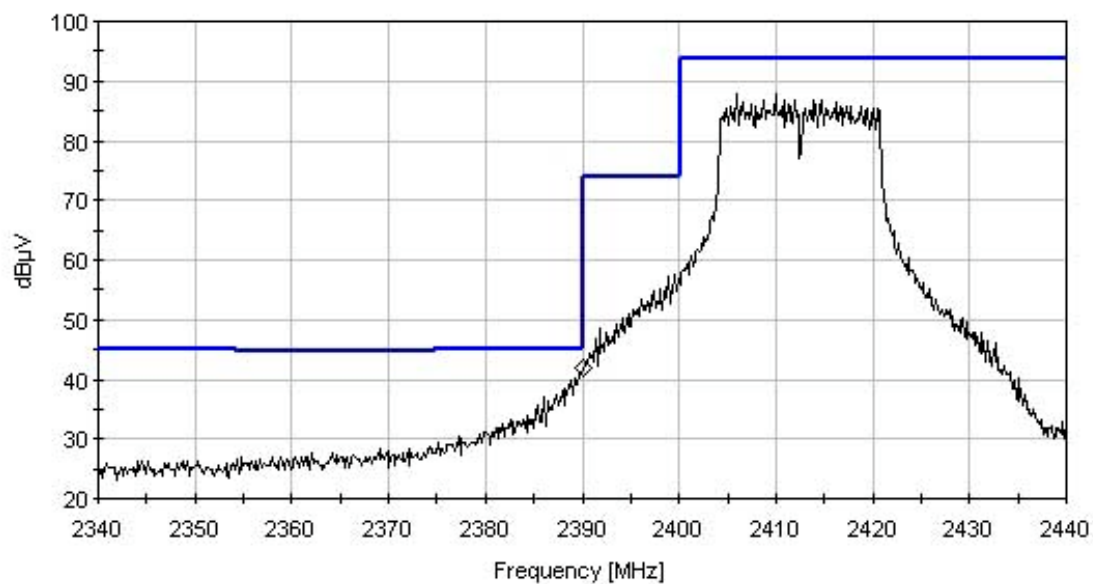
Digital Path Networks: Relay 15.247(c) Radiated Spurious Emissions-Configuration 1(9dBi) (Average Measurement)  
Ref Level 107 dBμV ATTN 10 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 55.0msec  
Marker: 2.484GHz 31dBμV



— FCC 15.247 (c) / 15.209 / 15.205

## FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 1 MODE G LOW AVERAGE

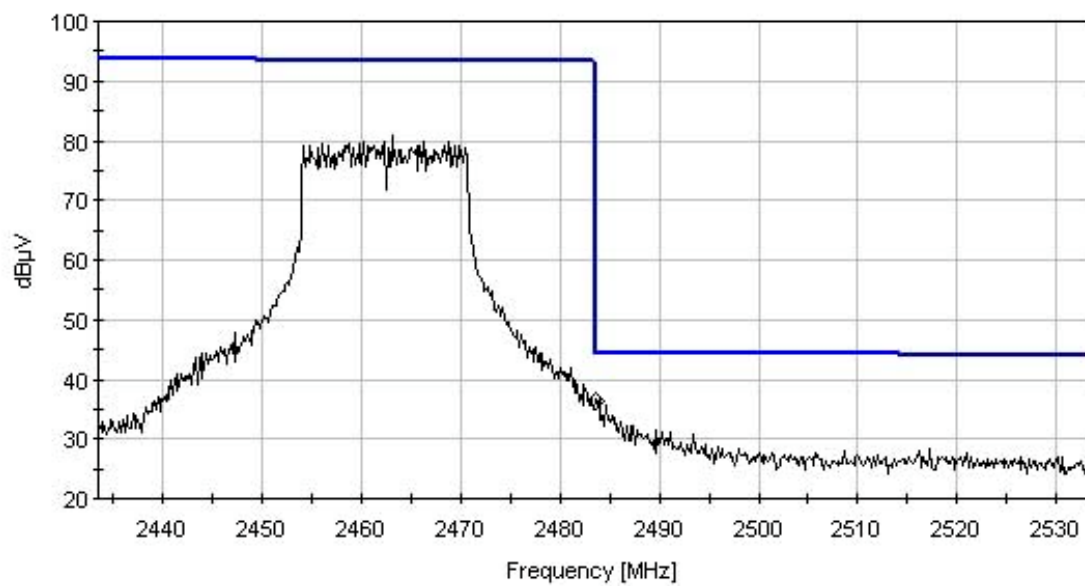
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions-Configuration 1 (9dBi)  
(Average Measurement)  
Ref Level 107 dBuV ATTN 10dB RES BW: 100.0kHz VID BW: 100.0kHz SWP: 55.0msec  
Marker: 2.39GHz 42dBuV



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 1 MODE G  
HIGH AVERAGE**

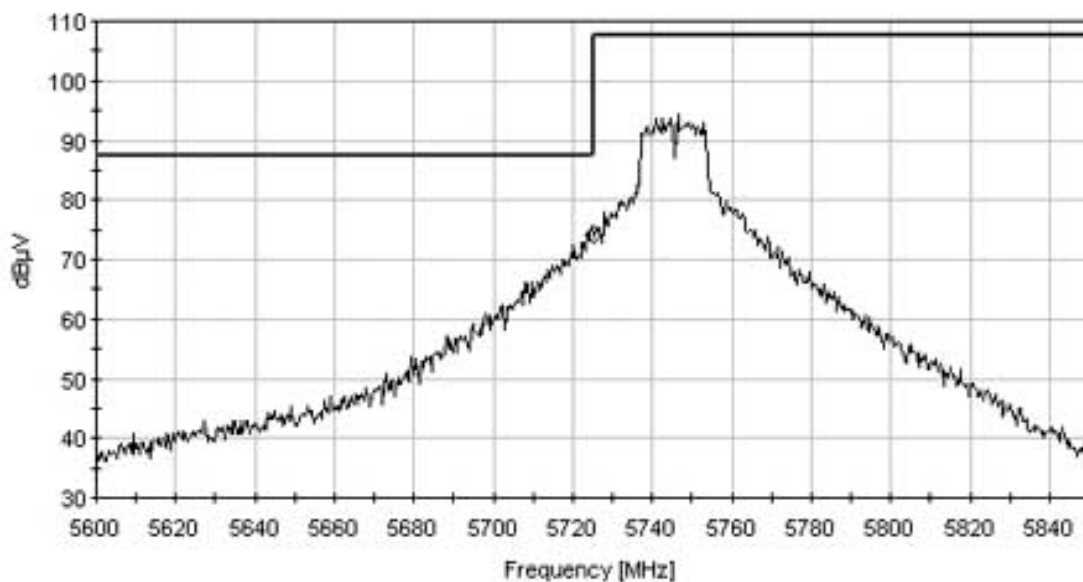
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions-  
Configuration 1 (9dBi) (Average Measurement)  
Ref Level 107 dBuV ATTN 10 dB RES BW:100.0kHz VID BW:100.0kHz SWP:55.0msec  
Marker: 2.484GHz 36.5dBuV



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 1 LOW AVERAGE**

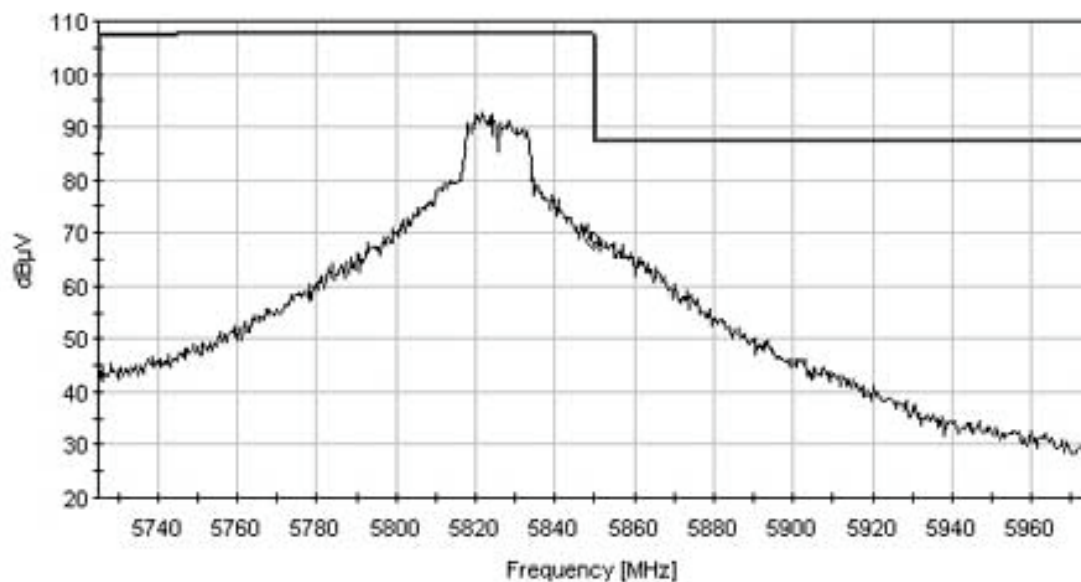
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Configuration 1 (18dB) (Average Measurement)  
Ref Level 107 dB $\mu$ V ATTN 20 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 140.0msec  
Marker: 5.725GHz 74.17dB $\mu$ V



— FCC 15.247 (c) / 15.209 / 15.205

## FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 1 HIGH AVERAGE

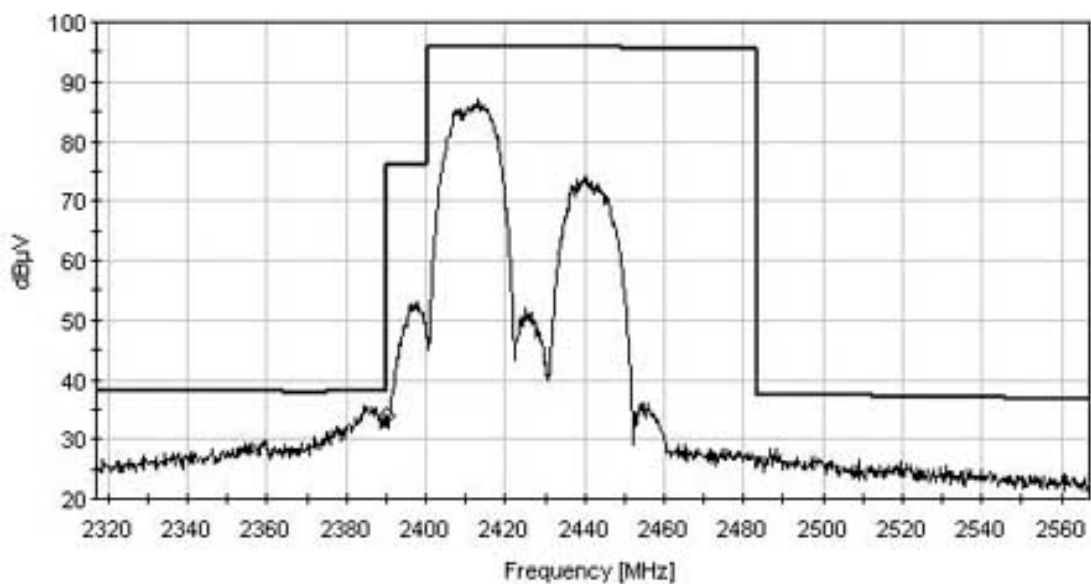
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Configuration 1 (18dB) (Average Measurement)  
 Ref Level 107 dB $\mu$ V ATTN 20 dB  
 RES BW: 100.0kHz VID BW: 100.0kHz SWP: 140.0msec  
 Marker: 5.85GHz 68.33dB $\mu$ V



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE B  
TEST 1 AVERAGE**

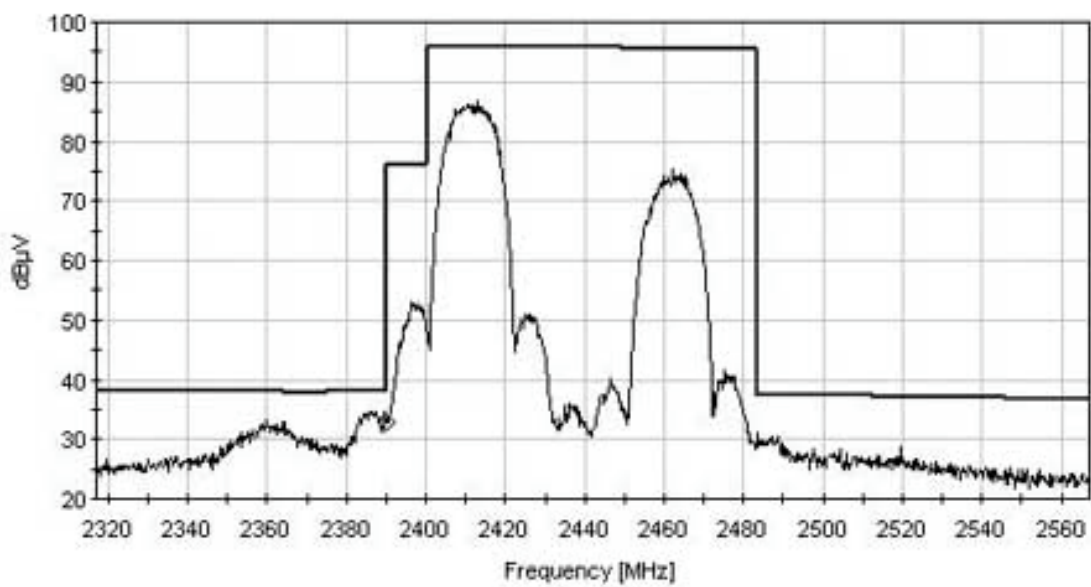
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #1 (Average Measurement)  
Ref Level 97 dBµV ATTN 10 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.39GHz 33.8dBµV  
Mode: 802.11b



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE B  
TEST 2 AVERAGE**

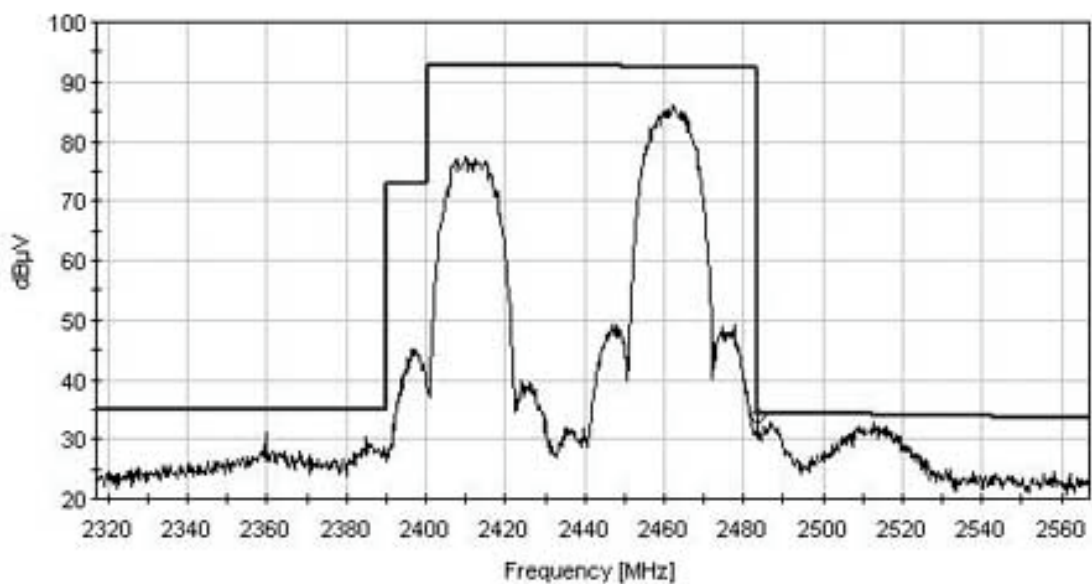
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #2 (Average Measurement)  
Ref Level 97 dBµV ATTN 10 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.39GHz 32.7dBµV  
Mode: 802.11b



— FCC 15.247 (c) / 15.209 / 15.205

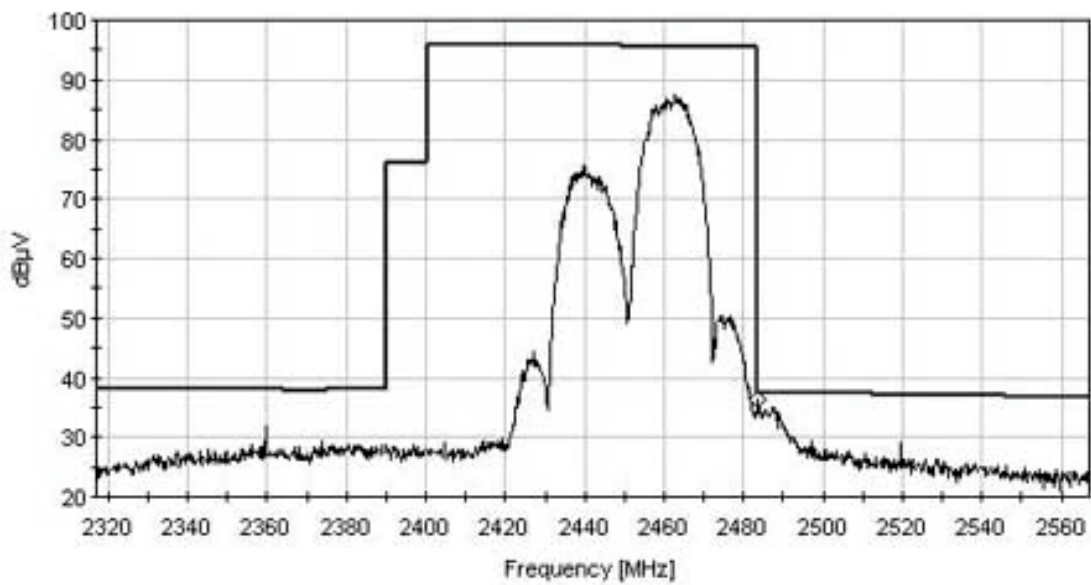
**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE B**  
**TEST 3 AVERAGE**

Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #3 (Average Measurement)  
Ref Level 97 dBµV ATTN 10 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.484GHz 33.9dBµV  
Mode: 802.11b



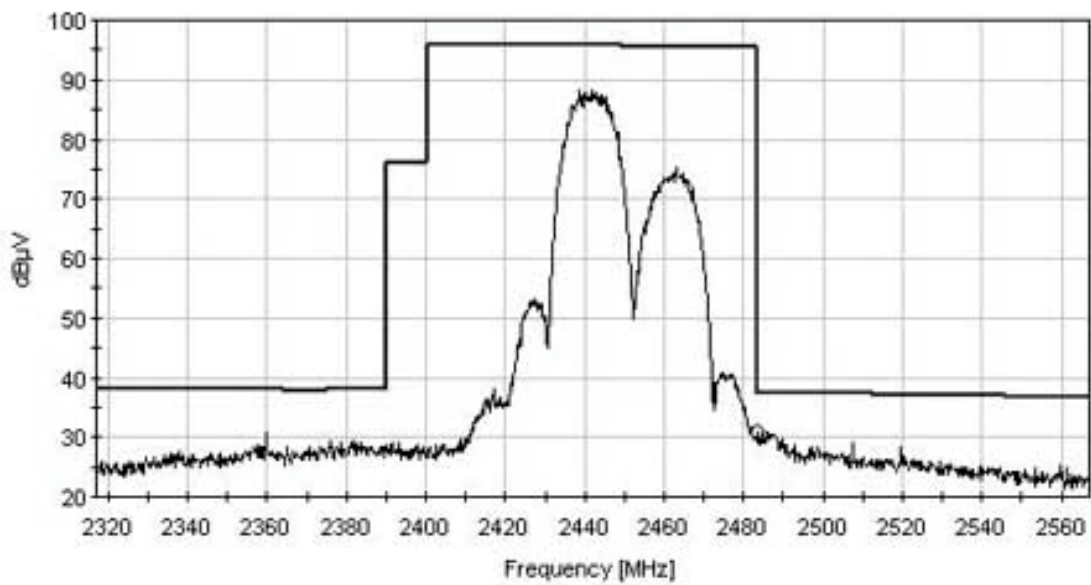
**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE B  
TEST 4 AVERAGE**

Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #4 (Average Measurement)  
Ref Level 97 dB $\mu$ V ATTN 10 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.484GHz 36.4dB $\mu$ V Mode: 802.11b



**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE B  
TEST 5 AVERAGE**

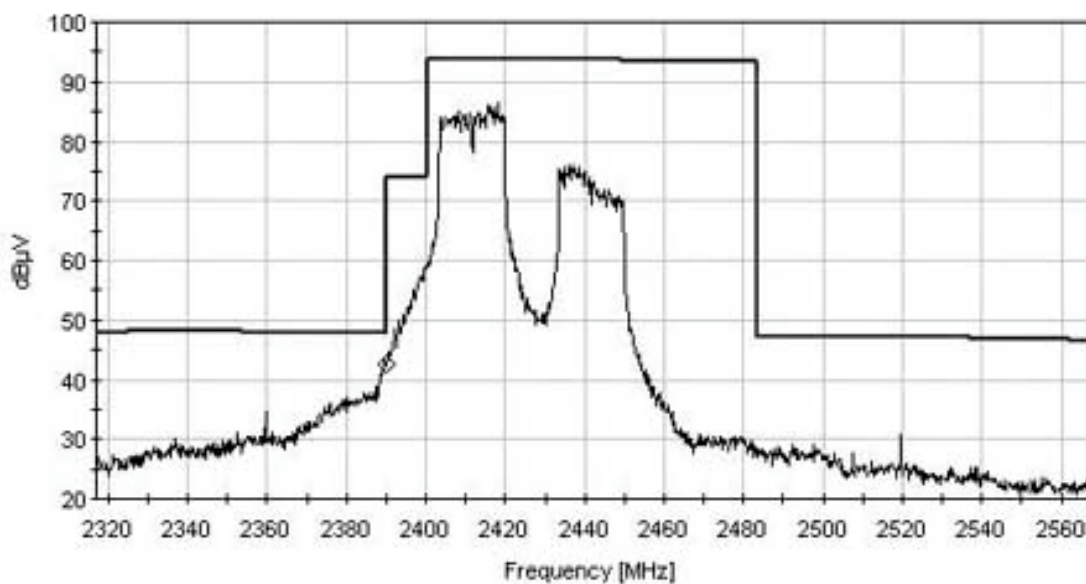
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #5 (Average Measurement)  
Ref Level 97 dB $\mu$ V ATTN 10 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.484GHz 30.7dB $\mu$ V Mode: 802.11b



## FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE G TEST 1 AVERAGE

Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #1 (Average Measurement)  
 Ref Level 97 dBμV ATTEN 0 dB  
 RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
 Marker: 2.39GHz 42.7dBμV

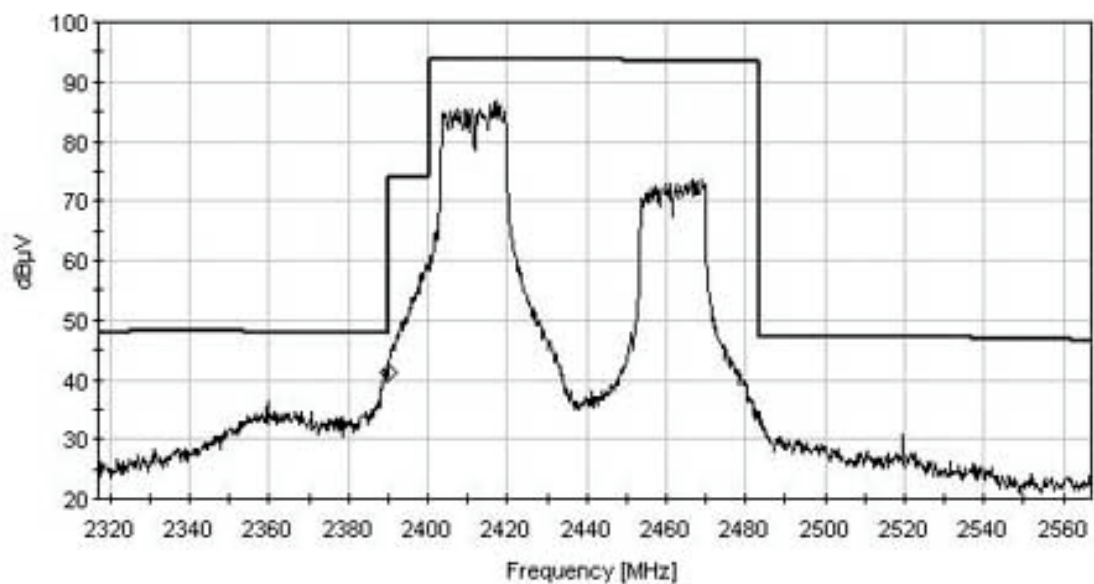
Mode: 802.11g



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE G  
TEST 2 AVERAGE**

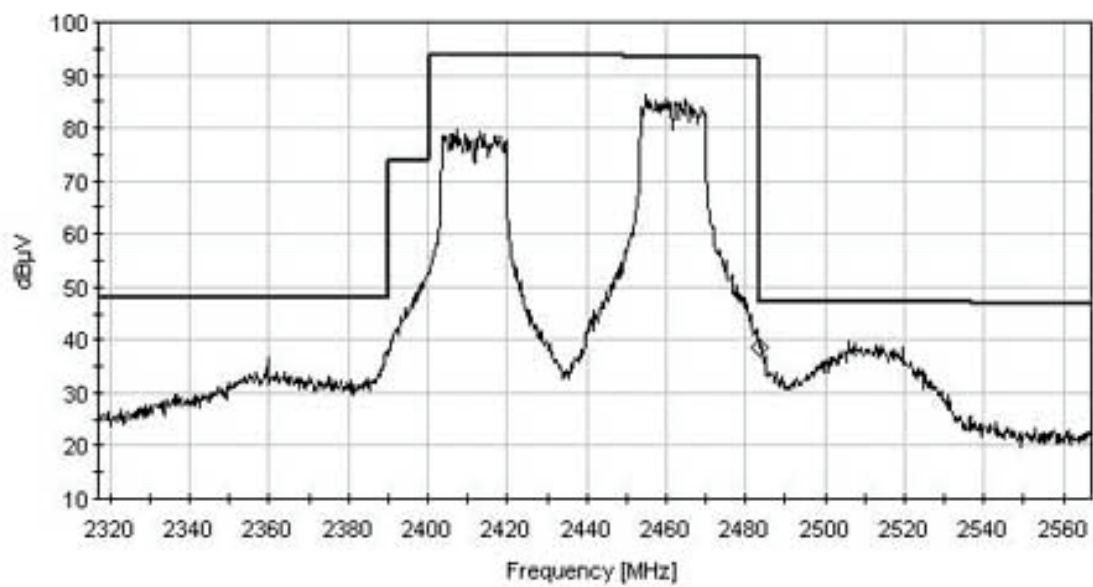
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #2 (Average Measurement)  
Ref Level 97 dB $\mu$ V ATTEN 0 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.39GHz 41.1dB $\mu$ V Mode: 802.11g



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE G  
TEST 3 AVERAGE**

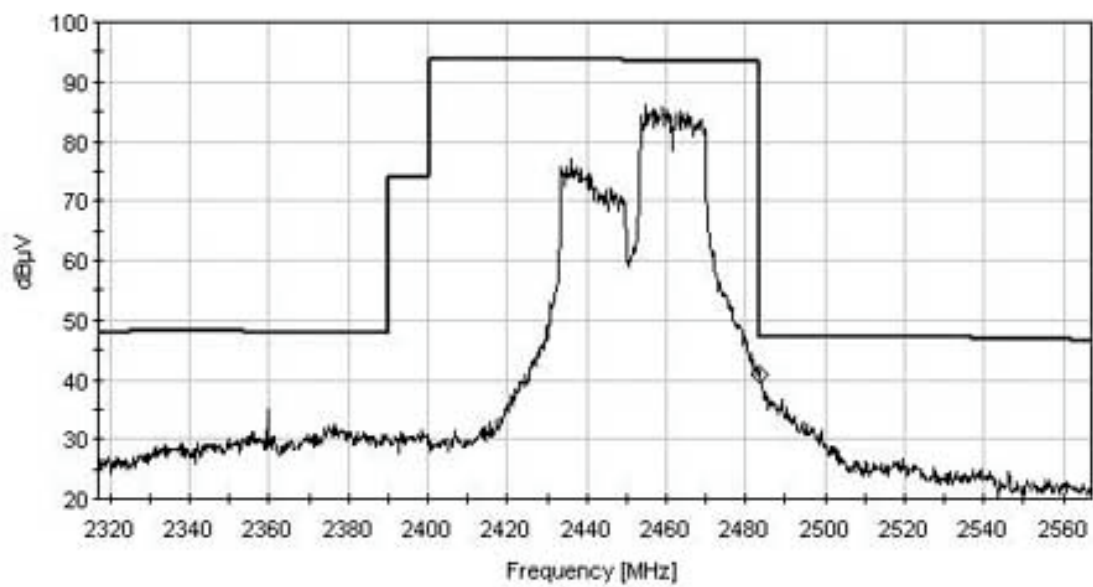
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #3 (Average Measurement)  
Ref Level 97 dBµV ATTEN 0 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.484GHz 38.7dBµV  
Mode: 802.11g



— FCC 15.247 (c) / 15.209 / 15.205

**FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE G  
TEST 4 AVERAGE**

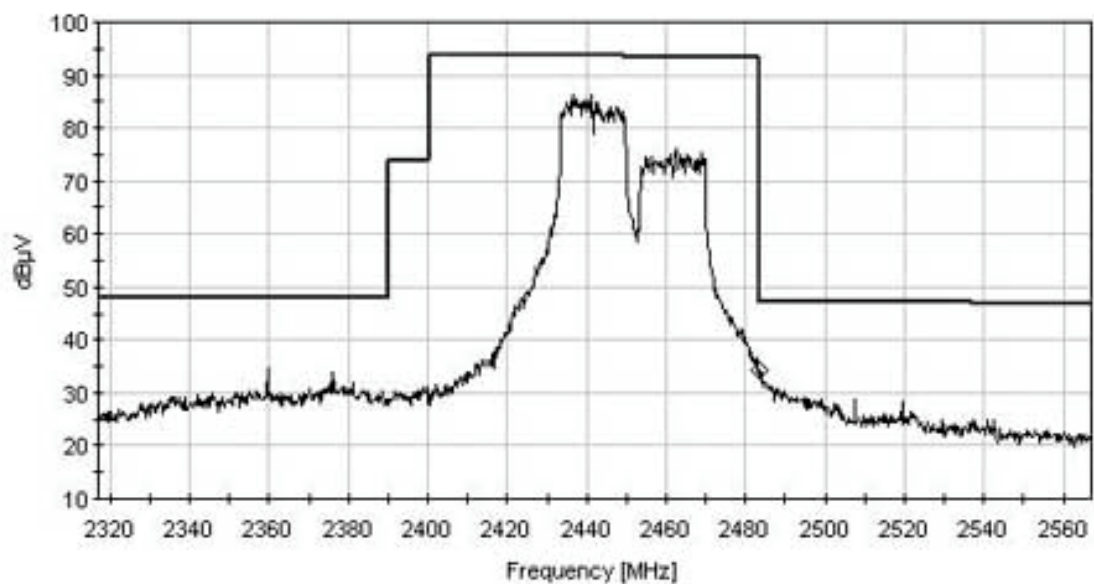
Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #4 (Average Measurement)  
Ref Level 97 dB $\mu$ V ATTEN 0 dB  
RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
Marker: 2.484GHz 40.8dB $\mu$ V Mode: 802.11g



— FCC 15.247 (c) / 15.209 / 15.205

## FCC 15.247(c) RADIATED EMISSIONS CONFIGURATION 2 MODE G TEST 5 AVERAGE

Digital Path Networks Relay 15.247(c) Radiated Spurious Emissions - Test Configuration #5 (Average Measurement)  
 Ref Level 97 dBμV ATTEN 0 dB  
 RES BW: 100.0kHz VID BW: 100.0kHz SWP: 75.0msec  
 Marker: 2.484GHz 34.1dBμV Mode: 802.11g



— FCC 15.247 (c) / 15.209 / 15.205

## **FCC 15.247(d) PEAK POWER SPECTRAL DENSITY**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362  
 Customer: **Digital Path**  
 Specification: **15.247(d) Peak Power Spectral Density**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 15:38:17  
 Equipment: **Radio** Sequence#: 11  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Askey Atheros Radio 120V 60Hz  
 S/N: 110804-001

### ***Test Equipment:***

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

### ***Equipment Under Test (\* = EUT):***

| Function            | Manufacturer | Model # | S/N        |
|---------------------|--------------|---------|------------|
| Askey Atheros Radio | Digital Path | Relay   | 110804-001 |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |

### ***Test Conditions / Notes:***

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 2.4GHz band. Modulation = 802.11g default (OFDM) Data Rate = 54Mbps Channel 1 PCDAC = 47, Channel 6 PCDAC = 47, Channel 11 PCDAC = 48. Modulation = 802.11b default (CCK) Data Rate = 11Mbps Channel 1 PCDAC = 50, Channel 6 PCDAC = 52, Channel 11 PCDAC = 53. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50%.

### ***Transducer Legend:***

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

### ***Measurement Data:***

Reading listed by margin.

Test Lead: Antenna

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV   | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----|----|---------------|--------------|----------------|--------------|--------------|
| 1 | 2462.000M   | 95.0         | +5.8     | +1.2     |    |    | +0.0          | 102.0        | 115.0          | -13.0        | Anten        |
|   |             |              |          |          |    |    |               |              | 802.11b (CCK)  |              |              |
| 2 | 2412.000M   | 94.5         | +5.7     | +1.2     |    |    | +0.0          | 101.4        | 115.0          | -13.6        | Anten        |
|   |             |              |          |          |    |    |               |              | 802.11b (CCK)  |              |              |
| 3 | 2442.000M   | 93.7         | +5.8     | +1.2     |    |    | +0.0          | 100.7        | 115.0          | -14.3        | Anten        |
|   |             |              |          |          |    |    |               |              | 802.11b (CCK)  |              |              |
| 4 | 2412.000M   | 89.8         | +5.7     | +1.2     |    |    | +0.0          | 96.7         | 115.0          | -18.3        | Anten        |
|   |             |              |          |          |    |    |               |              | 802.11g (OFDM) |              |              |
| 5 | 2462.000M   | 89.0         | +5.8     | +1.2     |    |    | +0.0          | 96.0         | 115.0          | -19.0        | Anten        |
|   |             |              |          |          |    |    |               |              | 802.11g (OFDM) |              |              |
| 6 | 2442.000M   | 89.0         | +5.8     | +1.2     |    |    | +0.0          | 96.0         | 115.0          | -19.0        | Anten        |
|   |             |              |          |          |    |    |               |              | 802.11g (OFDM) |              |              |

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **15.247(d) Peak Power Spectral Density**  
 Work Order #: **82775** Date: 11/11/2004  
 Test Type: **Antenna Port** Time: 10:00:50  
 Equipment: **Radio** Sequence#: 10  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Askey Atheros Radio 120V 60Hz  
 S/N: 110804-001

**Test Equipment:**

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

**Equipment Under Test (\* = EUT):**

| Function            | Manufacturer | Model # | S/N        |
|---------------------|--------------|---------|------------|
| Askey Atheros Radio | Digital Path | Relay   | 110804-001 |

**Support Devices:**

| Function            | Manufacturer | Model #      | S/N          |
|---------------------|--------------|--------------|--------------|
| Laptop Power Supply | Toshiba      | PA3282U-1ACA | 0322A0184076 |
| Support Computer    | Toshiba      | A15-S127     | 63161709P    |
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a  |

**Test Conditions / Notes:**

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.8GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps PCDAC=60. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50% humidity: 50%.

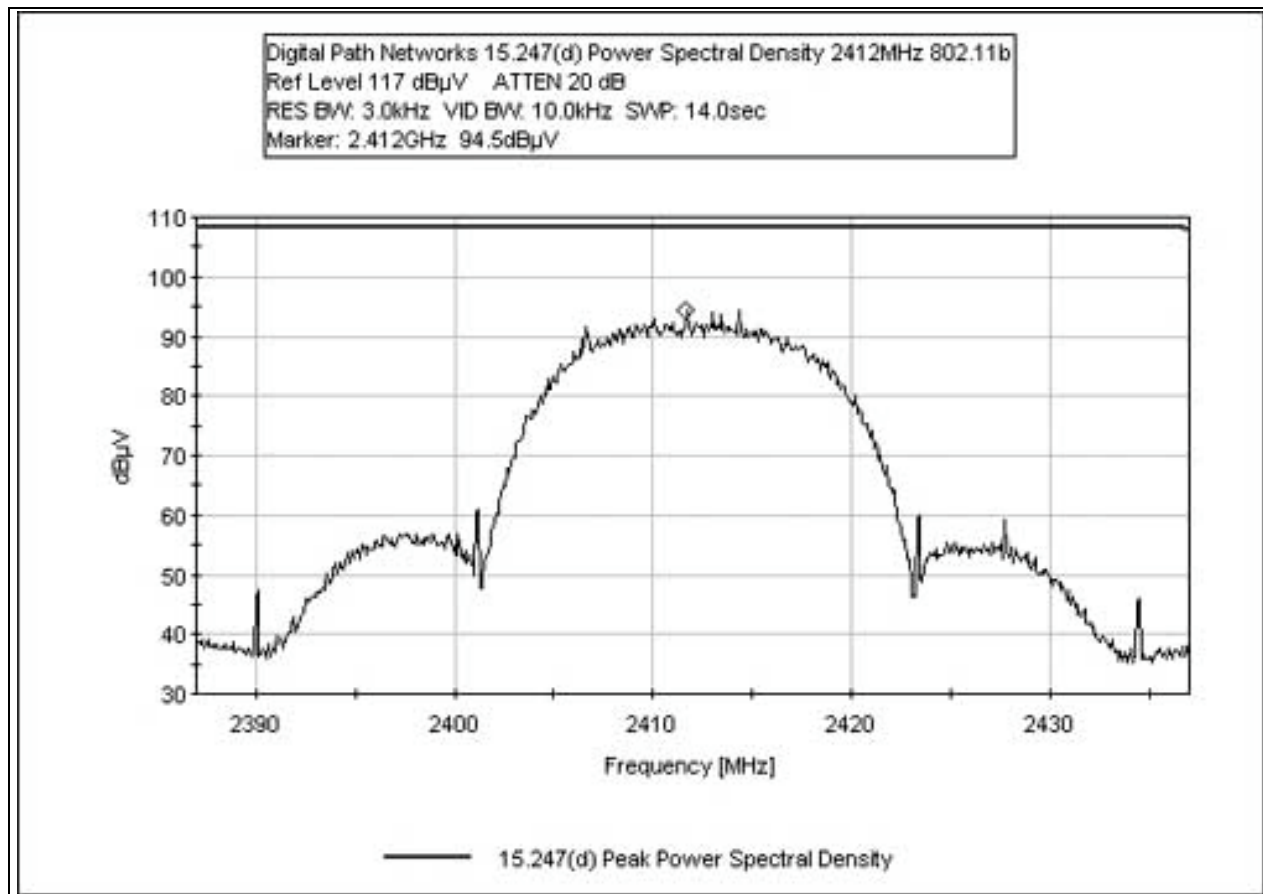
**Transducer Legend:**

|                        |                            |
|------------------------|----------------------------|
| T1=ATT WE 6dB ANP01950 | T2=CABLE - HF Kit ANP04291 |
|------------------------|----------------------------|

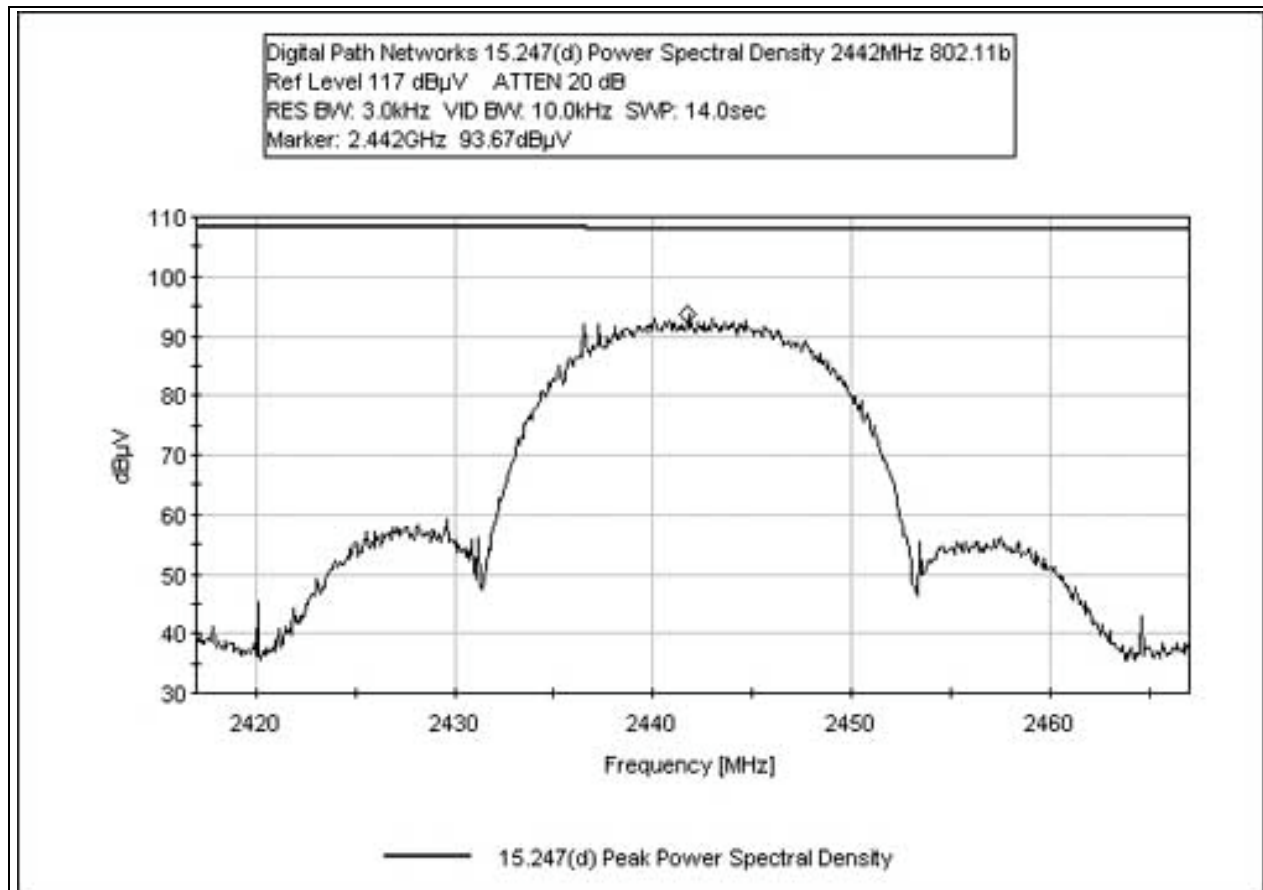
**Measurement Data:** Reading listed by margin. Test Lead: Antenna

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | dB | dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----|----|---------------|--------------|--------------|--------------|--------------|
| 1 | 5825.000M   | 94.0         | +5.8     | +1.3     |    |    | +0.0          | 101.1        | 115.0        | -13.9        | Anten        |
| 2 | 5745.000M   | 93.8         | +5.8     | +1.3     |    |    | +0.0          | 100.9        | 115.0        | -14.1        | Anten        |
| 3 | 5785.000M   | 93.5         | +5.8     | +1.3     |    |    | +0.0          | 100.6        | 115.0        | -14.4        | Anten        |

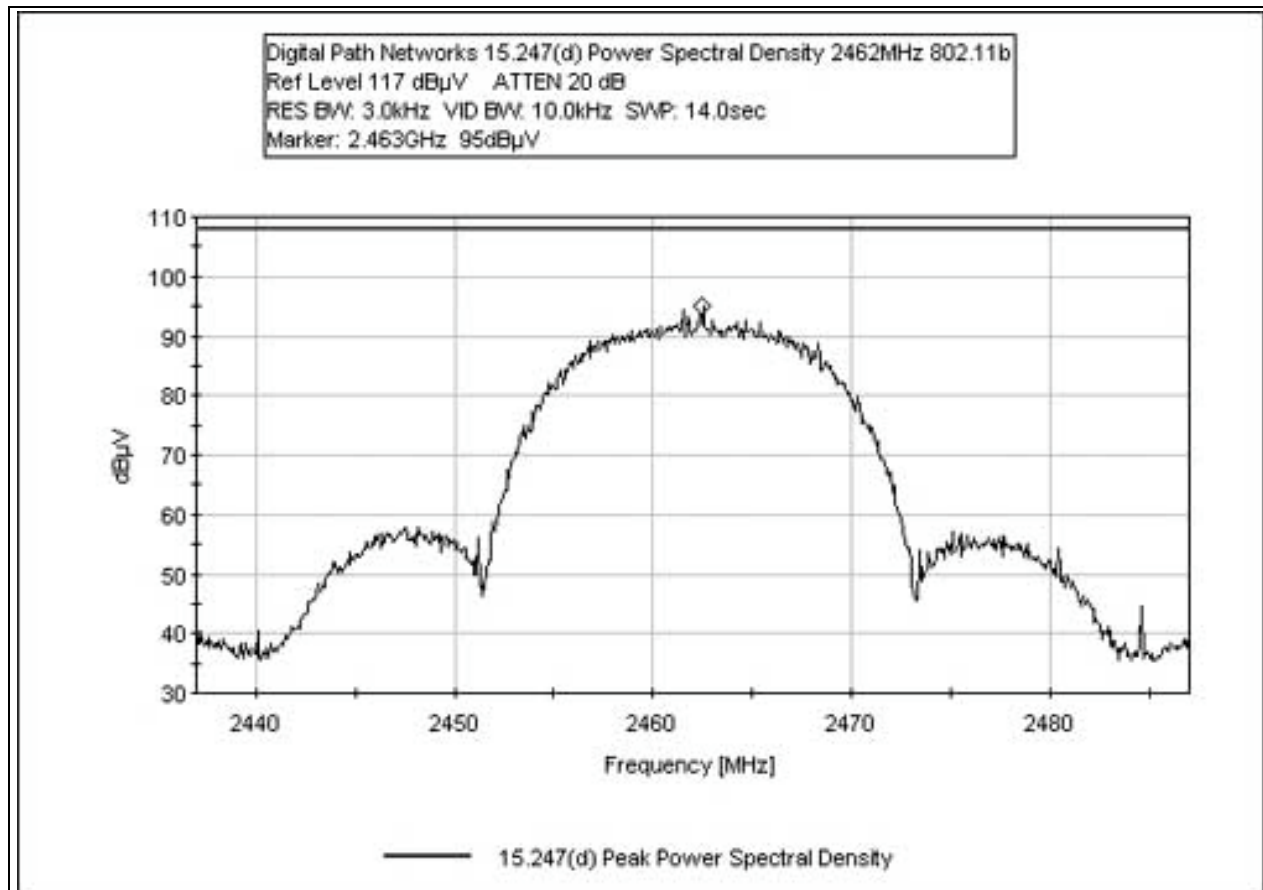
**FCC 15.247(d) POWER SPECTRAL DENSITY 2412 MHz 802.11b**



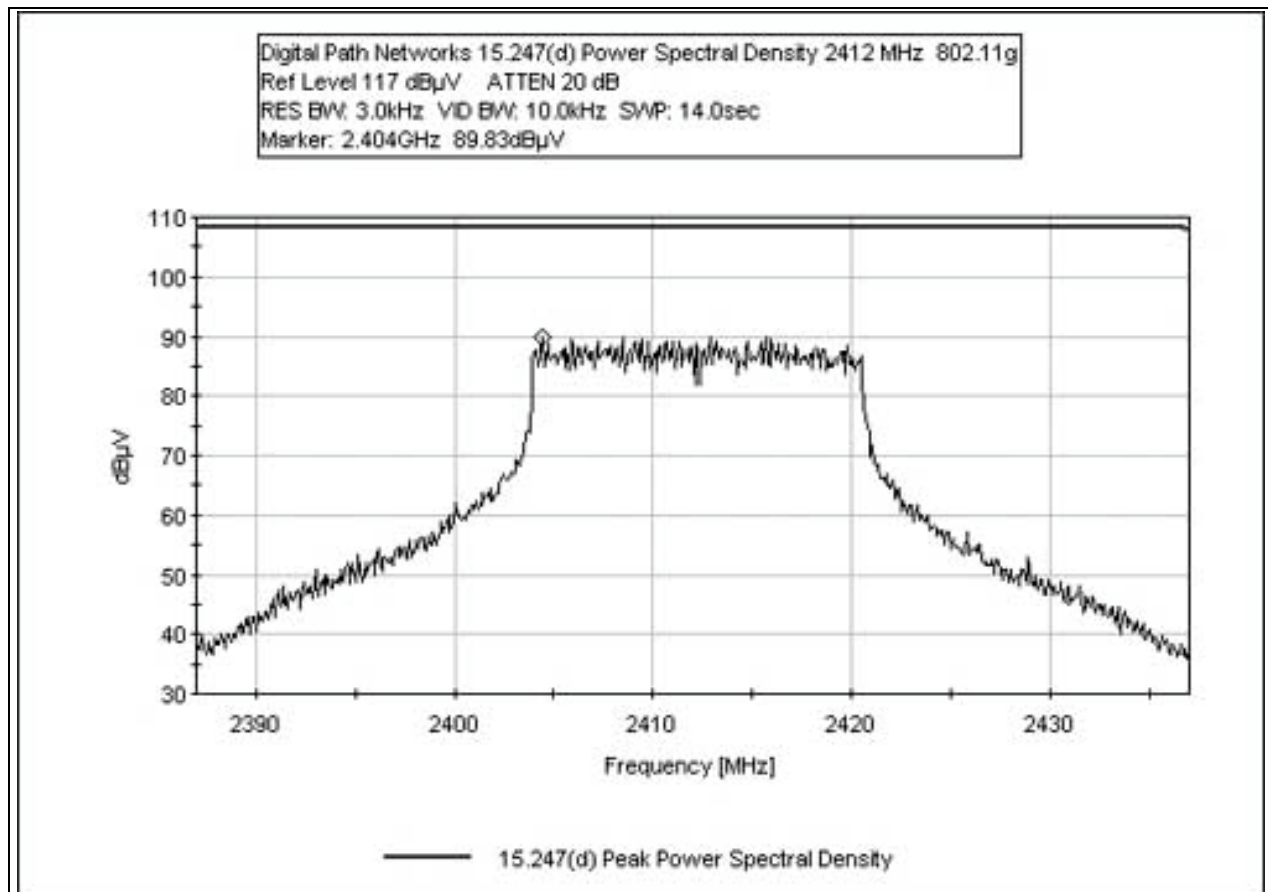
**FCC 15.247(d) POWER SPECTRAL DENSITY 2442 MHz 802.11b**



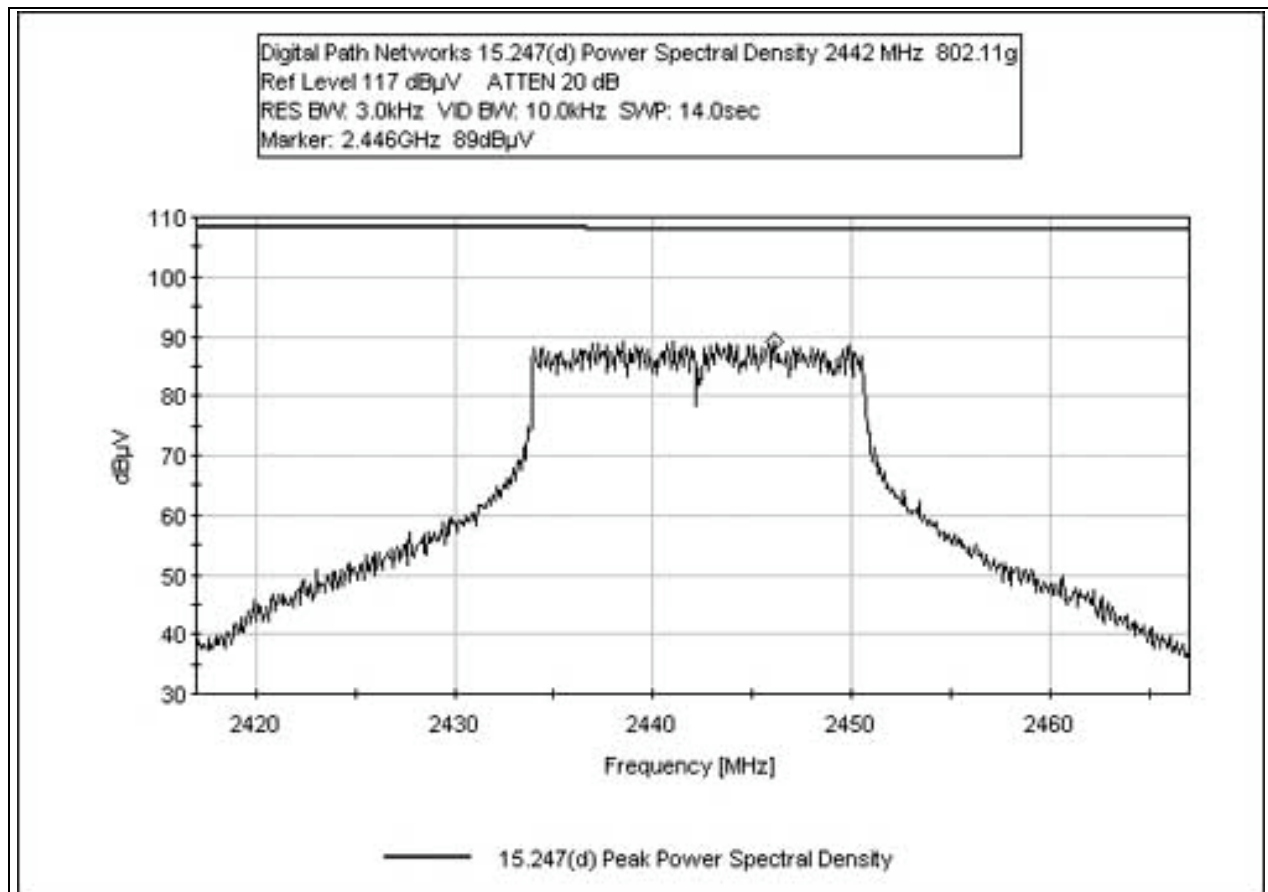
**FCC 15.247(d) POWER SPECTRAL DENSITY 2462 MHz 802.11b**



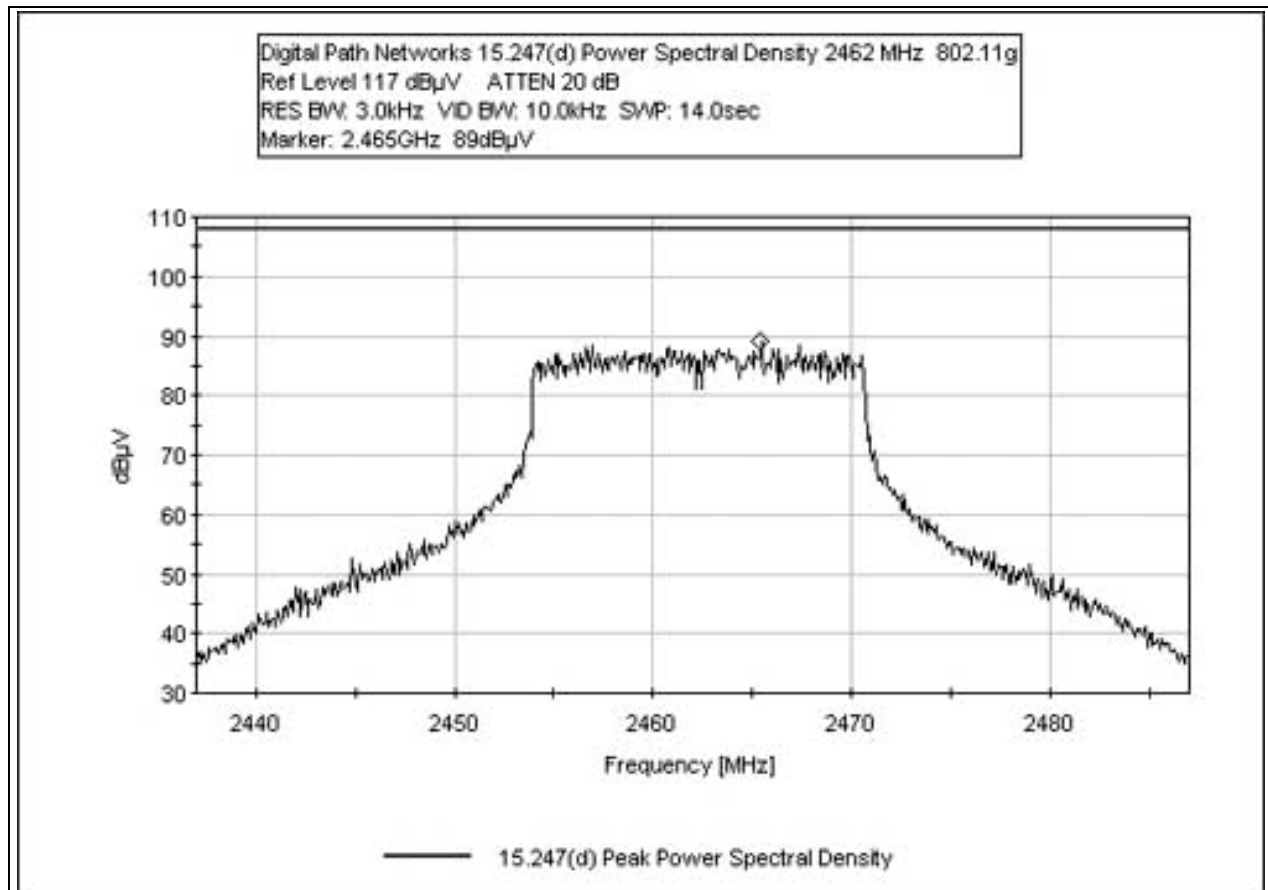
**FCC 15.247(d) POWER SPECTRAL DENSITY 2412 MHz 802.11g**



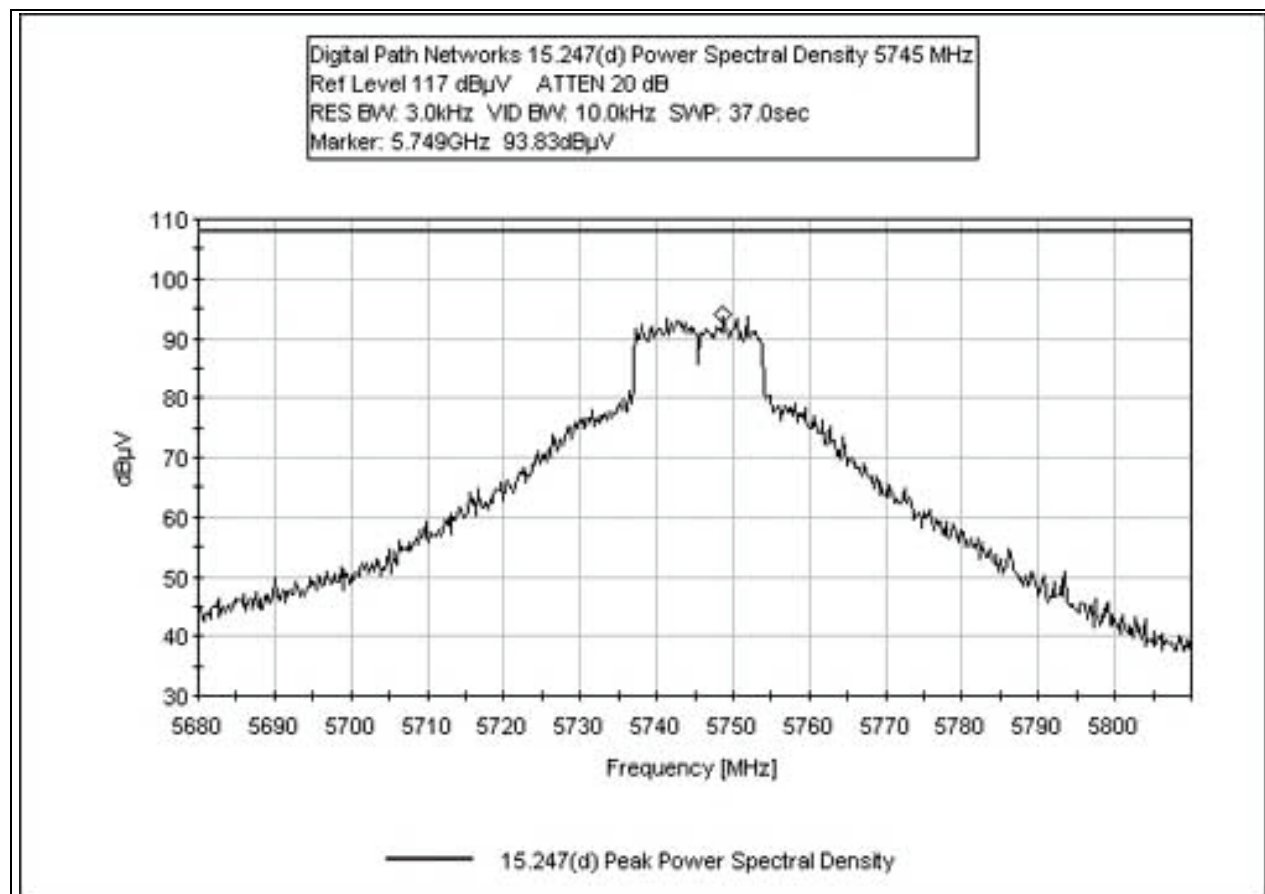
**FCC 15.247(d) POWER SPECTRAL DENSITY 2442 MHz 802.11g**



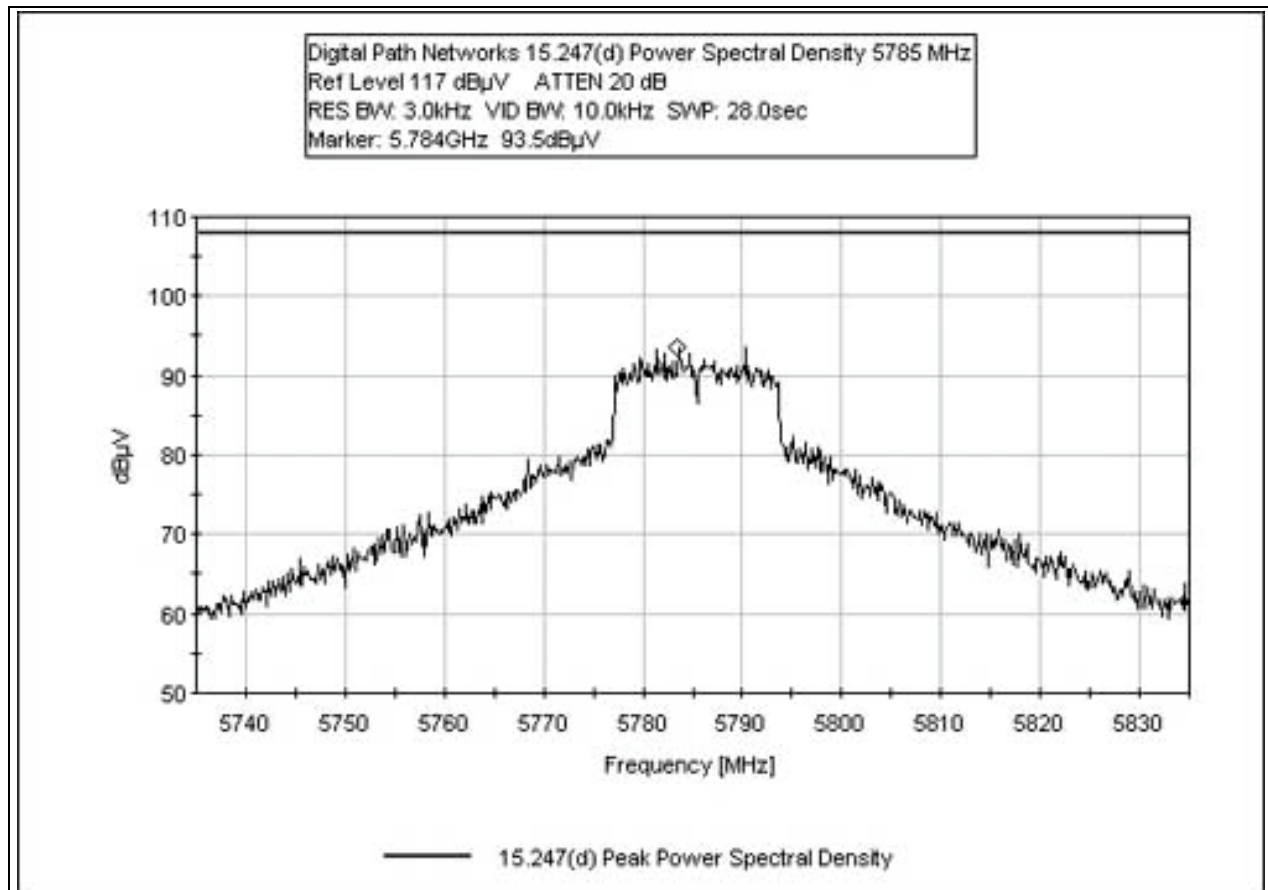
**FCC 15.247(d) POWER SPECTRAL DENSITY 2462 MHz 802.11g**



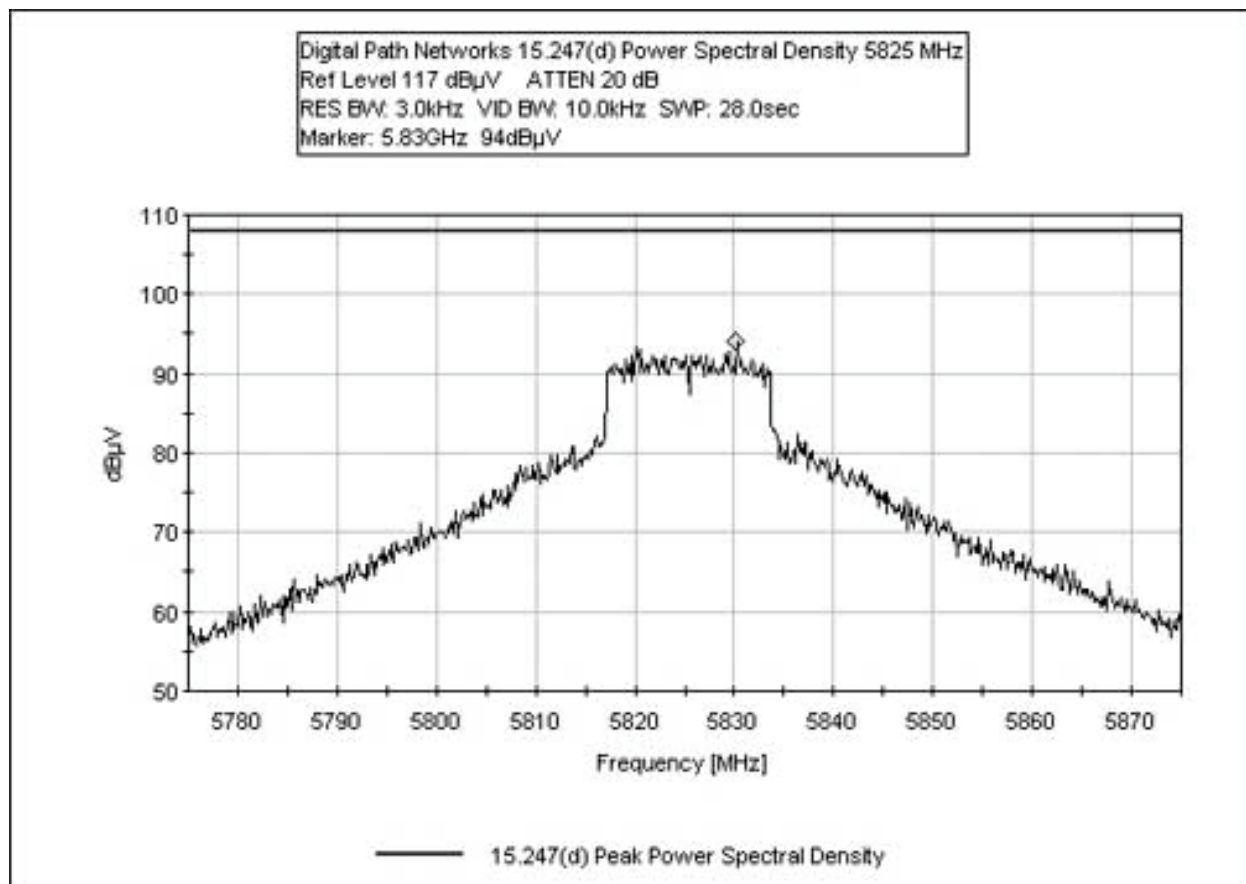
**FCC 15.247(d) POWER SPECTRAL DENSITY 5745 MHz**



**FCC 15.247(d) POWER SPECTRAL DENSITY 5785 MHz**



**FCC 15.247(d) POWER SPECTRAL DENSITY 5825 MHz**



## **FCC 15.407(a)(2) PEAK OUTPUT POWER**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.407(a)(2) Output Power**  
 Work Order #: **82775** Date: 11/12/2004  
 Test Type: **Antenna Port** Time: 08:19:57  
 Equipment: **Askey Atheros Radio** Sequence#: 19  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

### ***Test Equipment:***

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

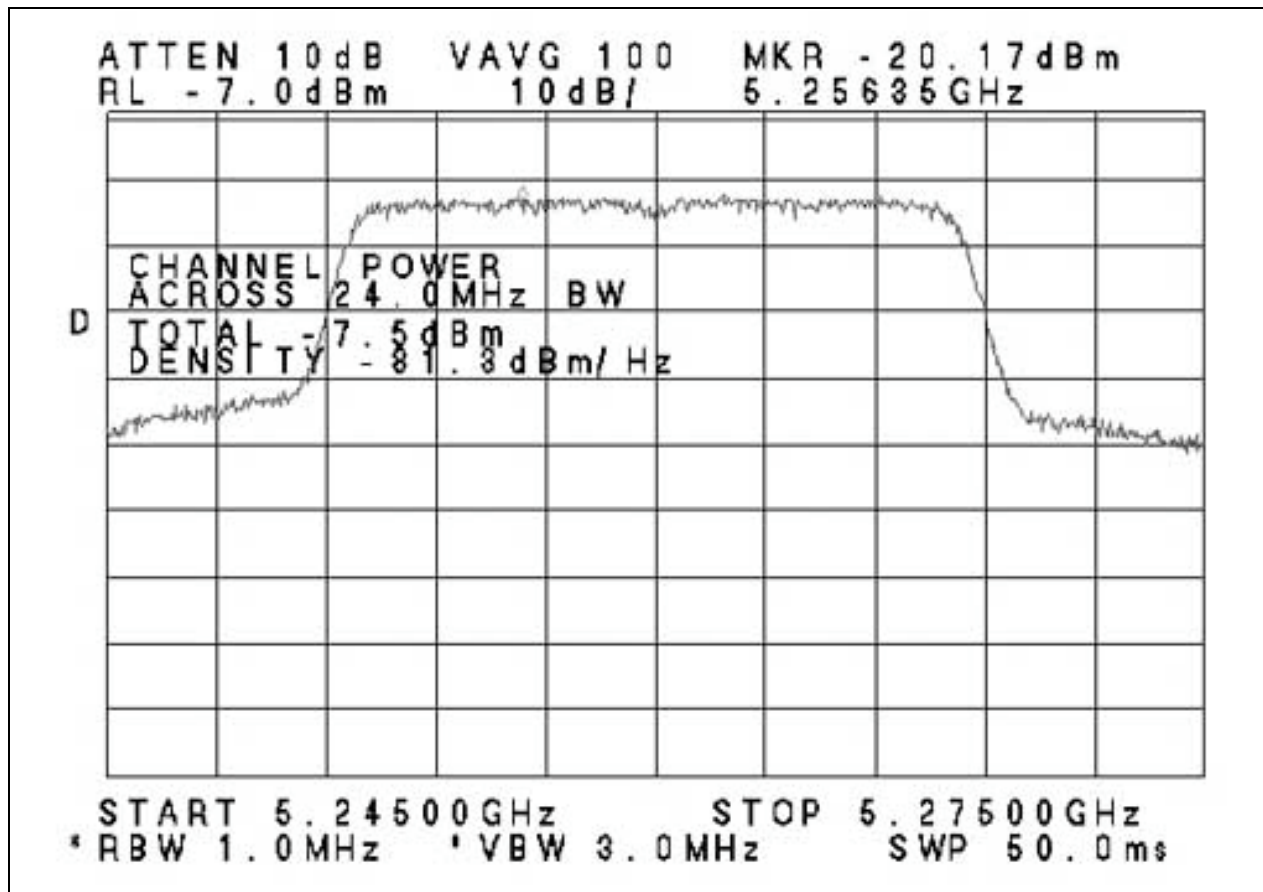
### ***Test Conditions / Notes:***

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.3GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps. For Antenna 1 (18dBi) Low Channel PCDAC = 1, Mid Channel PCDAC = 43, High Channel PCDAC = 42. RBW = 1MHz, VBW = 3MHz. Detector = Video Sample @ 100 samples. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50%.

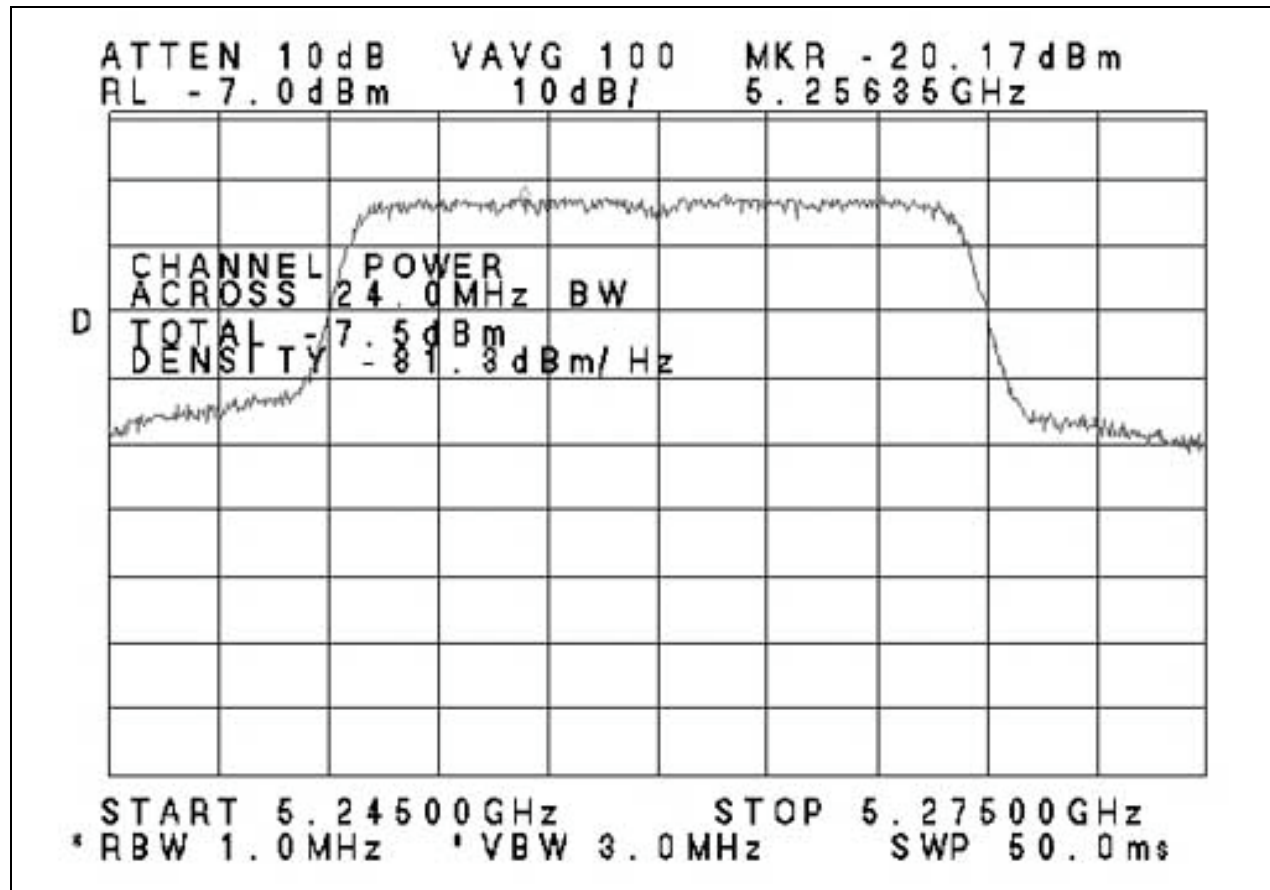
Test setup is in accordance with DA 02-2138 Method 1

| Frequency | Antenna | Channel Power (dBm) | Limit (dBm) | Result |
|-----------|---------|---------------------|-------------|--------|
| 5260      | 18dBi   | -7.5                | 24          | Pass   |
| 5300      | 18dBi   | 10.8                | 24          | Pass   |
| 5320      | 18dBi   | 11.0                | 24          | Pass   |

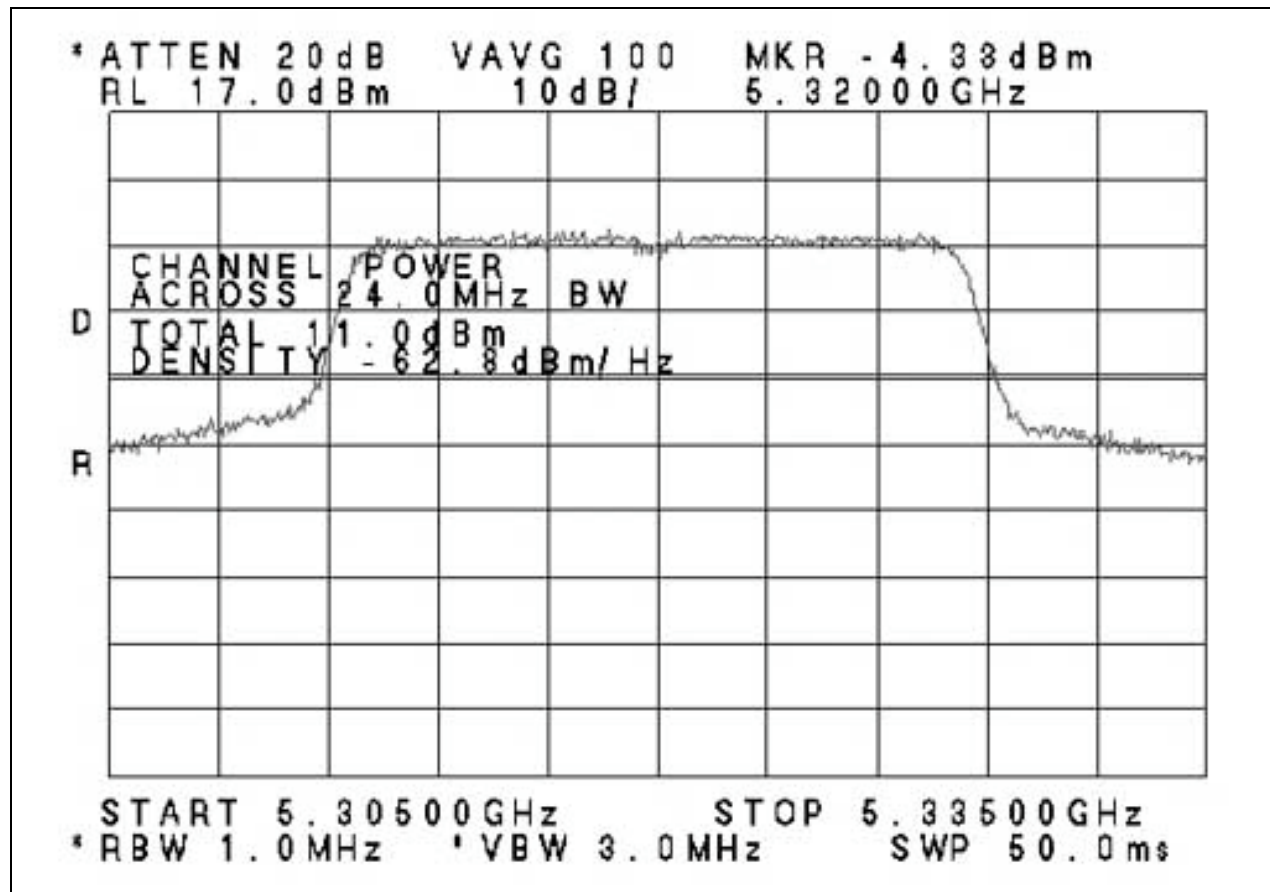
**FCC 15.407(a)(2) PEAK OUTPUT POWER ANTENNA 1 LOW**



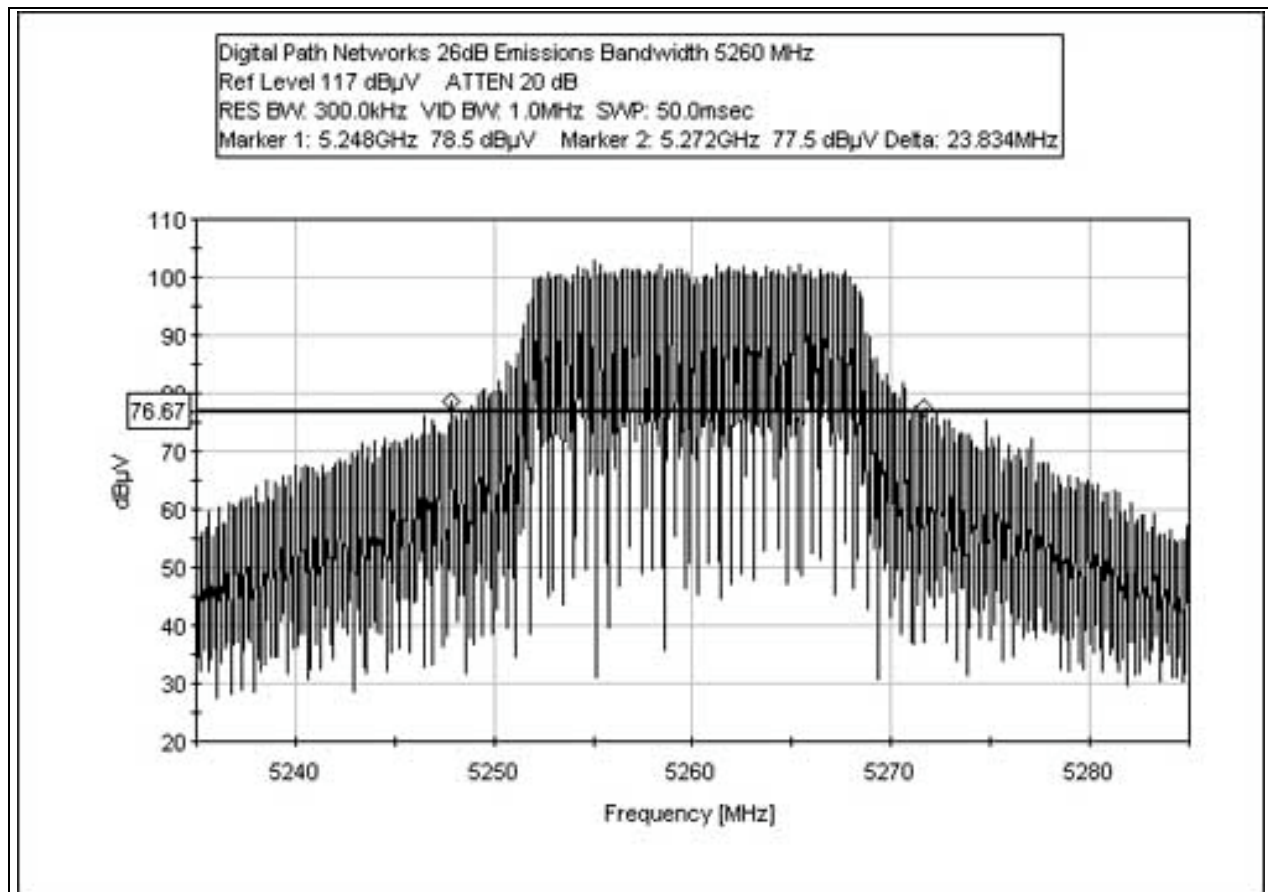
FCC 15.407(a)(2) PEAK OUTPUT POWER ANTENNA 1 MID



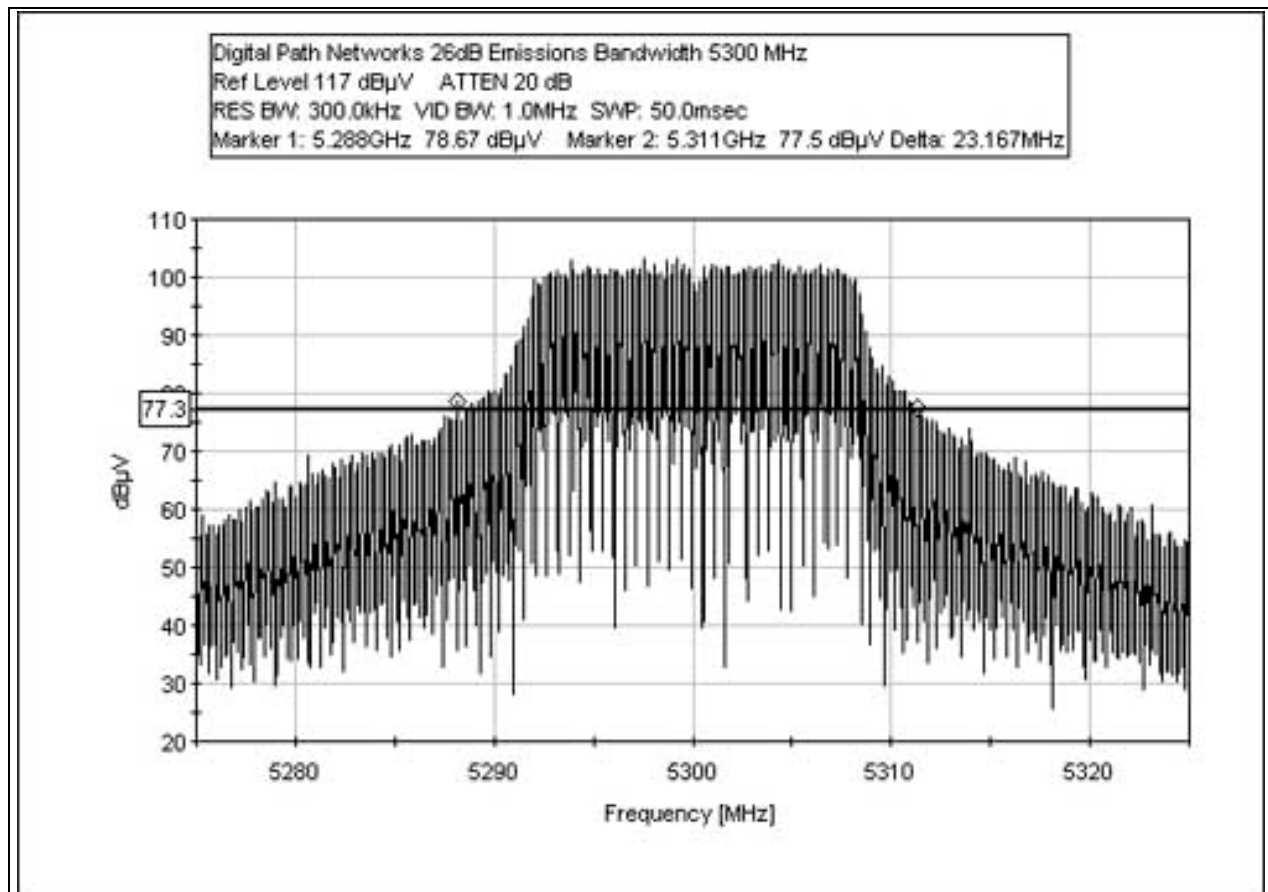
**FCC 15.407(a)(2) PEAK OUTPUT POWER ANTENNA 1 HIGH**



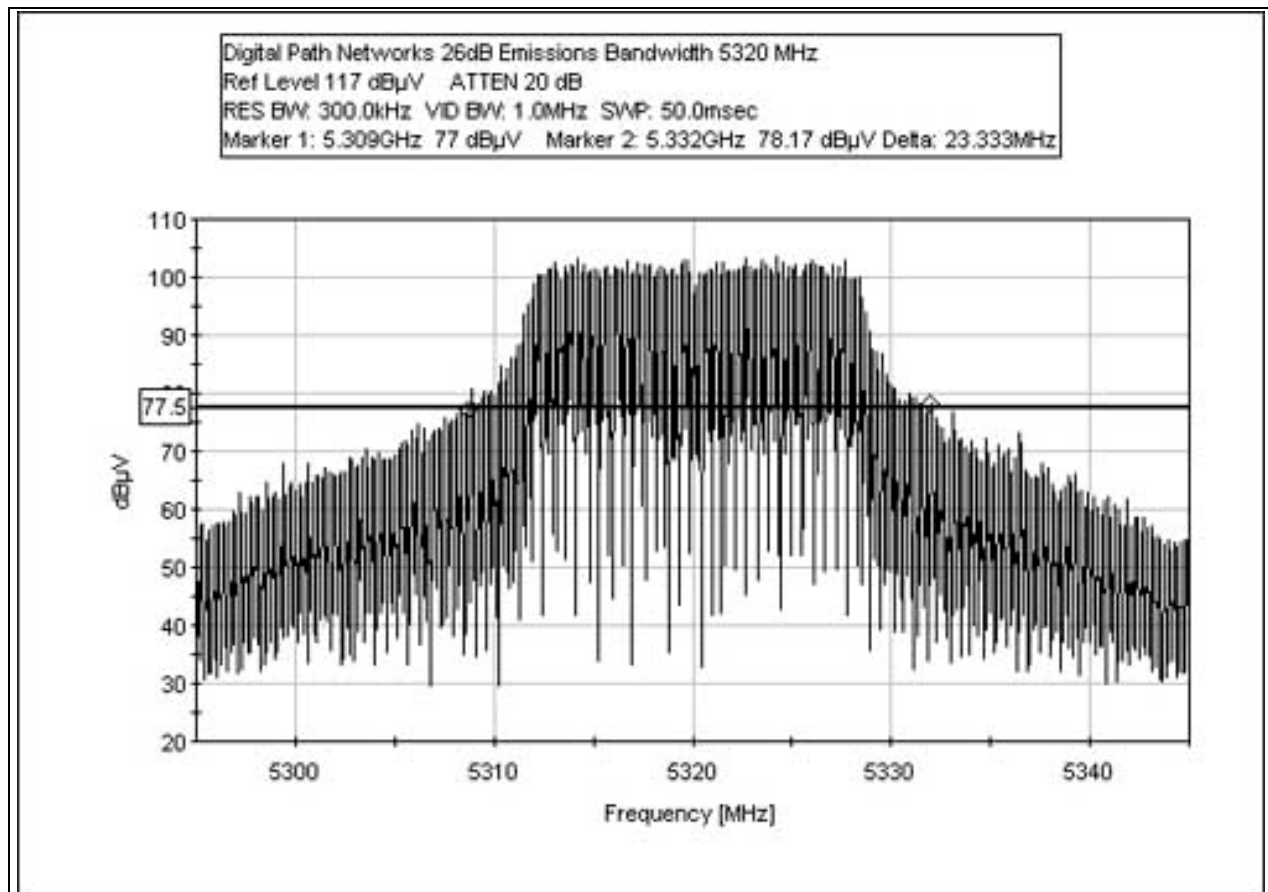
**FCC 15.407(a)(2) 26dB BANDWIDTH 5260 MHz**



**FCC 15.407(a)(2) 26dB BANDWIDTH 5300 MHz**



**FCC 15.407(a)(2) 26dB BANDWIDTH 5320 MHz**



## **FCC 15.407(a)(5) PEAK POWER SPECTRAL DENSITY**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.407(a)(5) PSD**  
 Work Order #: **82775**  
 Test Type: **Antenna Port**  
 Equipment: **Askey Atheros Radio**  
 Manufacturer: Digital Path  
 Model: Relay & Downlink  
 S/N: 110804-001

Date: 11/12/2004  
 Time: 10:39:08  
 Sequence#: 20  
 Tested By: Randal Clark  
 120V 60Hz

### ***Test Equipment:***

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

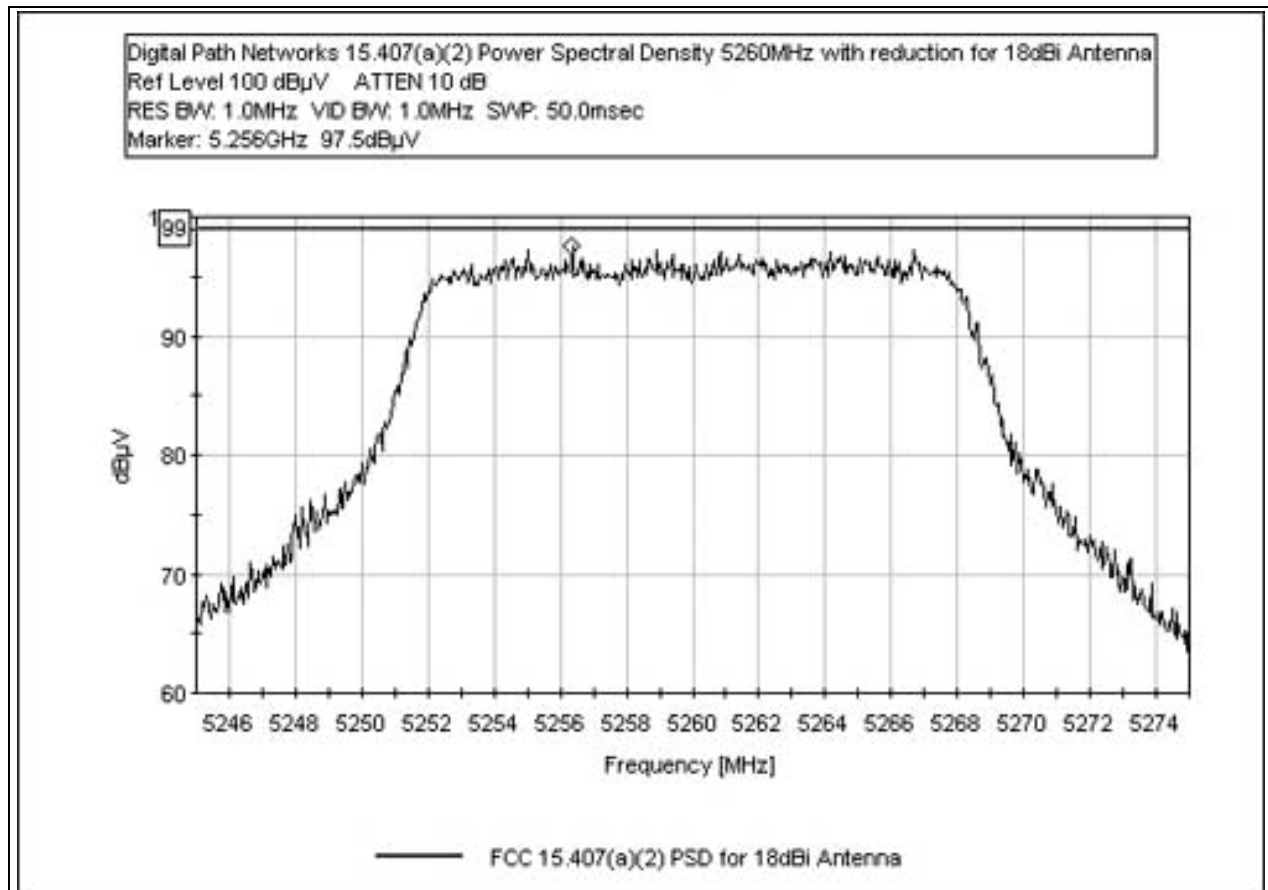
### ***Test Conditions / Notes:***

EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.3GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps. Low Channel PCDAC = 1, Mid Channel PCDAC = 43, High Channel PCDAC = 42. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50%. RBW = 1 MHz, VBW = 1 MHz. Measurements are taken with video sample averaging over 100 sweeps. EUT is configured to transmit at 100% duty cycle over the sampling period. 15.407(a)(2) Limit is 11dBm/MHz with corresponding gain reduction of 12dB for use with an 18dBi gain antenna. Limit is therefore -1dBm/MHz (106dBuV/MHz). 15.407(a)(2) Limit is 11dBm/MHz with corresponding gain reduction of 23dB for use with a 29dBi gain antenna. Limit is therefore -12dBm/MHz (95dBuV/MHz).

Test setup is in accordance with DA 02-2138 Method 1

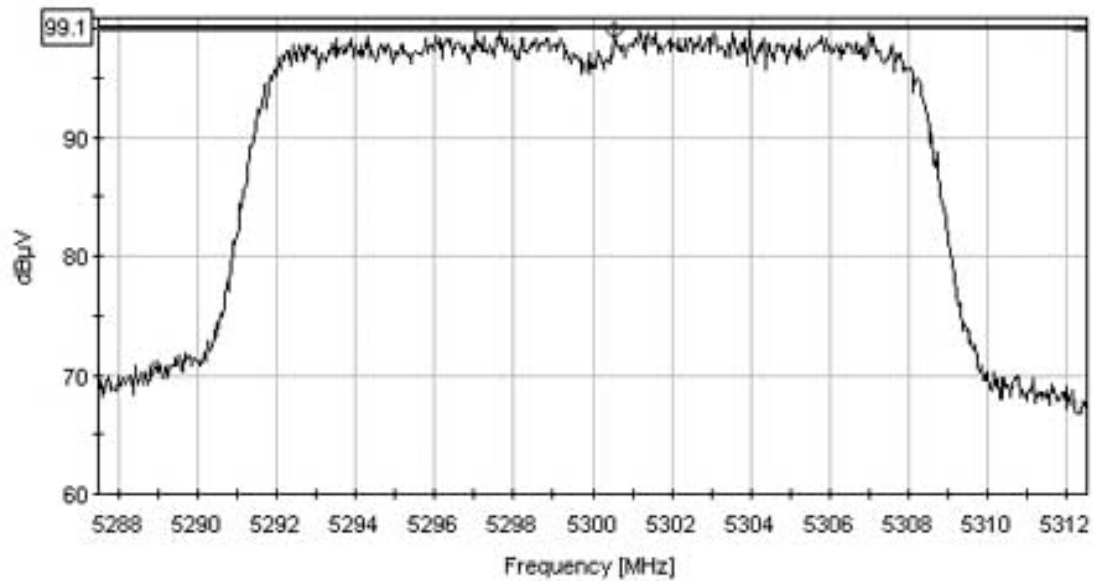
| Frequency | Antenna | Spectral Density (dBm) | Limit (dBm) | Result |
|-----------|---------|------------------------|-------------|--------|
| 5260      | 18dBi   | -2.5                   | -1          | Pass   |
| 5300      | 18dBi   | -1.5                   | -1          | Pass   |
| 5320      | 18dBi   | -1.2                   | -1          | Pass   |

# **FCC 15.407(a)(5) POWER SPECTRAL DENSITY ANTENNA 1 5260 MHz**



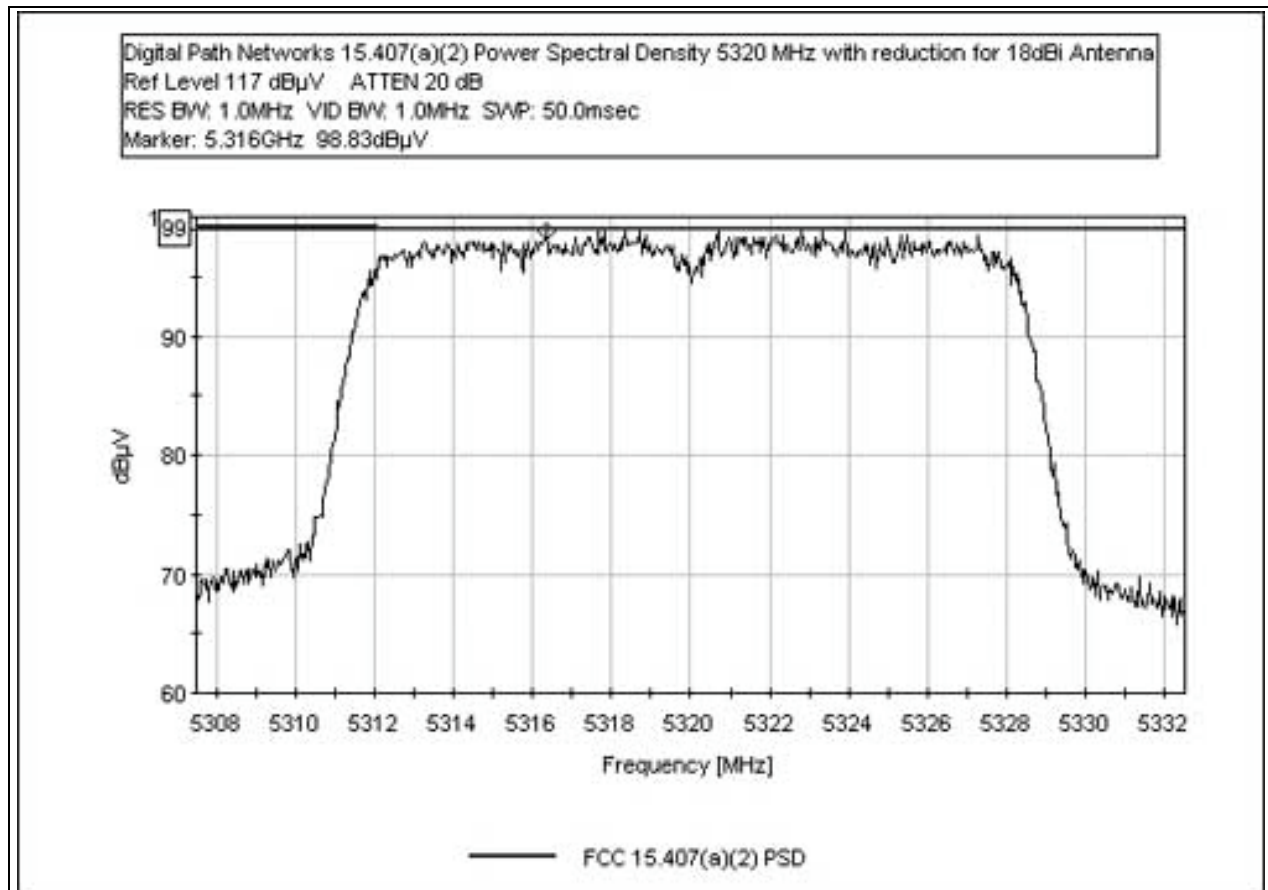
# **FCC 15.407(a)(5) POWER SPECTRAL DENSITY ANTENNA 1 5300 MHz**

Digital Path Networks 15.407(a)(2) Power Spectral Density 5300 MHz with reduction for 18dBi Antenna  
Ref Level 117 dBμV ATTN 20 dB  
RES BW: 1.0MHz VID BW: 1.0MHz SWP: 50.0msec  
Marker: 5.301GHz 99dBμV



— FCC 15.407(a)(2) PSD

**FCC 15.407(a)(5) POWER SPECTRAL DENSITY ANTENNA 1 5320 MHz**



## **FCC 15.407(a)(6) PEAK EXCURSION**

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.407(a)(6) Peak Excursion**  
 Work Order #: **82775** Date: 11/12/2004  
 Test Type: **Antenna Port** Time: 08:19:57  
 Equipment: **Askey Atheros Radio** Sequence#: 19  
 Manufacturer: Digital Path Tested By: Randal Clark  
 Model: Relay & Downlink 120V 60Hz  
 S/N: 110804-001

### ***Test Equipment:***

| Function                | S/N        | Calibration Date | Cal Due Date | Asset # |
|-------------------------|------------|------------------|--------------|---------|
| SA_8564E                | 3623A00539 | 08/02/2004       | 08/02/2006   | 01406   |
| Weinchel 6dB attenuator | J7614      | 10/01/2004       | 10/01/2006   | P01950  |
| Hardline                | NA         | 03/18/2003       | 03/18/2005   | P04291  |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model #          | S/N        |
|----------------------|--------------|------------------|------------|
| Askey Atheros Radio* | Digital Path | Relay & Downlink | 110804-001 |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

### ***Test Conditions / Notes:***

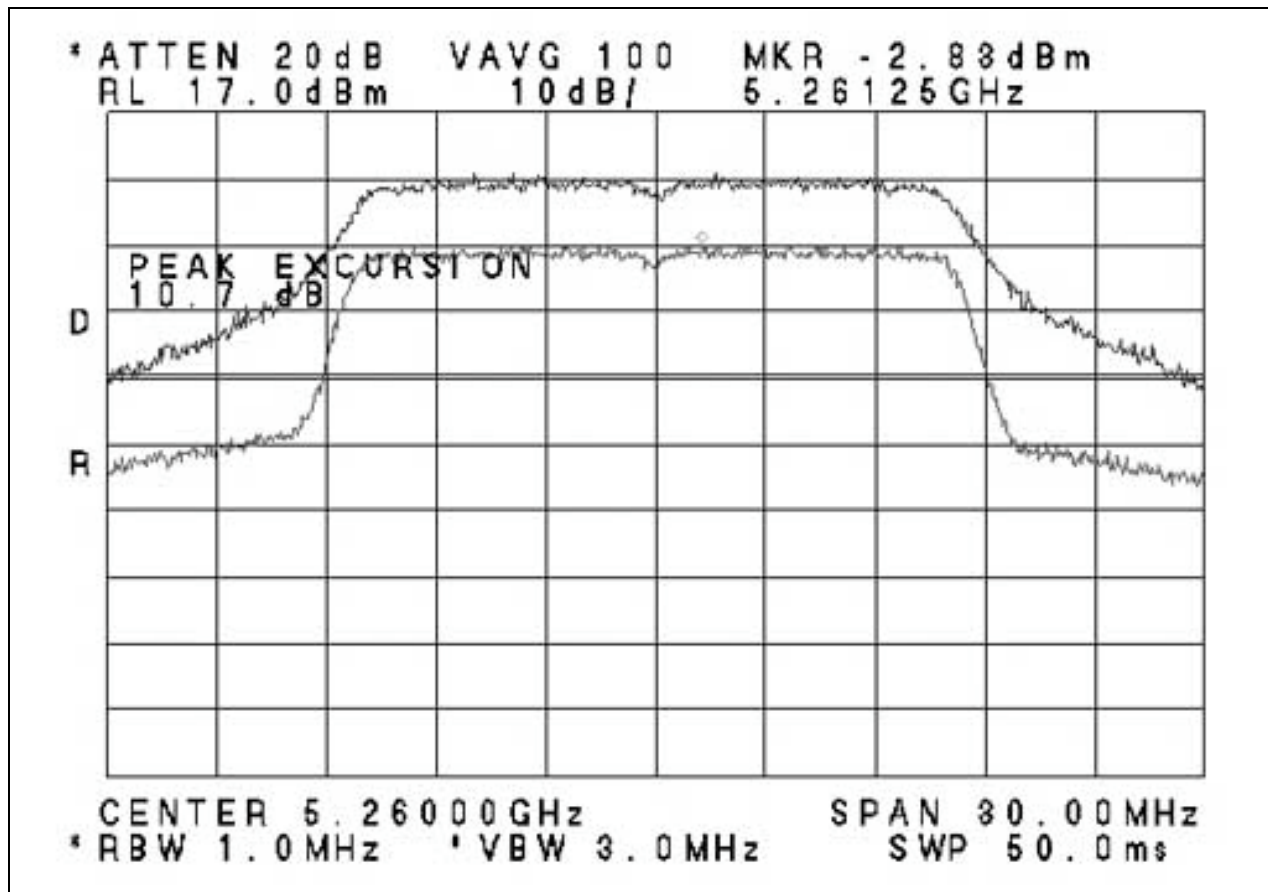
EUT is a wireless relay and downlink station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.3GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54MBps. For Antenna 1 (18dBi) Low Channel PCDAC = 43, Mid Channel PCDAC = 43, High Channel PCDAC = 42. RBW = 1MHz, VBW = 3MHz. Detector = Video Sample @ 100 samples. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 50%.

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified in this paragraph) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

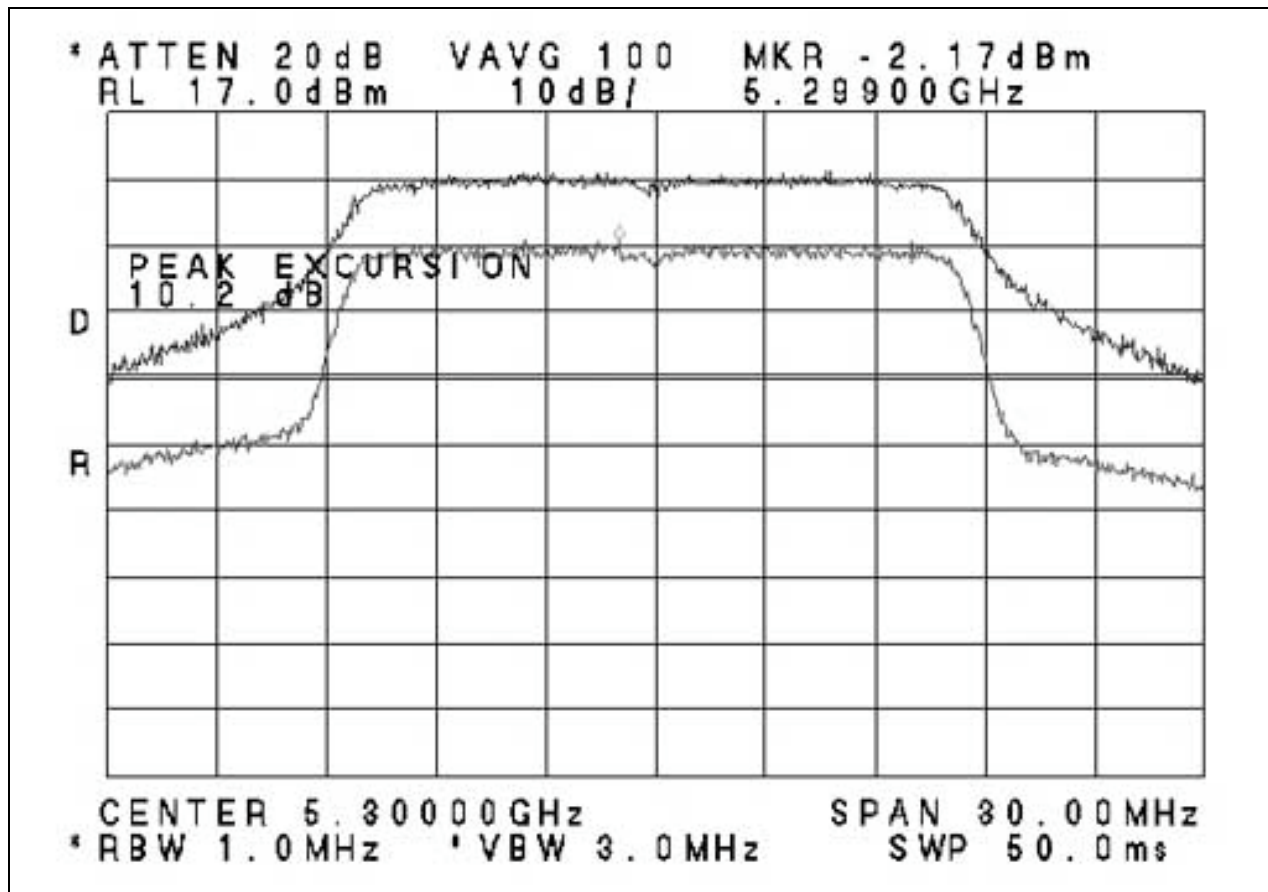
Test setup is in accordance with DA 02-2138 Method 1

| Frequency | Peak Excursion (dB) | Limit (dB) | Result |
|-----------|---------------------|------------|--------|
| 5260      | 10.7                | 13         | Pass   |
| 5300      | 10.2                | 13         | Pass   |
| 5320      | 10.5                | 13         | Pass   |

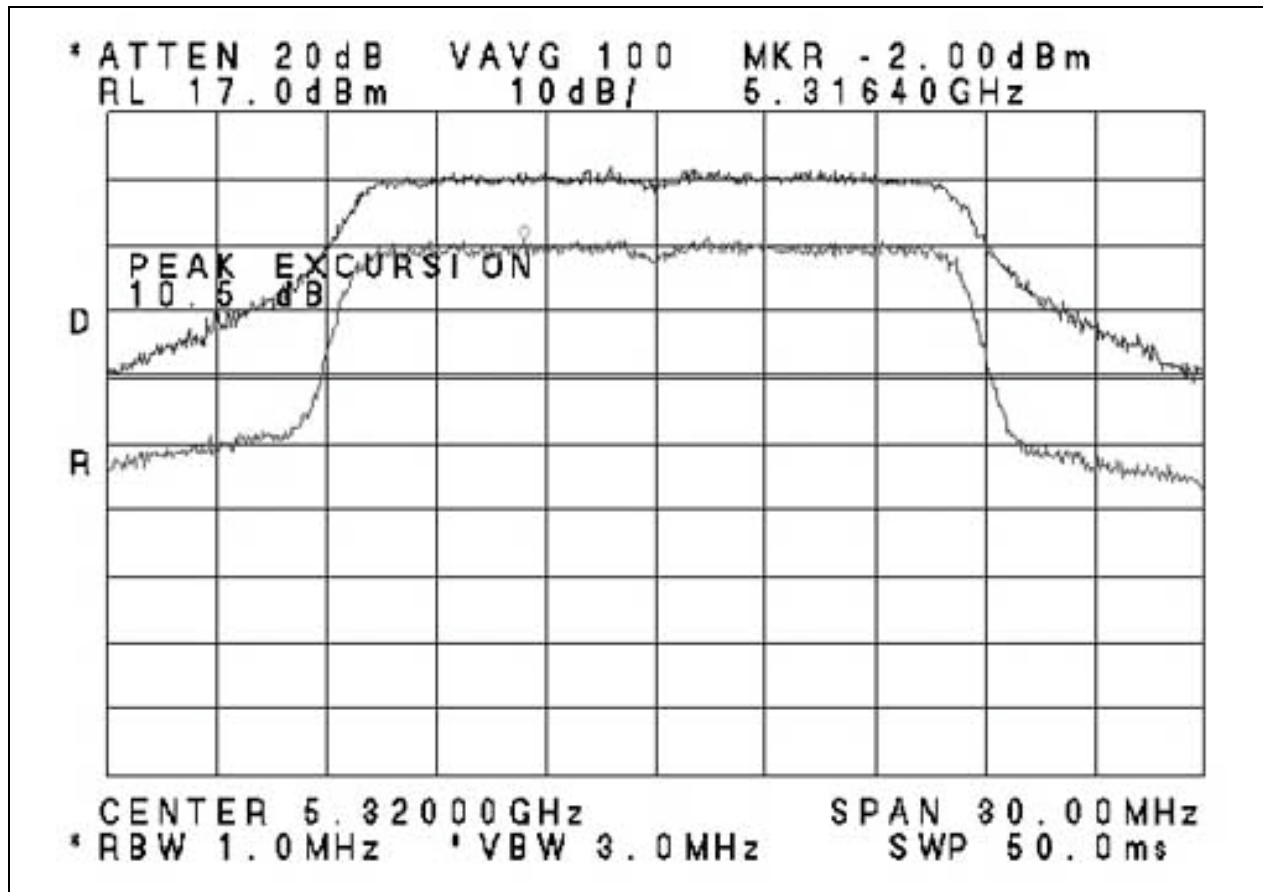
FCC 15.407(a)(6) PEAK EXCURSION LOW



**FCC 15.407(a)(6) PEAK EXCURSION MID**



**FCC 15.407(a)(6) PEAK EXCURSION HIGH**



## **FCC 15.407(b)(1) & (2) UNDESIRABLE EMISSIONS**

Note: Refer to 15.247/15.209 Section for emissions below 1 GHz.

Test Location: CKC Laboratories, Inc. • 5473A Clouds Rest • Mariposa, CA 95338 • 800-500-4362

Customer: **Digital Path**  
 Specification: **FCC 15.407(b)(1)&(2)**  
 Work Order #: **82775**  
 Test Type: **Maximized Emissions**  
 Equipment: **Askey Atheros Radio**  
 Manufacturer: **Digital Path**  
 Model: **Relay**  
 S/N: **111504-002**

Date: 11/17/2004  
 Time: 14:55:53  
 Sequence#: 54  
 Tested By: Randal Clark

### ***Test Equipment:***

| Function                          | S/N         | Calibration Date | Cal Due Date | Asset # |
|-----------------------------------|-------------|------------------|--------------|---------|
| HP 8566B SA                       | 2209A01404  | 02/26/2003       | 02/26/2005   | 00490   |
| HP 8566B SA Display               | 2403A08241  | 02/26/2003       | 02/26/2005   | 00489   |
| HP 83051A Preampl                 | 3332A00309  | 03/17/2003       | 03/17/2005   | 02115   |
| EMCO 3115 Horn Antenna            | 9006-3413   | 04/15/2003       | 04/25/2005   | 327     |
| Cable, WL Gore 2'                 | 149047      | 04/10/2003       | 04/10/2005   | P01527  |
| Cable, WL Gore                    | 149047      | 04/10/2003       | 04/10/2005   | P04301  |
| Cable, Andrews Hardline HF-005-20 | NA          | 06/03/2003       | 06/03/2005   | P04275  |
| HPF 3.5GHz                        | 84300-80038 | 03/18/2003       | 03/18/2005   | 01416   |
| Weinchel 10dB attenuator          | C8597       | 10/01/2004       | 10/01/2006   | P02139  |
| Weinchel 3dB attenuator           | C5338       | 10/01/2004       | 10/01/2006   | P01950  |
| SA_8564E                          | 3623A00539  | 08/02/2004       | 08/02/2006   | 01406   |
| ARA MWH-1826/B Horn Antenna       | 1005        | 11/05/2004       | 11/05/2006   | 02046   |
| HP 26-40GHz Horn Antenna          | 84125-80001 | 11/05/2004       | 11/05/2006   | 01414   |

### ***Equipment Under Test (\* = EUT):***

| Function             | Manufacturer | Model # | S/N        |
|----------------------|--------------|---------|------------|
| Askey Atheros Radio* | Digital Path | Relay   | 111504-002 |

### ***Support Devices:***

| Function            | Manufacturer | Model #      | S/N           |
|---------------------|--------------|--------------|---------------|
| Radio Power Supply  | Digital Path | CHMON v5.1   | 110804-001a   |
| Laptop Power Supply | Toshiba      | PA3049U-1ACA | 0003A0221552G |
| Support Computer    | Toshiba      | PS426U-0M151 | 50683063U     |

### ***Test Conditions / Notes:***

EUT is a wireless relay station for internet connectivity. EUT operates in the 2.4, 5.8 and 5.3GHz bands. EUT is operating in the 5.3GHz band. Modulation = 802.11a default (OFDM) Data Rate = 54Mbps Antenna = 18dBi Gain Directional Low Channel PCDAC = 1, Mid Channel PCDAC = 43, High Channel PCDAC = 42. Note power at lower channel reduced for band edge compliance. Frequency Range Investigated: 1-40GHz. Temperature: 17°C, Relative Humidity: 48%. RBW = 1MHz, VBW = 1MHz. Emissions measurements at the lower band edge integrated to a 1MHz RBW from 100kHz RBW. **No EUT emissions detected within 20dB of the limit above 8.2GHz.**

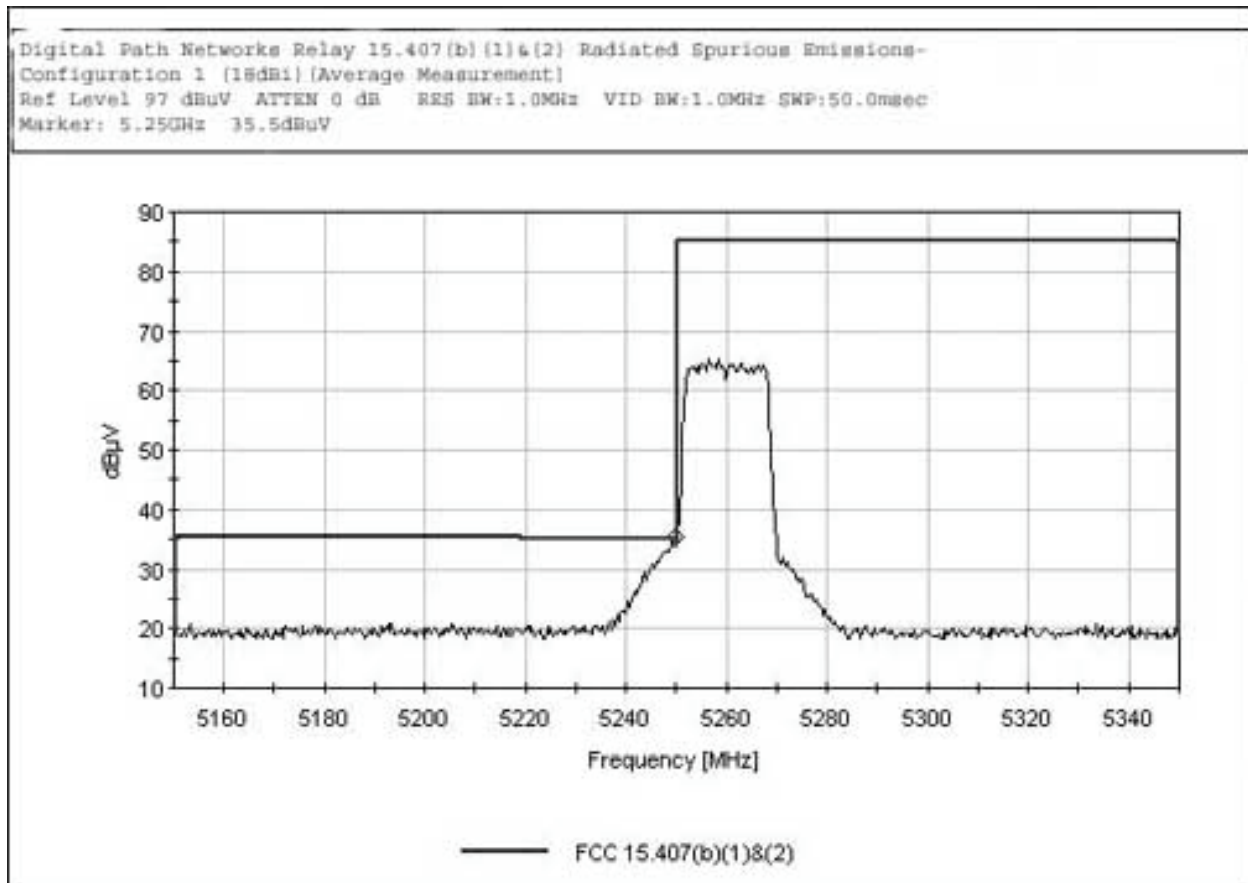
**Transducer Legend:**

|                          |                               |
|--------------------------|-------------------------------|
| T1=Horn AN 00327 1-18GHz | T2=AMP AN00941A 50GHz         |
| T3=Cable HF P01527       | T4=WL Gore SN 1065 AN P004301 |
| T5=Att 10dB AN02139      |                               |

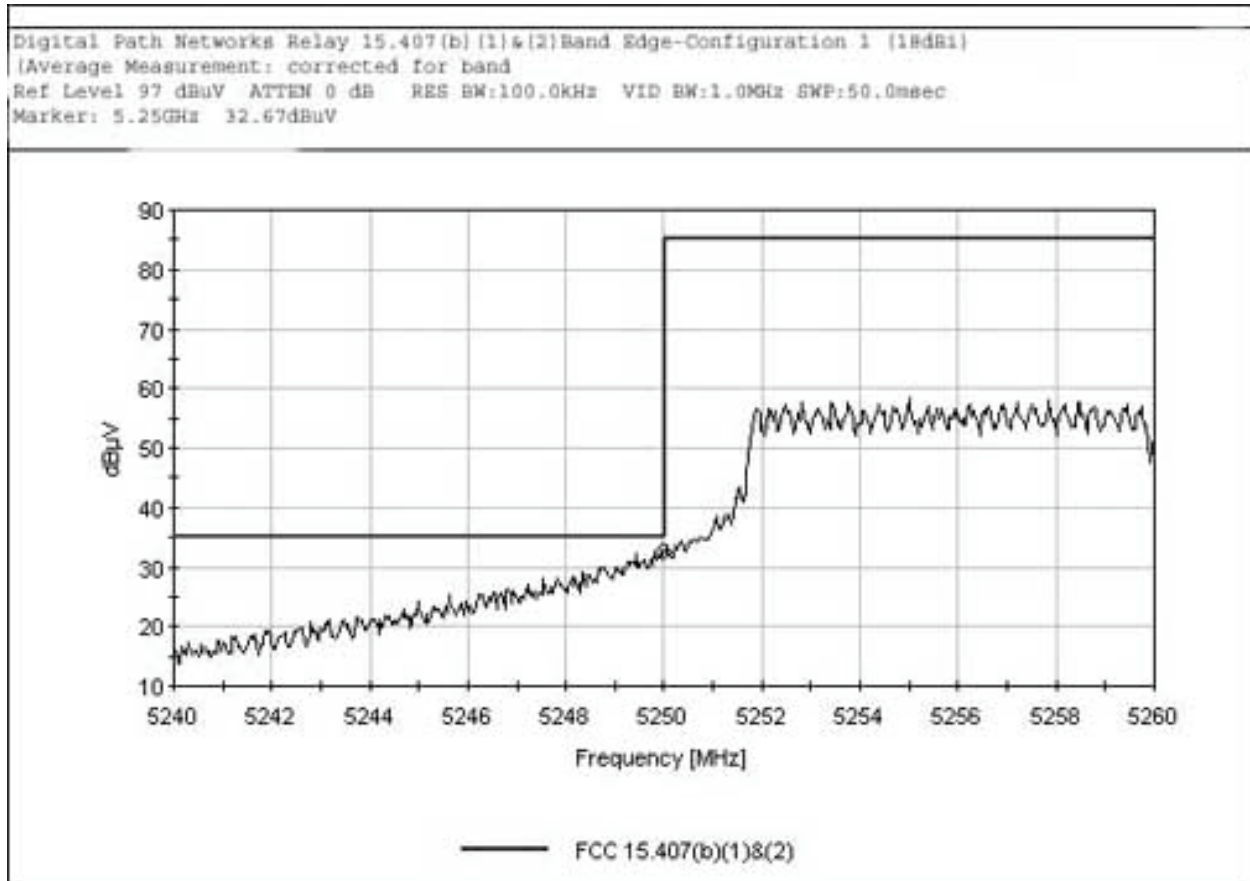
**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

| # | Freq<br>MHz          | Rdng<br>dBμV | T1<br>T5<br>dB | T2<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m                 | Margin<br>dB | Polar<br>Ant |
|---|----------------------|--------------|----------------|----------|----------|----------|---------------|----------------|--------------------------------|--------------|--------------|
| 1 | 5250.000M<br>Ave     | 35.0         | +33.9<br>+0.0  | +0.0     | +0.0     | +0.9     | +0.0          | 69.8           | 70.0                           | -0.2         | Verti        |
| ^ | 5250.000M            | 55.0         | +33.9<br>+0.0  | +0.0     | +0.0     | +0.9     | +0.0          | 89.8           | 70.0                           | +19.8        | Verti        |
| 3 | 5350.000M<br>Ave     | 32.3         | +34.1<br>+10.0 | -28.3    | +0.5     | +0.9     | +0.0          | 49.5           | 54.0                           | -4.5         | Verti        |
| ^ | 5350.000M            | 48.8         | +34.1<br>+10.0 | -28.3    | +0.5     | +0.9     | +0.0          | 66.0           | 54.0                           | +12.0        | Verti        |
| 5 | 5150.000M<br>Ambient | 31.0         | +33.7<br>+10.0 | -28.6    | +0.6     | +0.9     | +0.0          | 47.6           | 54.0<br>Ambient Noise<br>Floor | -6.4         | Verti        |
| 6 | 5250.000M<br>Ave     | 32.8         | +33.9<br>+10.0 | -28.4    | +0.6     | +0.9     | +0.0          | 49.8           | 70.0                           | -20.2        | Horiz        |
| ^ | 5250.000M            | 51.7         | +33.9<br>+10.0 | -28.4    | +0.6     | +0.9     | +0.0          | 68.7           | 70.0                           | -1.3         | Horiz        |

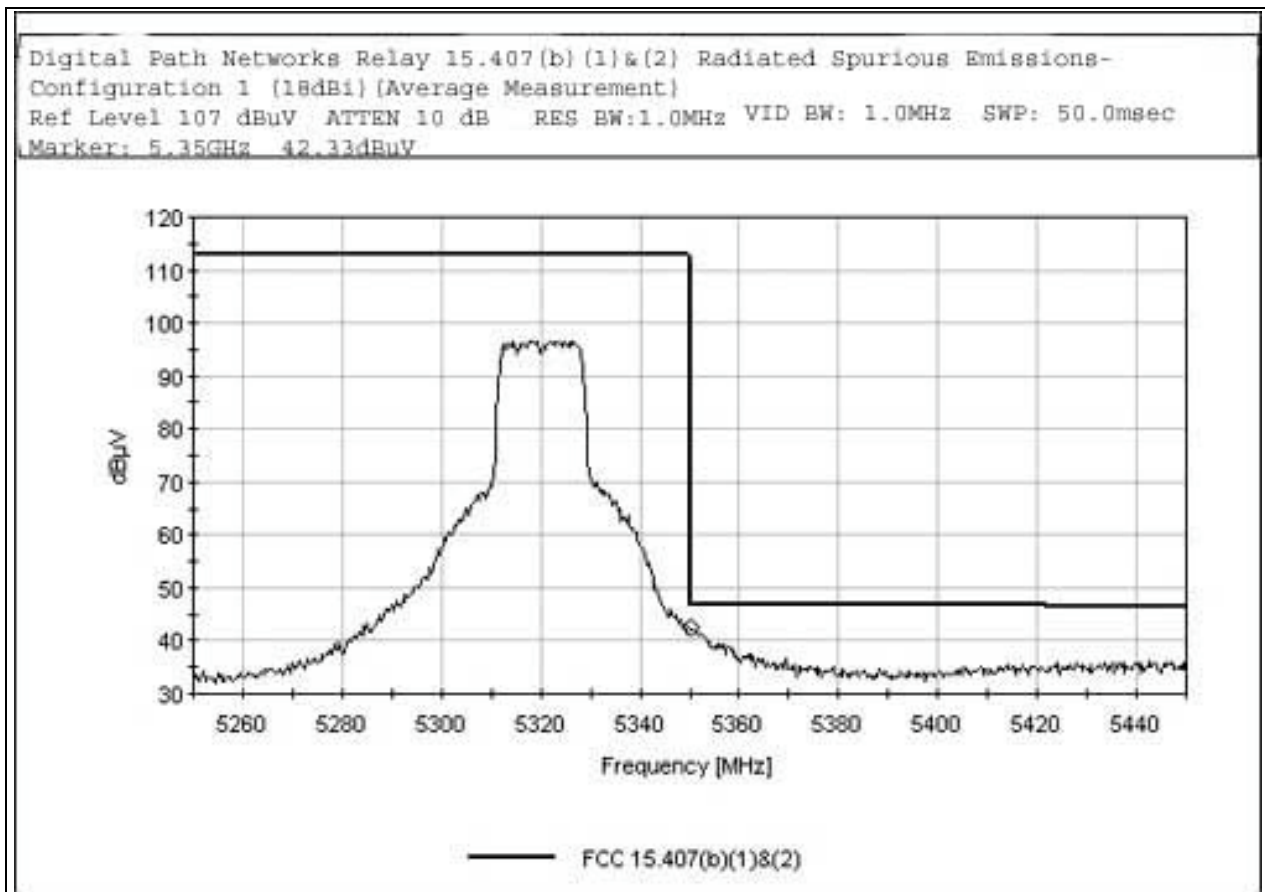
## FCC 15.407(b)(1) & (2) RADIATED EMISSIONS CONFIGURATION 1 LOW AVERAGE PLOT 1



**FCC 15.407(b)(1) & (2) RADIATED EMISSIONS CONFIGURATION 1**  
**LOW AVERAGE PLOT 2**



## FCC 15.407(b)(1) & (2) RADIATED EMISSIONS CONFIGURATION 1 HIGH AVERAGE



**APPENDIX A**

**TEST SETUP PHOTOGRAPHS**

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Configuration 1

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Configuration 2

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**

