



**DAVIS INSTRUMENTS TEST REPORT**

**FOR THE**

**VANTAGE PRO 2 WIRELESS REPEATER, 7626, 7627, 7653 & 7654**

**FCC PART 15 SUBPART C SECTIONS 15.207, 15.209, 15.247,**  
**SUBPART B SECTION 15.109 CLASS B AND RSS-210**

**COMPLIANCE**

**DATE OF ISSUE: JUNE 1, 2005**

**PREPARED FOR:**

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Date of test: May 5-27, 2005

**Report No.: FC05-023**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** May 5-27, 2005

**DATE OF RECEIPT:** May 5, 2005

**MANUFACTURER:** Davis Instruments  
3465 Diablo Avenue  
Hayward, CA 94545

**REPRESENTATIVE:** Perry Dillon

**TEST LOCATION:** CKC Laboratories, Inc.  
5046 Sierra Pines Drive  
Mariposa, CA 95338

**TEST METHOD:** ANSI C63.4 (2003), DA 02-2138 August 30, 2002, DA 00-705 March 30, 2000, KDB Publication No. 558074 and RSS-212

**PURPOSE OF TEST:** To demonstrate the compliance of the Vantage Pro 2 Wireless Repeater, 7626, 7627, 7653 & 7654, with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209, 15.247, Subpart B Section 15.109 Class A and RSS-210 devices.

## FCC TO CANADA STANDARD CORRELATION MATRIX

| Canadian Standard | Canadian Section | FCC Standard | FCC Section     | Test Description                         |
|-------------------|------------------|--------------|-----------------|------------------------------------------|
| RSS 210           | 5.5              | 47CFR        | 15.203          | Antenna Connector Requirements           |
| RSS 210           | 6.2.1            | 47CFR        | 15.209          | General Radiated Emissions Requirement   |
| RSS 210           | 6.3              | 47CFR        | 15.205          | Restricted Bands of Operation            |
| RSS 210           | 6.4              | 47CFR        | 15.215(c)       | Frequency Stability Recommendation       |
| RSS 210           | 6.5              | 47CFR        | 15.35(c)        | Pulsed Operation                         |
| RSS 210           | 6.6              | 47CFR        | 15.207          | AC Mains Conducted Emissions Requirement |
| RSS 210           | 6.2.2(o)(a1)     | 47CFR        | 15.247(a)(1)    | Minimum Channel Bandwidth                |
| RSS 210           | 6.2.2(o)(a1)     | 47CFR        | 15.247(g)       | Hopping Sequence                         |
| RSS 210           | 6.2.2(o)(a1)     | 47CFR        | 15.247(h)       | Incorporation of Intelligence            |
| RSS 210           | 6.2.2(o)(a2)     | 47CFR        | 15.247(a)(1)(i) | Average Time of Occupancy                |
| RSS 210           | 6.2.2(o)(a2)     | 47CFR        | 15.247(b)(2)    | RF Power Output                          |
| RSS 210           | 6.2.2(o)(e1)     | 47CFR        | 15.247(c )      | Spurious Emissions                       |
|                   | IC 3082-D        |              | 784962          | Site File No.                            |

### Additional Testing Required Per RSS 210

| Para  | Description   | Application | Mode / channel | Test Procedure |
|-------|---------------|-------------|----------------|----------------|
| 5.9.1 | 99% Bandwidth | ANT         | 4<br>LMH       | RSS 210        |

## CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

## APPROVALS

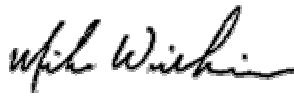
Steve Behm, Director of Engineering Services

### QUALITY ASSURANCE:



Joyce Walker, Quality Assurance Administrative Manager

### TEST PERSONNEL:



Mike Wilkinson, Lab Manager



Randy Clark, EMC Engineer

### FCC 15.31(e) Voltage Variations

| 15.247(b)(1)/15.31(e) Voltage Variation on Peak Power |                                       |                                        |                                        |                       |
|-------------------------------------------------------|---------------------------------------|----------------------------------------|----------------------------------------|-----------------------|
| FREQUENCY<br>MHz                                      | CORRECTED<br>READING<br>dBμV/m<br>85% | CORRECTED<br>READING<br>dBμV/m<br>100% | CORRECTED<br>READING<br>dBμV/m<br>115% | SPEC<br>LIMIT<br>dBμV |
| 902.363                                               | 112.2                                 | 112.3                                  | 112.3                                  | 137.0                 |
| 914.907                                               | 112.3                                 | 112.3                                  | 112.3                                  | 137.0                 |
| 927.450                                               | 112.1                                 | 112.1                                  | 112.1                                  | 137.0                 |

### FCC 15.31(m) Number Of Channels

This device was tested on three channels.

### FCC 15.33(a) Frequency Ranges Tested

15.109 Radiated Emissions: 30 MHz – 10 GHz

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209/15.247 Radiated Emissions: 9 kHz – 10 GHz

| FCC SECTION 15.35:<br>ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE |                     |                  |                   |
|-----------------------------------------------------------------------|---------------------|------------------|-------------------|
| TEST                                                                  | BEGINNING FREQUENCY | ENDING FREQUENCY | BANDWIDTH SETTING |
| CONDUCTED EMISSIONS                                                   | 150 kHz             | 30 MHz           | 9 kHz             |
| RADIATED EMISSIONS                                                    | 9 kHz               | 150 kHz          | 200 Hz            |
| RADIATED EMISSIONS                                                    | 150 kHz             | 30 MHz           | 9 kHz             |
| RADIATED EMISSIONS                                                    | 30 MHz              | 1000 MHz         | 120 kHz           |
| RADIATED EMISSIONS                                                    | 1000 MHz            | 10 GHz           | 1 MHz             |

### FCC 15.203 Antenna Requirements

The 7626 and 7627 model antennas are an integral part of the EUT and are non-removable; therefore the EUTs comply with Section 15.203 of the FCC rules. The 7653 and 7654 external antennas use reverse polarity TNC; therefore the EUTs comply with Section 15.203 of the FCC rules.

### Eut Operating Frequency

The EUT was operating at 902-928 MHz.

## **EQUIPMENT UNDER TEST (EUT) DESCRIPTION**

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

The transmitter is the same for all of the following models:

7626 has an integral antenna with AC power

7627 has an integral antenna with solar power

7653 has an external antenna with TNC connection with AC power

7654 has an external antenna with TNC connection with solar power

## **EQUIPMENT UNDER TEST**

### **Vantage Pro 2 Wireless Repeater**

Manuf: Davis Instruments  
Model: 762y  
Serial: Davis-762y-05  
FCC ID: IR2DWW765Y (pending)

### **Vantage Pro 2 Wireless Repeater**

Manuf: Davis Instruments  
Model: 765x  
Serial: Davis-765x-05  
FCC ID: IR2DWW765Y (pending)

## **PERIPHERAL DEVICES**

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

### **Power Adapter**

Manuf: Davis Instruments  
Model: 6625  
Serial: NA  
FCC ID: NA

## REPORT OF MEASUREMENTS

The following tables report the six highest worst case levels recorded during the tests performed on the EUT. All readings taken are peak readings unless otherwise noted. The data sheets from which these tables were compiled are contained in Appendix C.

| Table 1: FCC 15.109 Six Highest Radiated Emission Levels |                          |                    |           |             |    |                                |                         |              |       |
|----------------------------------------------------------|--------------------------|--------------------|-----------|-------------|----|--------------------------------|-------------------------|--------------|-------|
| FREQUENCY<br>MHz                                         | METER<br>READING<br>dBμV | CORRECTION FACTORS |           |             |    | CORRECTED<br>READING<br>dBμV/m | SPEC<br>LIMIT<br>dBμV/m | MARGIN<br>DB | NOTES |
|                                                          |                          | Ant<br>dB          | Amp<br>dB | Cable<br>dB | dB |                                |                         |              |       |
| 85.005                                                   | 34.6                     | 7.4                | -26.9     | 2.1         |    | 17.2                           | 40.0                    | -22.8        | V     |
| 902.000                                                  | 18.3                     | 22.8               | -27.0     | 8.1         |    | 22.2                           | 46.0                    | -23.8        | H     |
| 902.000                                                  | 18.0                     | 22.8               | -27.0     | 8.1         |    | 21.9                           | 46.0                    | -24.1        | H     |
| 915.000                                                  | 18.2                     | 23.0               | -27.0     | 8.2         |    | 22.4                           | 46.0                    | -23.6        | V     |
| 915.000                                                  | 17.0                     | 23.0               | -27.0     | 8.2         |    | 21.2                           | 46.0                    | -24.8        | H     |
| 928.000                                                  | 17.2                     | 23.2               | -27.0     | 8.2         |    | 21.6                           | 46.0                    | -24.4        | H     |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B

NOTES: H = Horizontal Polarization  
V = Vertical Polarization

COMMENTS: EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous. Receive Antenna configuration: External Connector Terminated. Frequency Range Investigated: 30MHz to 10GHz. Temperature: 20°C, Relative Humidity: 58%. Ambient levels recorded in the 902-928MHz band. **No EUT signals detected within 20dB of the limit.**



**Table 2: FCC 15.111 Six Highest Radiated Emission Levels**

| FREQUENCY<br>MHz | METER<br>READING<br>dBμV | CORRECTION FACTORS |  |             |  | CORRECTED<br>READING<br>dBμV/m | SPEC<br>LIMIT<br>dBμV/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------|--------------------|--|-------------|--|--------------------------------|-------------------------|--------------|-------|
|                  |                          | Ant<br>dB          |  | Cable<br>dB |  |                                |                         |              |       |
| 1828.828         | 39.5                     | 0.0                |  | 0.9         |  | 40.4                           | 50.0                    | -9.6         | N     |
| 2417.166         | 39.5                     | 0.0                |  | 1.0         |  | 40.5                           | 50.0                    | -9.5         | N     |
| 3658.157         | 39.3                     | 0.0                |  | 1.3         |  | 40.6                           | 50.0                    | -9.4         | N     |
| 6928.127         | 31.0                     | 0.0                |  | 1.9         |  | 32.9                           | 50.0                    | -17.1        | N     |
| 7106.305         | 31.4                     | 0.0                |  | 1.9         |  | 33.3                           | 50.0                    | -16.7        | N     |
| 7316.515         | 44.2                     | 0.0                |  | 1.9         |  | 46.1                           | 50.0                    | -3.9         | N     |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart B Section 15.111  
Test Distance: 3 Meters

NOTES: N = No Polarization

COMMENTS: EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous. Receive Antenna configuration: External Connector. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 20°C, Relative Humidity: 58%.

**Table 3: FCC 15.207 Six Highest Conducted Emission Levels**

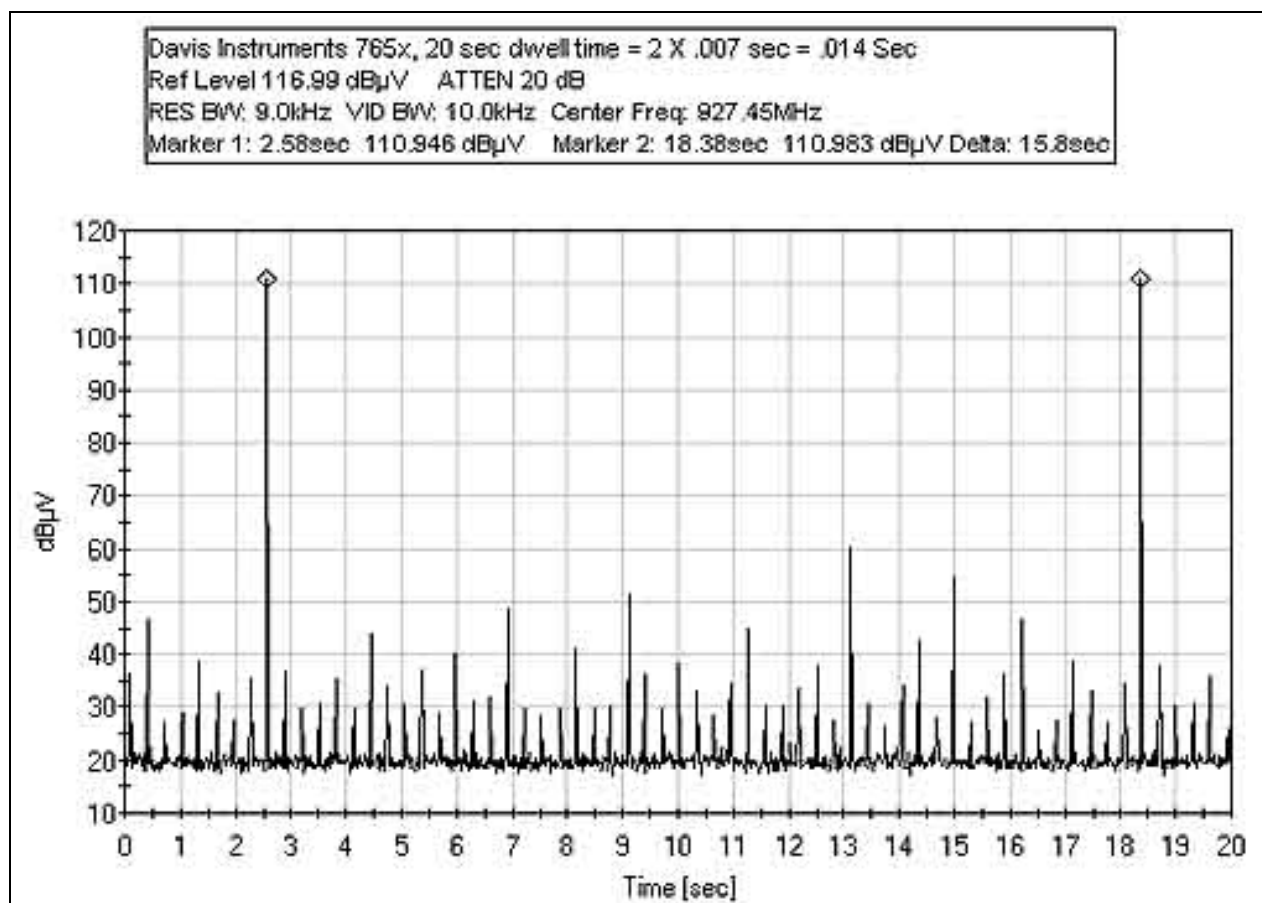
| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |           |             |  | CORRECTED<br>READING<br>dB $\mu$ V | SPEC<br>LIMIT<br>dB $\mu$ V | MARGIN<br>dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|--|------------------------------------|-----------------------------|--------------|-------|
|                  |                                | Lisn<br>dB         | HPF<br>dB | Cable<br>dB |  |                                    |                             |              |       |
| 0.330347         | 30.5                           | 0.3                | 0.1       | 0.1         |  | 31.0                               | 49.4                        | -18.4        | W     |
| 0.336892         | 28.3                           | 0.3                | 0.1       | 0.1         |  | 28.8                               | 49.3                        | -20.5        | W     |
| 0.339801         | 28.5                           | 0.3                | 0.1       | 0.1         |  | 29.0                               | 49.2                        | -20.2        | W     |
| 0.342710         | 28.9                           | 0.3                | 0.1       | 0.1         |  | 29.4                               | 49.1                        | -19.7        | W     |
| 0.355072         | 28.9                           | 0.4                | 0.1       | 0.1         |  | 29.5                               | 48.8                        | -19.3        | W     |
| 0.373252         | 27.3                           | 0.4                | 0.1       | 0.1         |  | 27.9                               | 48.4                        | -20.5        | W     |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.207

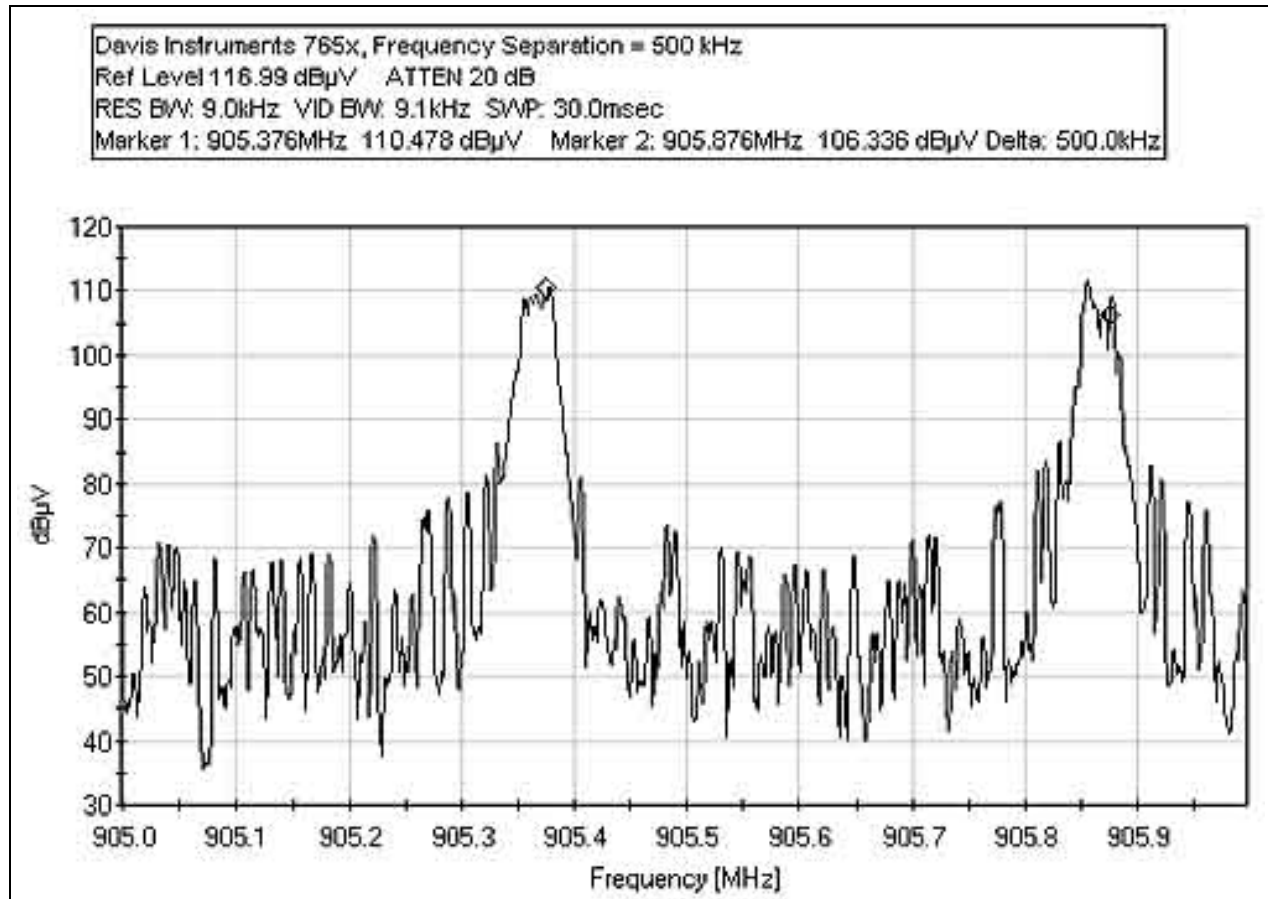
NOTES: W = White Lead

COMMENTS: EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Normal Mode. Antenna configuration: Integral Antenna. Frequency Range Investigated: 150kHz - 30MHz; Temperature: 23°C, Relative Humidity: 52%.

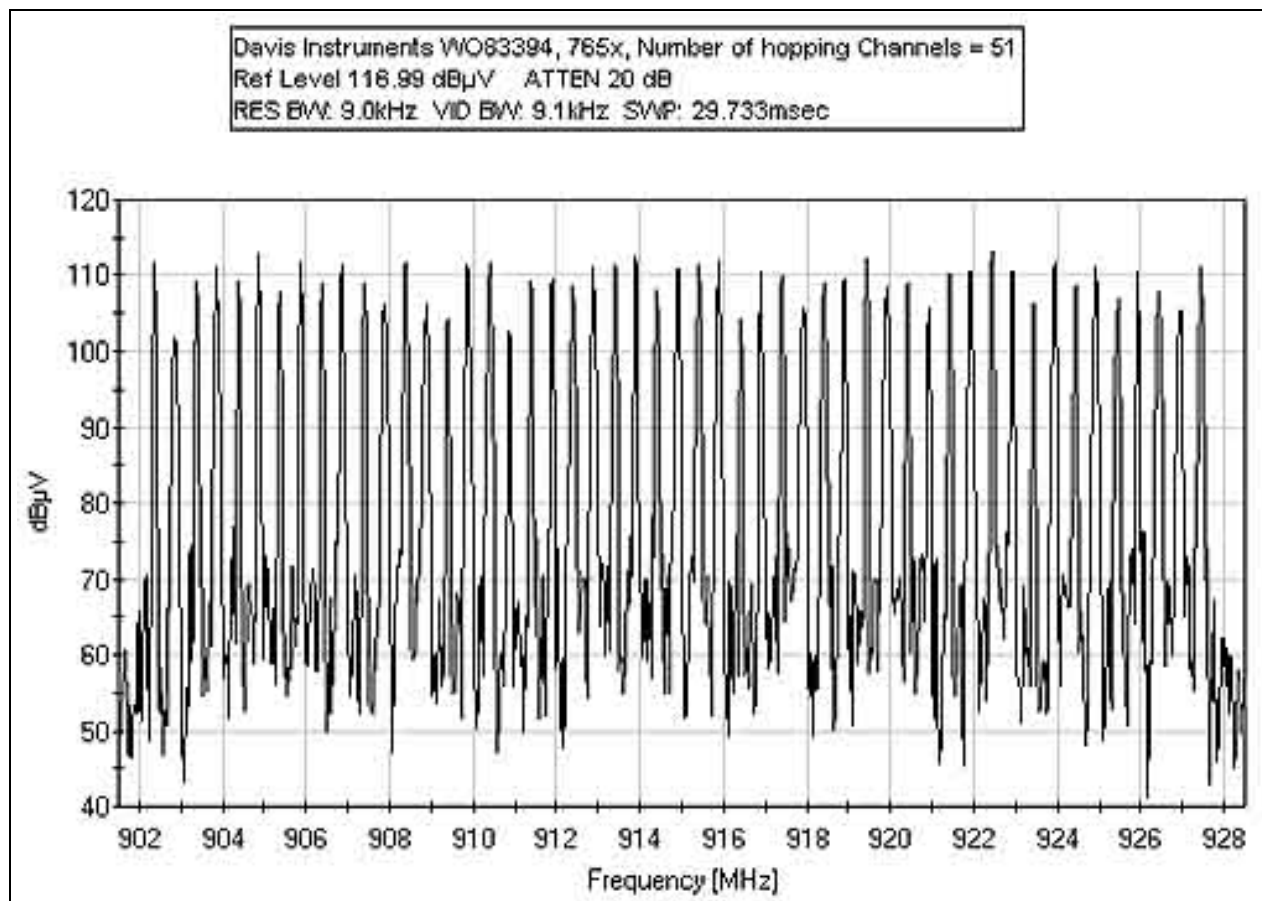
### FCC 15.247(a) AVERAGE TIME OF OCCUPANCY



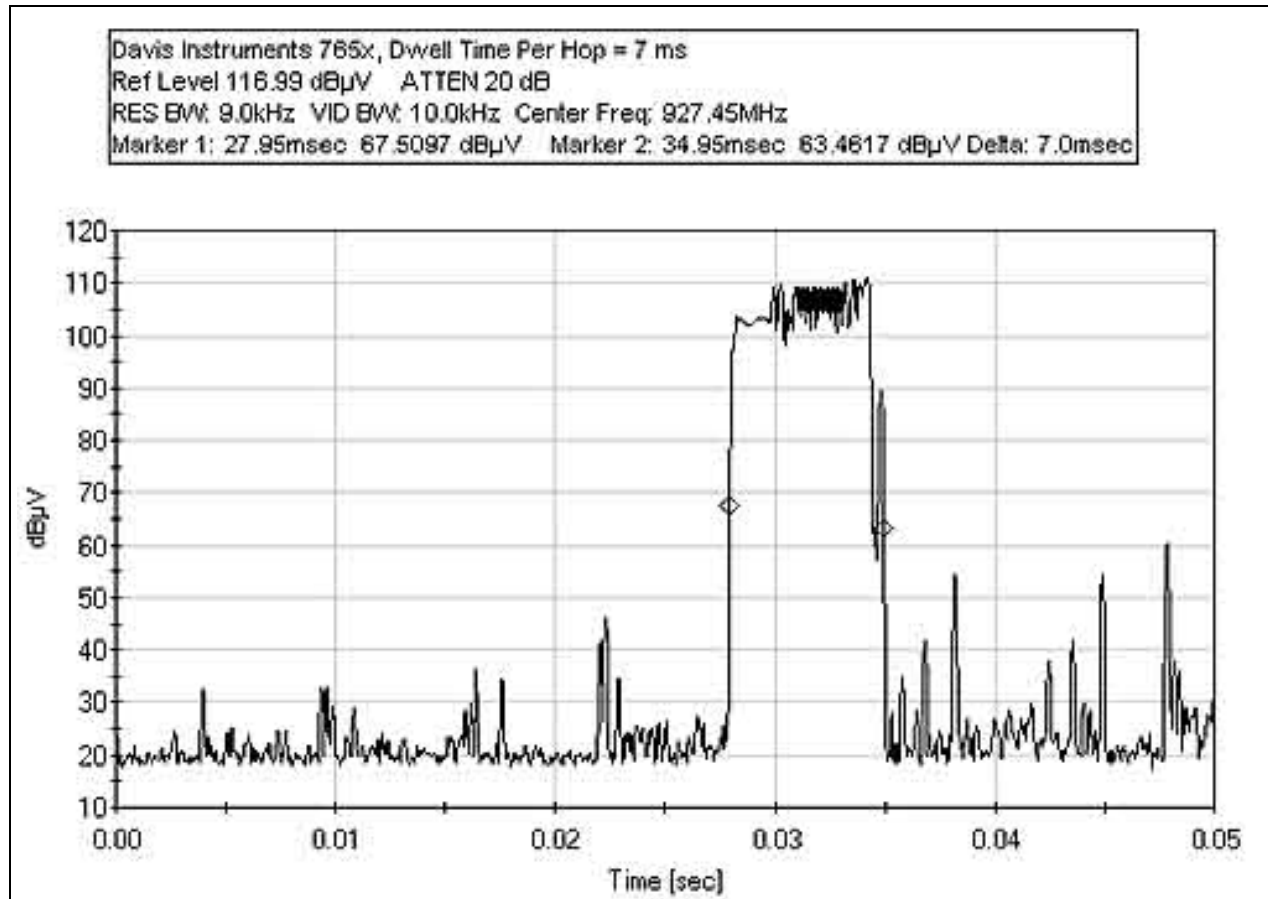
## FCC 15.247(a)(1) FREQUENCY SEPARATION



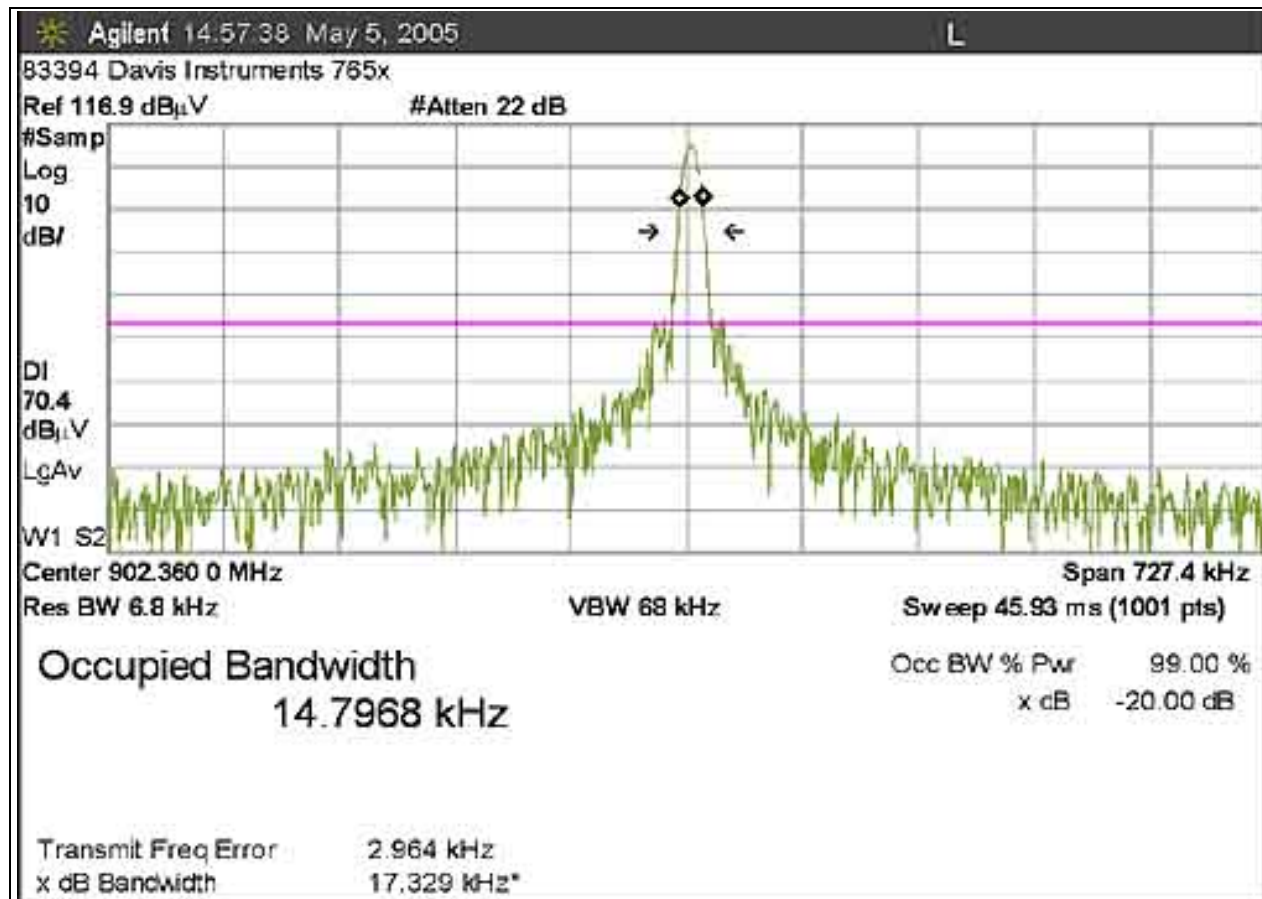
## FCC 15.247(a)(1) NUMBER OF HOPPING CHANNELS



**FCC 15.247(a)(1) DWELL TIME PER HOP TIME**

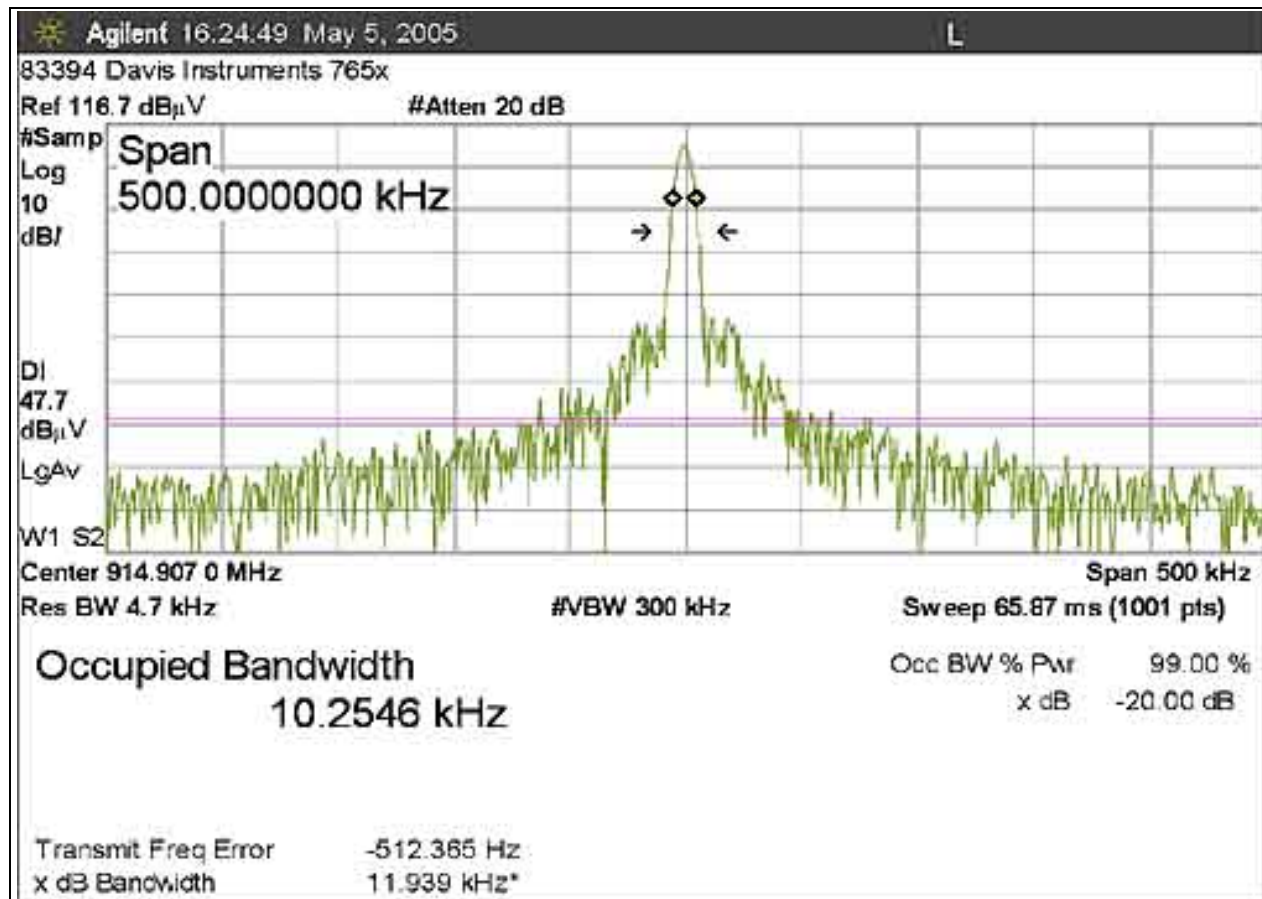


**FCC 15.247(a)/RSS-210 OCCUPIED BANDWIDTH LOW**



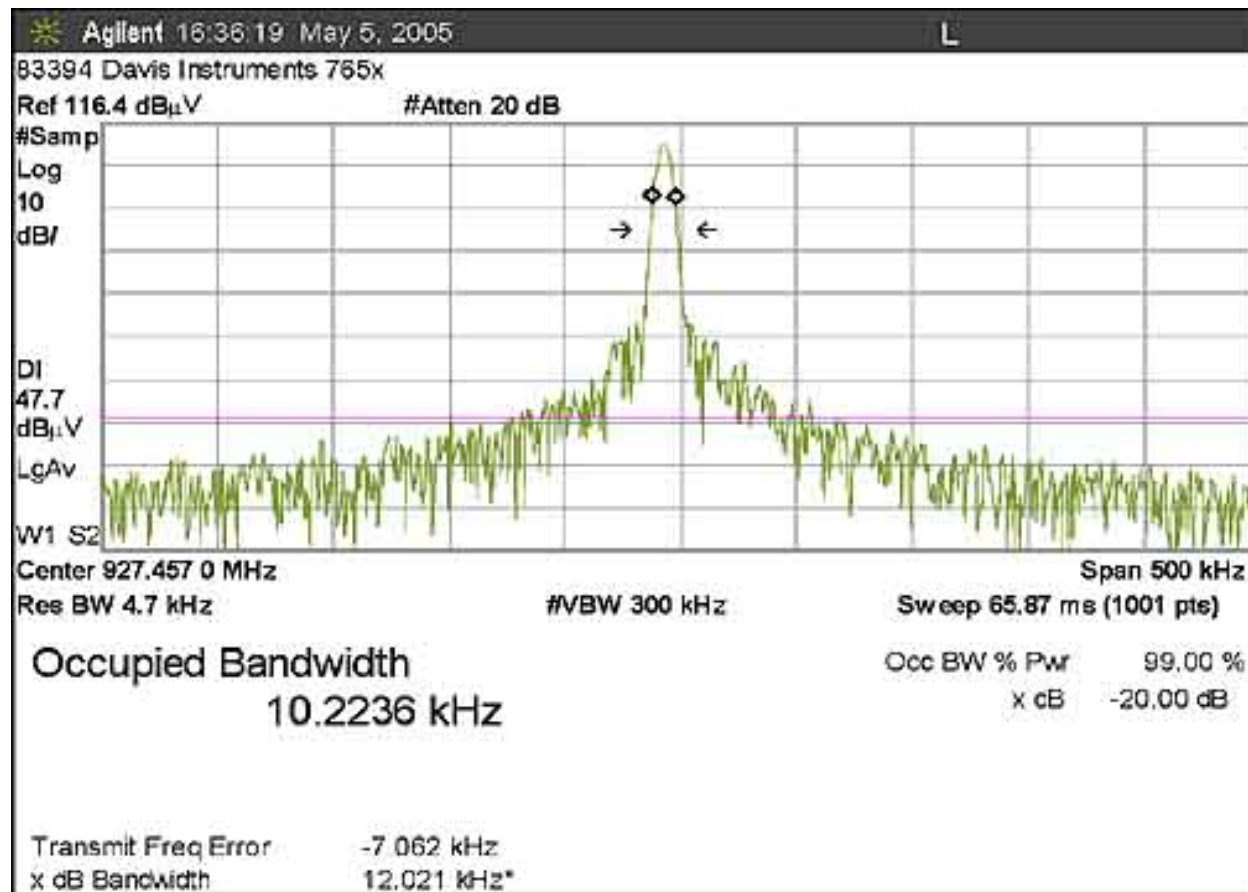


**FCC 15.247(a)/RSS-210 OCCUPIED BANDWIDTH MID**





# FCC 15.247(a)/RSS-210 OCCUPIED BANDWIDTH HIGH



**Table 4: FCC 15.247(b)(2) Fundamental Emission Levels**

| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |           |             |            | CORRECTED<br>READING<br>dB $\mu$ V/m | SPEC<br>LIMIT<br>dB $\mu$ V/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
|                  |                                | Ant<br>dB          | Amp<br>dB | Cable<br>dB | Dist<br>dB |                                      |                               |              |       |
| 902.363          | 111.9                          | 0.0                |           | 0.6         |            | 112.5                                | 137.0                         | -24.5        | N     |
| 914.900          | 111.8                          | 0.0                |           | 0.6         |            | 112.4                                | 137.0                         | -24.6        | N     |
| 927.449          | 111.5                          | 0.0                |           | 0.6         |            | 112.1                                | 137.0                         | -24.9        | N     |

Test Method: ANSI C63.4 (2001)  
Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(2)  
Test Distance: No Distance

NOTES: N = No Polarization

COMMENTS: EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: External Connector. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 58%.

**Table 5: FCC 15.247(b)(3) Six Highest Radiated Emission Levels**

| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |           |             |  | CORRECTED<br>READING<br>dB $\mu$ V/m | SPEC<br>LIMIT<br>dB $\mu$ V/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|--|--------------------------------------|-------------------------------|--------------|-------|
|                  |                                | Ant<br>dB          | Amp<br>dB | Cable<br>dB |  |                                      |                               |              |       |
| 902.365          | 83.1                           | 22.8               | 0.0       | 8.1         |  | 114.0                                | 127.0                         | -13.0        | V-2   |
| 902.366          | 104.5                          | 22.8               | -27.0     | 8.1         |  | 108.4                                | 127.0                         | -18.6        | V-1   |
| 914.908          | 103.5                          | 23.0               | -27.0     | 8.2         |  | 107.7                                | 127.0                         | -19.3        | V-1   |
| 914.910          | 82.7                           | 23.0               | 0.0       | 8.2         |  | 113.9                                | 127.0                         | -13.1        | V-2   |
| 927.450          | 103.5                          | 23.2               | -27.0     | 8.2         |  | 107.9                                | 127.0                         | -19.1        | V-1   |
| 927.453          | 82.1                           | 23.2               | 0.0       | 8.2         |  | 113.5                                | 127.0                         | -13.5        | V-2   |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(3)  
Test Distance: 3 Meters

NOTES: V = Vertical Polarization  
1 = Omni Antenna  
2 = Yagi Antenna  
3 = Integral Antenna

COMMENTS: EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: Integral (dedicated), External Yagi and External Omni. Frequency Range Investigated: Carrier. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%

**Table 6: FCC 15.247(c)/15.209 Six Highest OATS Radiated Emission Levels**

| FREQUENCY<br>MHz | METER<br>READING<br>dBμV | CORRECTION FACTORS |           |             |  | CORRECTED<br>READING<br>dBμV/m | SPEC<br>LIMIT<br>dBμV/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------|--------------------|-----------|-------------|--|--------------------------------|-------------------------|--------------|-------|
|                  |                          | Ant<br>dB          | Amp<br>dB | Cable<br>dB |  |                                |                         |              |       |
| 2707.095         | 46.5                     | 30.1               | -34.4     | 8.4         |  | 50.6                           | 54.0                    | -3.4         | VA    |
| 2707.100         | 40.0                     | 30.1               | -34.4     | 8.4         |  | 44.1                           | 54.0                    | -9.9         | HA    |
| 2744.680         | 41.2                     | 30.3               | -34.4     | 8.5         |  | 45.6                           | 54.0                    | -8.4         | VA    |
| 2782.300         | 44.3                     | 30.4               | -34.4     | 8.5         |  | 48.8                           | 54.0                    | -5.2         | VA    |
| 2782.325         | 45.1                     | 30.4               | -34.4     | 8.5         |  | 49.6                           | 54.0                    | -4.4         | VA    |
| 2782.400         | 44.4                     | 30.4               | -34.4     | 8.5         |  | 48.9                           | 54.0                    | -5.1         | H     |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)/15.209  
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
V = Vertical Polarization  
A = Average Reading

COMMENTS: EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: Integral (dedicated), External Yagi and External Omni. Frequency Range Investigated: 9kHz to 10 GHz. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%. Where average readings apply, a dwell time correction factor is applied in accordance with DA 00-705  $20 \cdot \log(Dwell/100ms)$ . Dwell time per hop is 7ms, therefore  $CF = 20 \cdot \log(7ms/100ms) = -23.1dB$ . This table represents testing of the integral, Yagi and Omni antennas, but all the highest readings came from the integral antenna.

**Table 7: FCC 15.247(c) Six Highest Antenna Conducted Emission Levels**

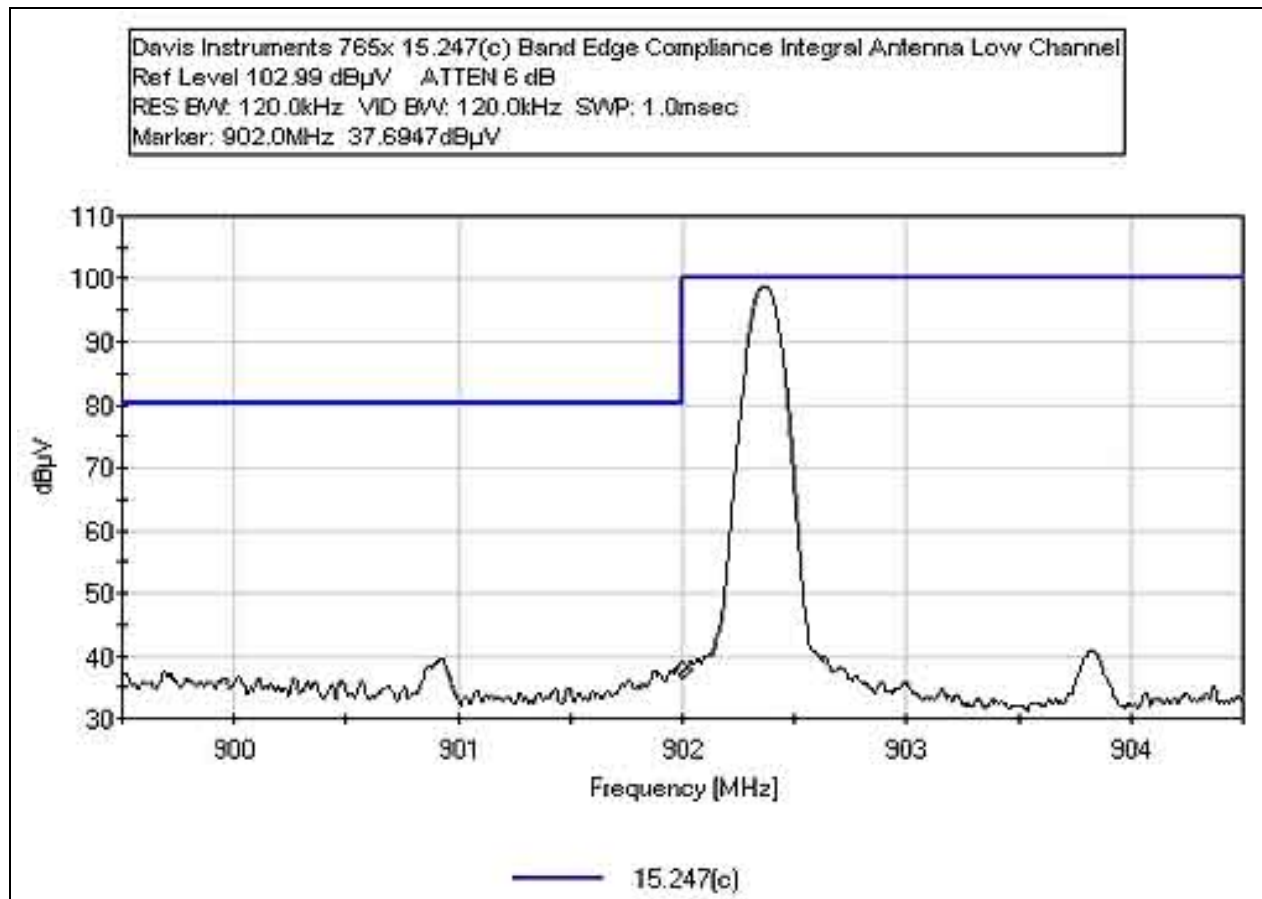
| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |  |             |  | CORRECTED<br>READING<br>dB $\mu$ V/m | SPEC<br>LIMIT<br>dB $\mu$ V/m | MARGIN<br>DB | NOTES |
|------------------|--------------------------------|--------------------|--|-------------|--|--------------------------------------|-------------------------------|--------------|-------|
|                  |                                | Ant<br>dB          |  | Cable<br>dB |  |                                      |                               |              |       |
| 1804.804         | 52.8                           | 0.0                |  | 0.9         |  | 53.7                                 | 92.5                          | -38.8        | N-1   |
| 1829.829         | 52.4                           | 0.0                |  | 0.9         |  | 53.3                                 | 92.5                          | -39.2        | N-2   |
| 1854.854         | 52.5                           | 0.0                |  | 0.9         |  | 53.4                                 | 92.5                          | -39.1        | N-3   |
| 2468.467         | 65.8                           | 0.0                |  | 1.0         |  | 66.8                                 | 92.5                          | -25.7        | N-3   |
| 2478.477         | 62.2                           | 0.0                |  | 1.0         |  | 63.2                                 | 92.5                          | -29.3        | N-3   |
| 2706.705         | 50.4                           | 0.0                |  | 1.1         |  | 51.5                                 | 92.5                          | -41.0        | N-1   |

Test Method: ANSI C63.4 (2003)  
Spec Limit: FCC Part 15 Subpart C Section 15.247(c)  
Test Distance: No Distance

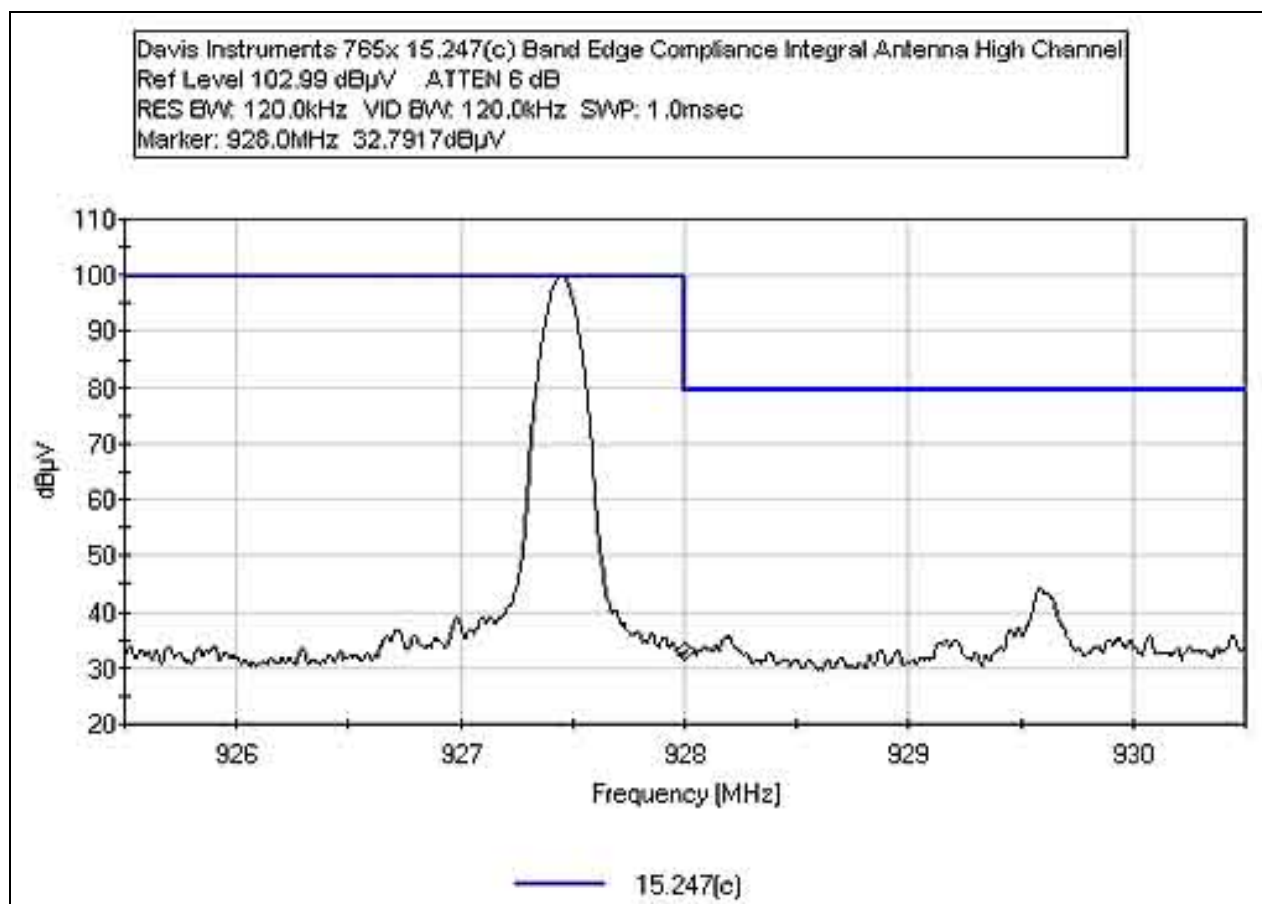
NOTES:  
N = No Polarization  
V = Vertical Polarization  
1 = Channel 0  
2 = Channel 25  
3 = Channel 50

COMMENTS: EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated, Channel 0 (Low). Antenna configuration: External Connector. Frequency Range Investigated: 1 MHz to 10 GHz. Temperature: 20°C, Relative Humidity: 58%.

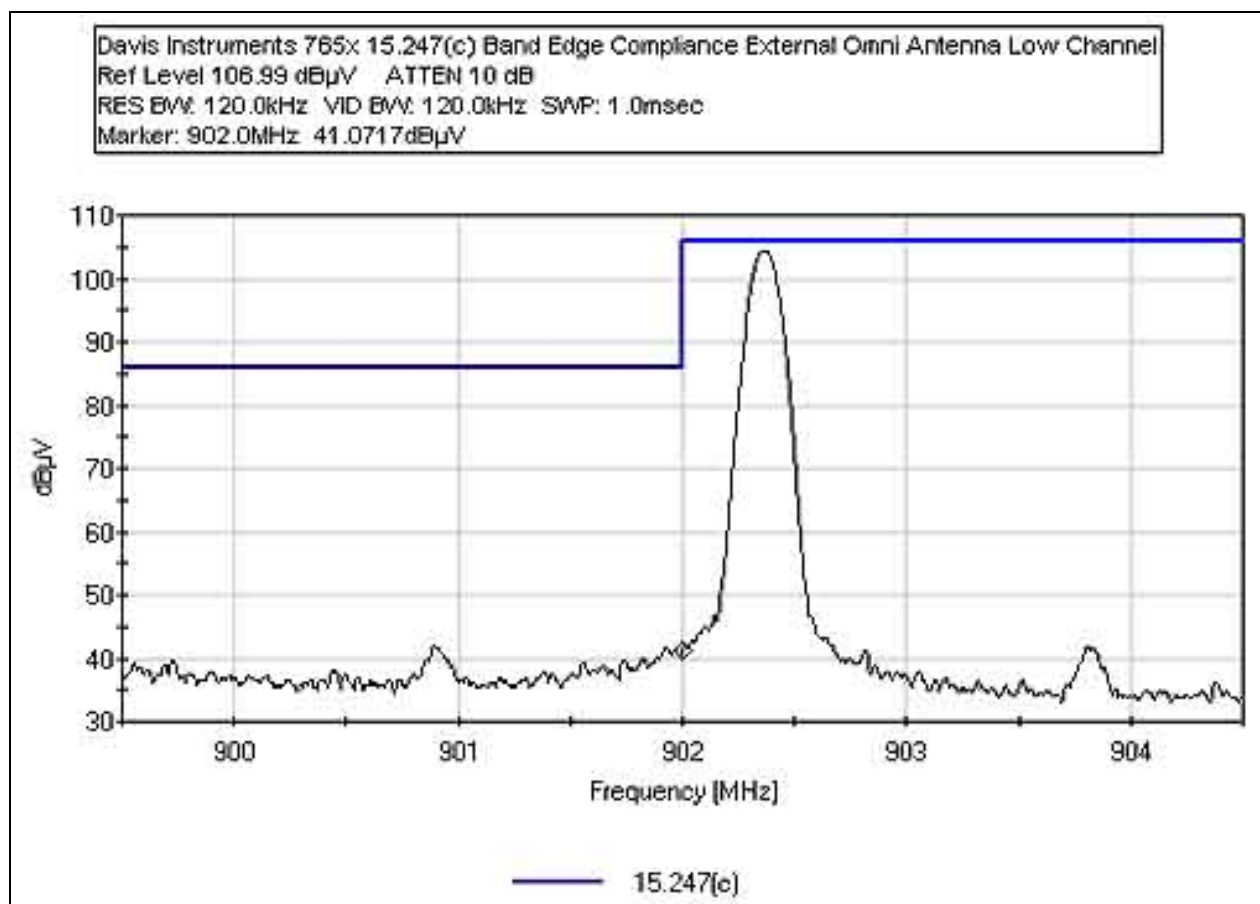
## FCC 15.247(c) BAND EDGE INTEGRAL ANTENNA LOW CHANNEL



**FCC 15.247(c) BAND EDGE INTEGRAL ANTENNA HIGH CHANNEL**

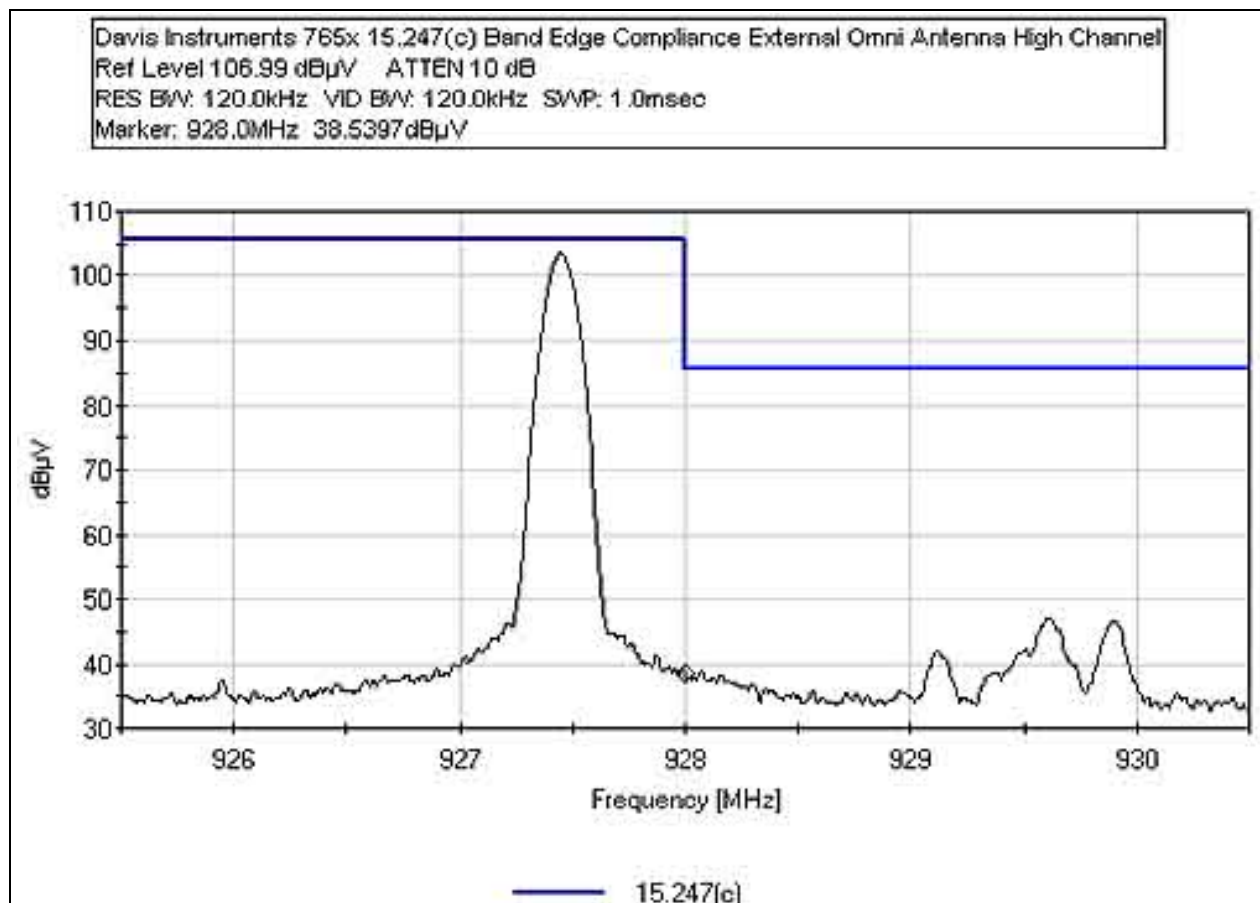


**FCC 15.247(c) BAND EDGE EXTERNAL OMNI ANTENNA LOW CHANNEL**

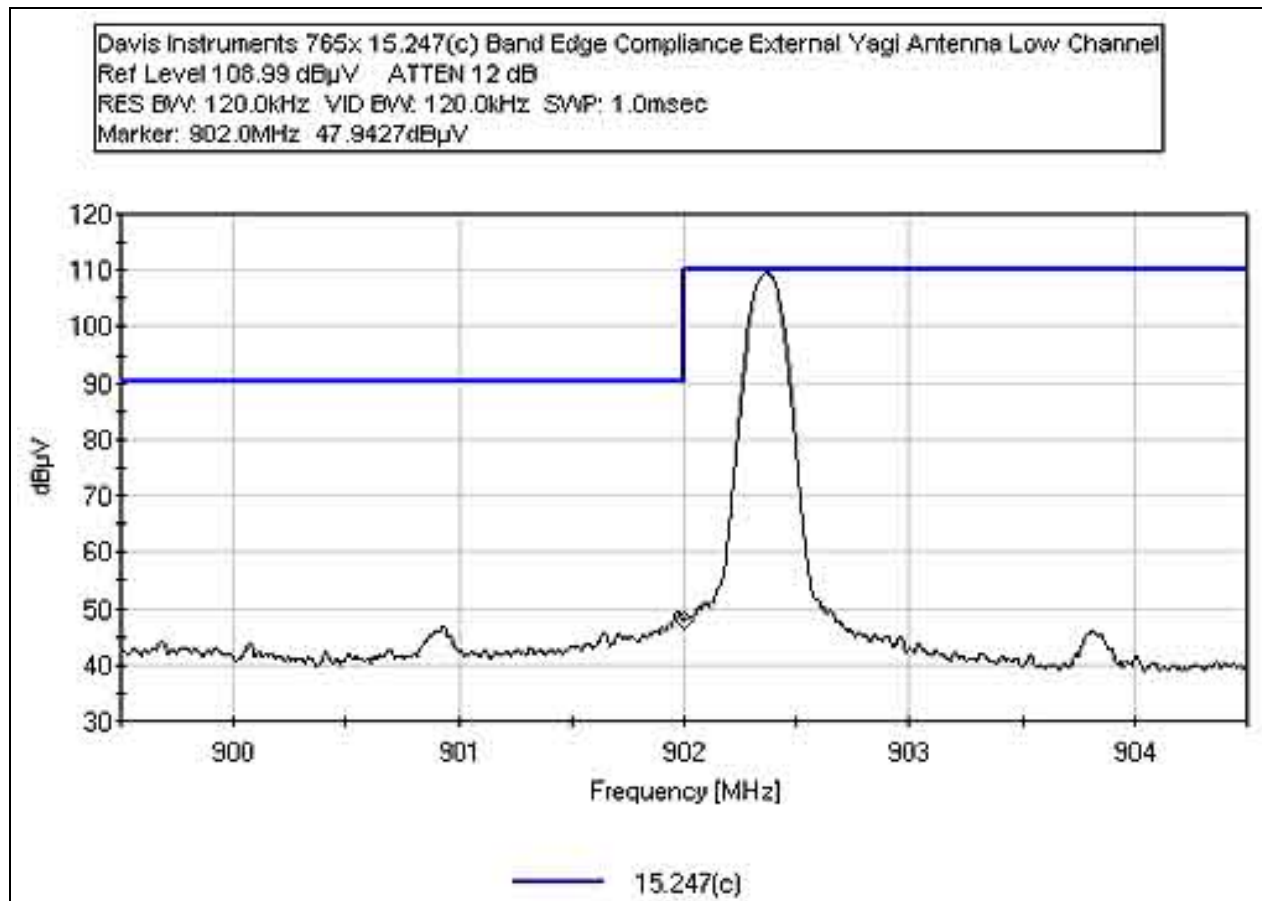




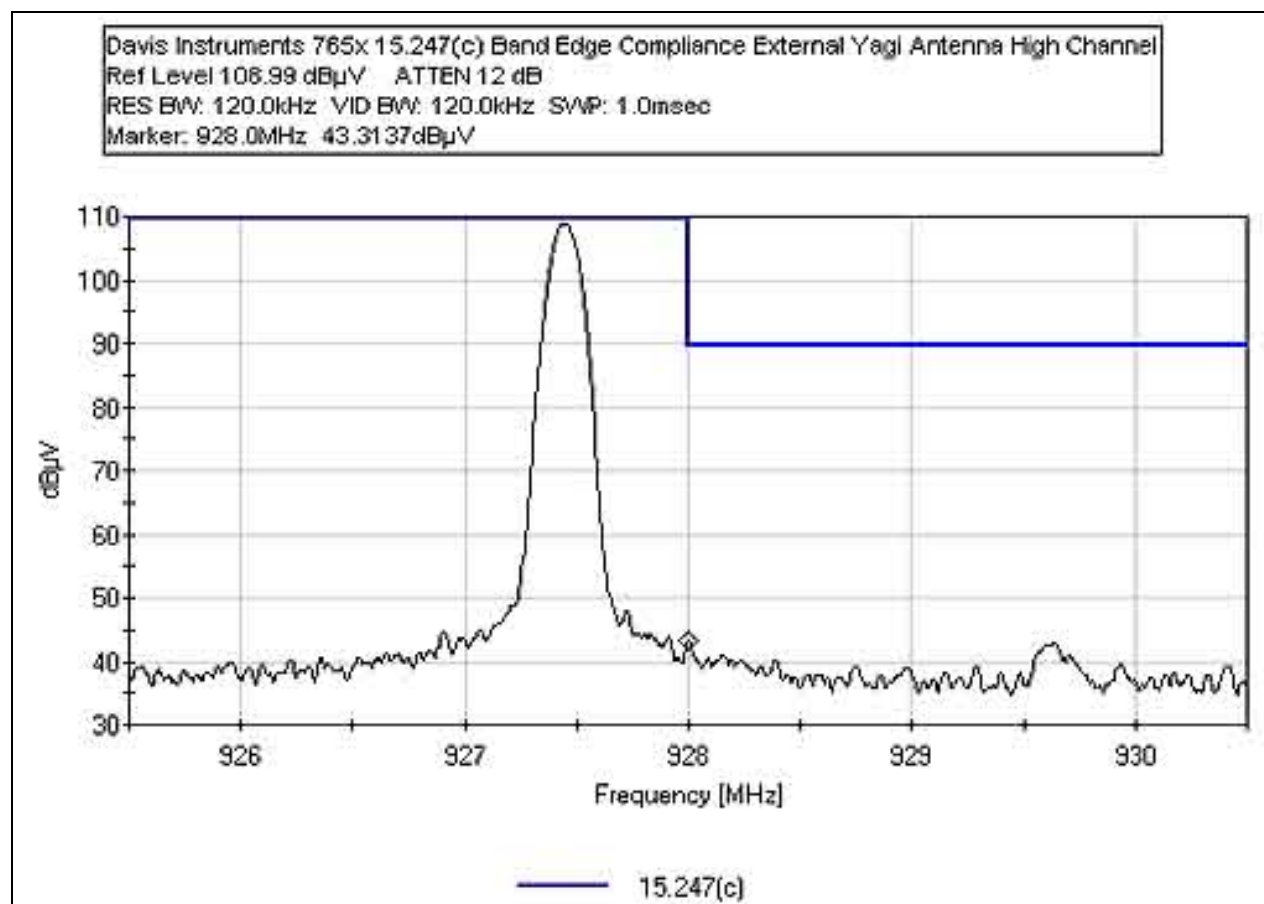
**FCC 15.247(c) BAND EDGE EXTERNAL OMNI ANTENNA HIGH CHANNEL**



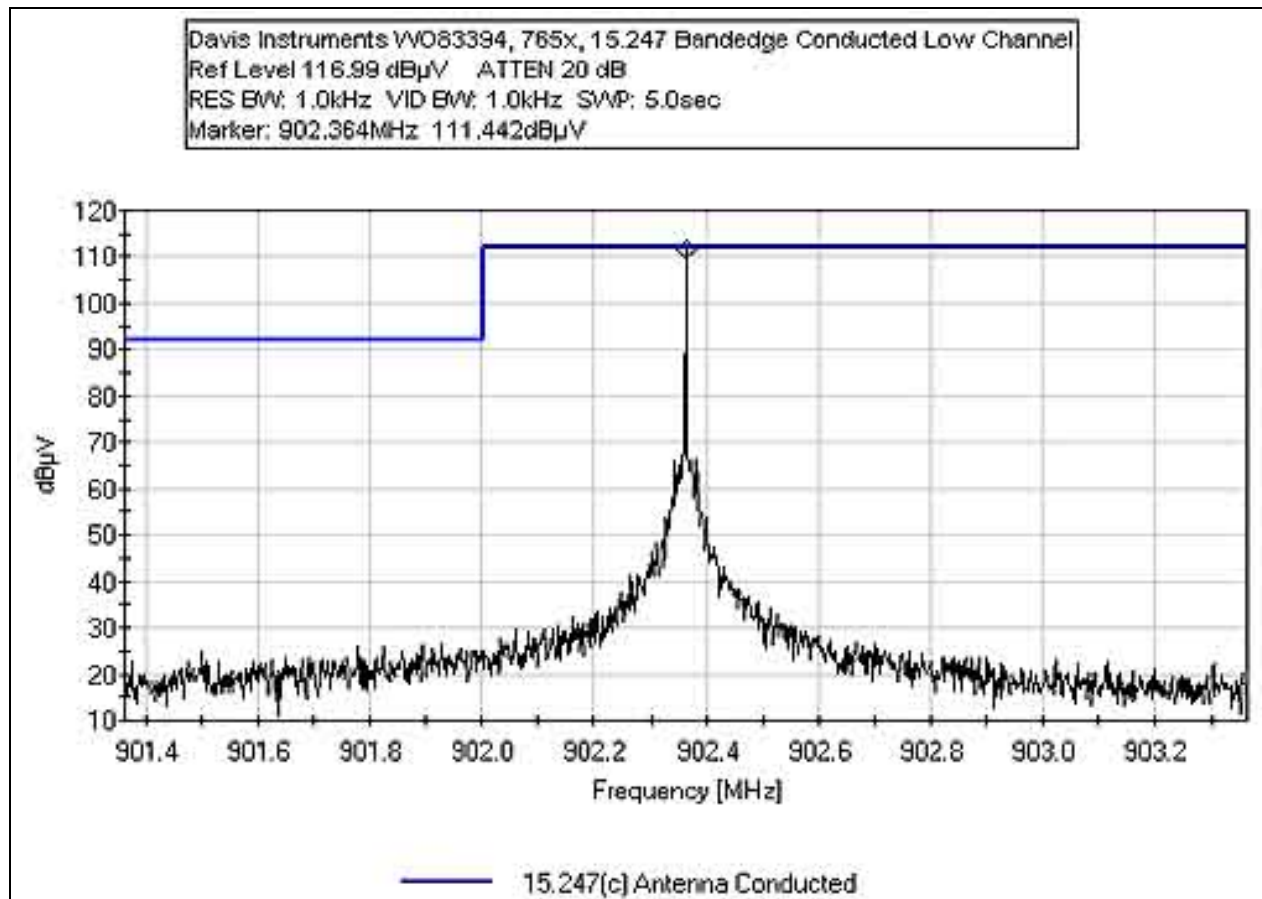
**FCC 15.247(c) BAND EDGE EXTERNAL YAGI ANTENNA LOW CHANNEL**



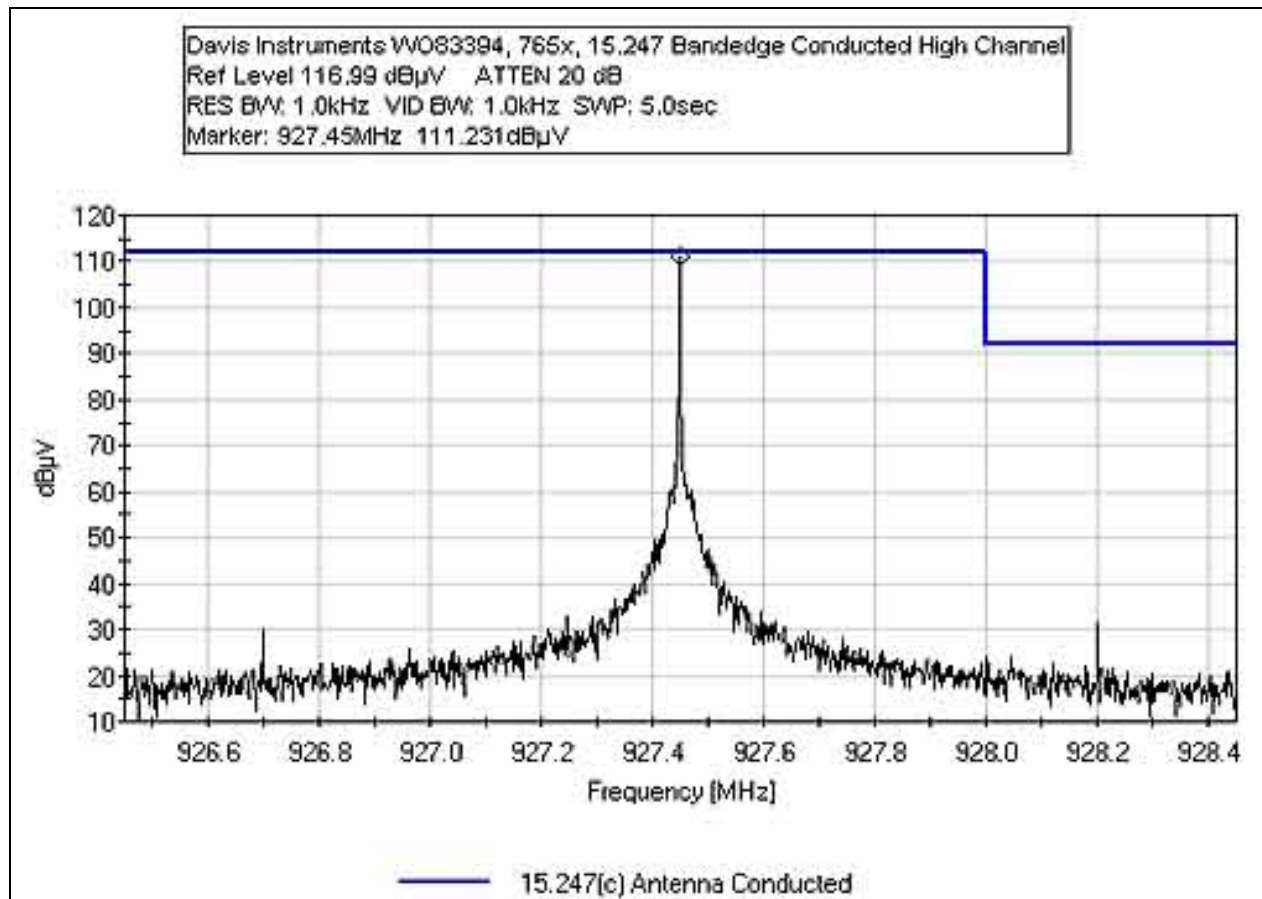
**FCC 15.247(c) BAND EDGE EXTERNAL YAGI ANTENNA HIGH CHANNEL**



## FCC 15.247 BAND EDGE CONDUCTED LOW CHANNEL



## FCC 15.247 BAND EDGE CONDUCTED HIGH CHANNEL



## TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C. The relative humidity was between 20% and 75%.

## EUT SETUP

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the photographs in Appendix A. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables. The corrected data was then compared to the applicable emission limits to determine compliance.

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available I/O ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. I/O cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The radiated and conducted emissions data of the EUT was taken with the HP Spectrum Analyzer. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in Table A.

Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

## CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dBμV/m, the spectrum analyzer reading in dBμV was corrected by using the following formula in Table A. This reading was then compared to the applicable specification limit to determine compliance.

| TABLE A: SAMPLE CALCULATIONS |                     |          |
|------------------------------|---------------------|----------|
|                              | Meter reading       | (dBμV)   |
| +                            | Antenna Factor      | (dB)     |
| +                            | Cable Loss          | (dB)     |
| -                            | Distance Correction | (dB)     |
| -                            | Preamplifier Gain   | (dB)     |
| =                            | Corrected Reading   | (dBμV/m) |

## **TEST INSTRUMENTATION AND ANALYZER SETTINGS**

The test instrumentation and equipment listed in Table A were used to collect both the radiated and conducted emissions data for the EUT. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For radiated measurements from 30 to 1000 MHz, the biconilog antenna was used. The horn antenna was used for frequencies above 1000 MHz. Conducted emissions tests required the use of the FCC type LISNs.

The HP spectrum analyzer was used for all measurements. Table B shows the analyzer bandwidth settings that were used in designated frequency bands. For conducted emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. A 10 dB external attenuator was also used during conducted tests, with internal offset correction in the analyzer. During radiated testing, the measurements were made with 0 dB of attenuation, a reference level of 97 dB $\mu$ V, and a vertical scale of 10 dB per division.

## **SPECTRUM ANALYZER DETECTOR FUNCTIONS**

The notes that accompany the measurements contained in the Tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the six highest readings, this is indicated as a "Q" or an "A" in the appropriate table. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

### **Peak**

In this mode, the Spectrum Analyzer or test engineer recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the analyzer called "peak hold," the analyzer had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the analyzer made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

### **Quasi-Peak**

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the HP Quasi-Peak Adapter for the HP Spectrum Analyzer. The detailed procedure for making quasi peak measurements contained in the HP Quasi-Peak Adapter manual were followed.

### **Average**

For certain frequencies, average measurements may be made using the spectrum analyzer. To make these measurements, the test engineer reduces the video bandwidth on the analyzer until the modulation of the signal is filtered out. At this point the analyzer is set into the linear mode and the scan time is reduced.



## **EUT TESTING**

### **Mains Conducted Emissions**

During conducted emissions testing, the EUT was located on a wooden table measuring approximately 80 cm high, 1 meter deep, and 1.5 meters in length. One wall of the room where the EUT was located has a minimum 2 meter by 2 meter conductive plane. The EUT was mounted on the wooden table 40 cm away from the conductive plane, and 80 cm from any other conductive surface.

The vertical metal plane used for conducted emissions was grounded to the earth. Power to the EUT was provided through a LISN. The LISN was grounded to the ground plane. All other objects were kept a minimum of 80 cm away from the EUT during the conducted test.

The LISNs used were 50  $\mu$ H/+50 ohms. Above 150 kHz, a 0.15  $\mu$ F series capacitor was added in-line prior to connecting the analyzer to restore the proper impedance for the range. A 30 to 50 second sweep time was used for automated measurements in the frequency bands of 150 kHz to 500 kHz, and 500 kHz to 30 MHz. All readings within 20 dB of the limit were recorded, and those within 6 dB of the limit were examined with additional measurements using a slower sweep time.

### **Antenna Conducted Emissions**

For measuring the signal strength on the RF output port of the EUT, the spectrum analyzer was connected directly to the EUT. The sweep time of the analyzer was adjusted so that the spectrum analyzer readings were always in a calibrated range. All readings within 20 dB of the limit were recorded.

### **Radiated Emissions**

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were .5 meter by .5 meters.

During the preliminary radiated scan, the EUT was powered up and operating in its defined FCC test mode. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. The frequency range of 30 MHz to 1000 MHz was scanned with the biconilog antenna located about 1.5 meter above the ground plane in the vertical polarity. During this scan, the turntable was rotated and all peaks at or near the limit were recorded. A scan of the FM band from 88 to 110 MHz was then made using a reduced resolution bandwidth and frequency span. The biconilog antenna was changed to the horizontal polarity and the above steps were repeated. For frequencies exceeding 1000 MHz, the horn antenna was used. Care was taken to ensure that no frequencies were missed within the FM and TV bands. An analysis was performed to determine if the signals that were at or near the limit were caused by an ambient transmission. If unable to determine by analysis, the equipment was powered down to make the final determination if the EUT was the source of the emission.



A thorough scan of all frequencies was made manually using a small frequency span, rotating the turntable and raising and lowering the antenna from one to four meters as needed. The test engineer maximized the readings with respect to the table rotation, antenna height and configuration of EUT. Maximizing of the EUT was achieved by monitoring the spectrum analyzer on a closed circuit television monitor.

**APPENDIX A**

**TEST SETUP PHOTOGRAPHS**

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Omni Antenna

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Yagi Antenna

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



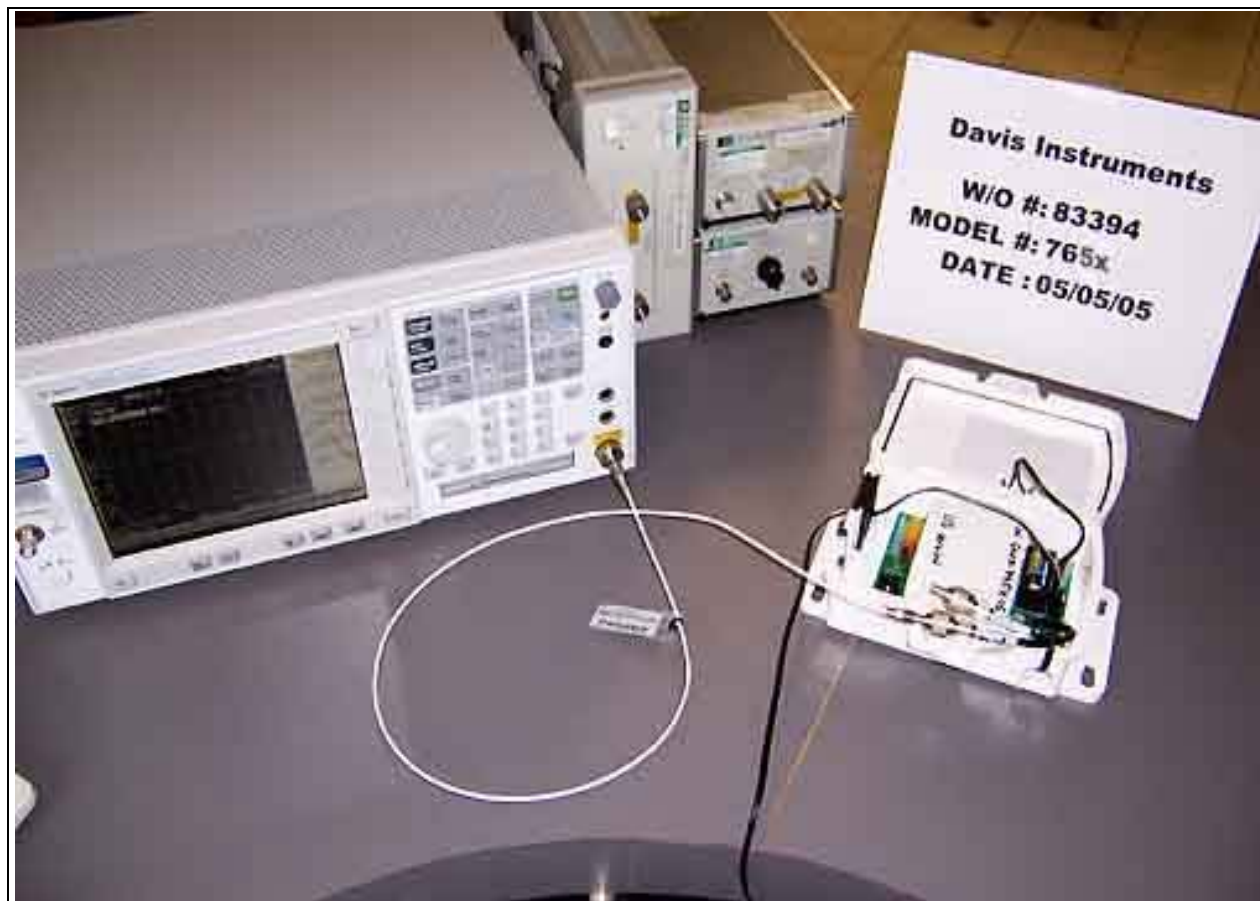
Radiated Emissions - Receiver

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions - Front View

**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**



Transmitter



**PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP**



Receiver

## APPENDIX B

### TEST EQUIPMENT LIST

#### 15.109

| Function                          | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA                 | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| Chase CBL6111C Bilog              | 2456       | 06/26/2003       | 06/26/2005   | 01991   |
| EMCO 3115 Horn Antenna            | 9307-4085  | 04/29/2005       | 04/29/2007   | 00656   |
| HP 8447D Preamp                   | 1937A02604 | 03/11/2005       | 03/11/2007   | 00099   |
| HP 8449B Preamp                   | 3008A00301 | 12/14/2004       | 12/14/2006   | 2010    |
| Cable, Pasternack 36"             | NA         | 02/08/2005       | 02/08/2007   | P05202  |
| Cable, Andrews Hardline HF-005-20 | NA         | 06/03/2003       | 06/03/2005   | P04275  |

#### 15.111

| Function              | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA     | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| Cable, Pasternack 36" | NA         | 02/08/2005       | 02/08/2007   | P05202  |

#### 15.207

| Function                | S/N          | Calibration Date | Cal Due Date | Asset #     |
|-------------------------|--------------|------------------|--------------|-------------|
| Agilent E4446A SA       | US44300407   | 01/12/2005       | 01/12/2007   | 02660       |
| 150kHz HP Filter TTE    | G7754        | 04/20/2004       | 04/20/2006   | 02608       |
| LISN, 8028-50-TS-24-BNC | 8379276, 280 | 06/05/2003       | 06/05/2005   | 1248 & 1249 |

#### 15.31(e)/15.247(a)/15.247(b)(1)/15.247(b)(2)

| Function              | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA     | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| Cable, Pasternack 36" | NA         | 02/08/2005       | 02/08/2007   | P05202  |

#### 15.247(b)(3)

| Function             | S/N        | Calibration Date | Cal Due Date | Asset # |
|----------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA    | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| Chase CBL6111C Bilog | 2456       | 06/26/2003       | 06/26/2005   | 01991   |
| HP 8447D Preamp      | 1937A02604 | 03/11/2005       | 03/11/2007   | 00099   |

#### 15.247(c) OATS

| Function                          | S/N        | Calibration Date | Cal Due Date | Asset # |
|-----------------------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA                 | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| Chase CBL6111C Bilog              | 2456       | 06/26/2003       | 06/26/2005   | 01991   |
| EMCO 3115 Horn Antenna            | 9307-4085  | 04/29/2005       | 04/29/2007   | 00656   |
| HP 8447D Preamp                   | 1937A02604 | 03/11/2005       | 03/11/2007   | 00099   |
| HP 8449B Preamp                   | 3008A00301 | 12/14/2004       | 12/14/2006   | 2010    |
| Cable, Pasternack 36"             | NA         | 02/08/2005       | 02/08/2007   | P05202  |
| Cable, Andrews Hardline HF-005-20 | NA         | 06/03/2003       | 06/03/2005   | P04275  |
| EMCO Loop Antenna                 | 1074       | 05/13/2005       | 05/13/2007   | 00226   |

#### 15.247(c) Antenna Conducted

| Function                  | S/N        | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|---------|
| Agilent E4446A SA         | US44300407 | 01/12/2005       | 01/12/2007   | 02660   |
| Cable, Pasternack 36"     | NA         | 02/08/2005       | 02/08/2007   | P05202  |
| Transformer Powerstat 126 | None       | 05/05/2005       | 05/05/2007   | 2037    |

## **APPENDIX C**

### **MEASUREMENT DATA SHEETS**

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

Specification: **15.109 CLASS B**

Work Order #: **83394**

Date: 05/27/2005

Test Type: **Maximized Emissions**

Time: 10:39:00

Equipment: **VP2 Wireless Repeater**

Sequence#: 16

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 765x

S/N: Davis-765x-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Recieve Antenna configuration: External Connector Terminated. Frequency Range Investigated: 30MHz to 10GHz. Temperature: 20°C, Relative Humidity: 58%. Ambient levels recorded in the 902-928MHz band. **No EUT Signals detected within 20dB of the limit.**

**Transducer Legend:**

|                     |                 |
|---------------------|-----------------|
| T1=Amp - S/N 604    | T2=Bilog Site D |
| 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>dB | Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|------------|-------|----------------|----------------|--------------|--------------|
| 1 | 85.005M     | 34.6         | -26.9    | +7.4     | +2.1     | +0.0       |       | 17.2           | 40.0           | -22.8        | Vert<br>115  |
| 2 | 915.000M    | 18.2         | -27.0    | +23.0    | +8.2     | +0.0       |       | 22.4           | 46.0           | -23.6        | Verti<br>100 |
| 3 | 902.000M    | 18.3         | -27.0    | +22.8    | +8.1     | +0.0       |       | 22.2           | 46.0           | -23.8        | Horiz<br>150 |
| 4 | 902.000M    | 18.0         | -27.0    | +22.8    | +8.1     | +0.0       |       | 21.9           | 46.0           | -24.1        | Horiz<br>150 |
| 5 | 928.000M    | 17.2         | -27.0    | +23.2    | +8.2     | +0.0       |       | 21.6           | 46.0           | -24.4        | Horiz<br>150 |
| 6 | 915.000M    | 17.0         | -27.0    | +23.0    | +8.2     | +0.0       |       | 21.2           | 46.0           | -24.8        | Horiz<br>150 |
| 7 | 928.000M    | 15.4         | -27.0    | +23.2    | +8.2     | +0.0       |       | 19.8           | 46.0           | -26.2        | Verti<br>100 |
| 8 | 902.000M    | 15.3         | -27.0    | +22.8    | +8.1     | +0.0       |       | 19.2           | 46.0           | -26.8        | Verti<br>100 |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

Specification: **FCC 15.111**

Work Order #: **83394**

Date: 05/05/2005

Test Type: **Antenna Terminals**

Time: 3:39:31 PM

Equipment: **VP2 Wireless Repeater**

Sequence#: 2

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 765x

S/N: Davis-765x-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Receive. Antenna configuration: External Connector. Frequency Range Investigated: 9kHz to 10GHz. Temperature: 20°C Relative Humidity: 58%.

**Transducer Legend:**

T1=Cable 40 GHz 36"

**Measurement Data:** Reading listed by margin.

Test Distance: None

| #  | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB |  |  |  | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------|----------|--|--|--|---------------|--------------|--------------|--------------|--------------|
| 1  | 7316.515M   | 44.2         | +1.9     |  |  |  | +0.0          | 46.1         | 50.0         | -3.9         | None         |
| 2  | 3658.157M   | 39.3         | +1.3     |  |  |  | +0.0          | 40.6         | 50.0         | -9.4         | None         |
| 3  | 2417.166M   | 39.5         | +1.0     |  |  |  | +0.0          | 40.5         | 50.0         | -9.5         | None         |
| 4  | 1828.828M   | 39.5         | +0.9     |  |  |  | +0.0          | 40.4         | 50.0         | -9.6         | None         |
| 5  | 7106.305M   | 31.4         | +1.9     |  |  |  | +0.0          | 33.3         | 50.0         | -16.7        | None         |
| 6  | 6928.127M   | 31.0         | +1.9     |  |  |  | +0.0          | 32.9         | 50.0         | -17.1        | None         |
| 7  | 7063.262M   | 30.8         | +1.9     |  |  |  | +0.0          | 32.7         | 50.0         | -17.3        | None         |
| 8  | 7087.286M   | 30.8         | +1.9     |  |  |  | +0.0          | 32.7         | 50.0         | -17.3        | None         |
| 9  | 7128.327M   | 30.8         | +1.9     |  |  |  | +0.0          | 32.7         | 50.0         | -17.3        | None         |
| 10 | 6913.112M   | 30.6         | +1.9     |  |  |  | +0.0          | 32.5         | 50.0         | -17.5        | None         |

|    |           |      |      |      |      |      |       |      |
|----|-----------|------|------|------|------|------|-------|------|
| 11 | 7122.321M | 30.6 | +1.9 | +0.0 | 32.5 | 50.0 | -17.5 | None |
| 12 | 7330.529M | 29.8 | +1.9 | +0.0 | 31.7 | 50.0 | -18.3 | None |
| 13 | 7726.925M | 29.7 | +2.0 | +0.0 | 31.7 | 50.0 | -18.3 | None |
| 14 | 6793.993M | 29.5 | +1.8 | +0.0 | 31.3 | 50.0 | -18.7 | None |
| 15 | 7562.761M | 29.2 | +1.9 | +0.0 | 31.1 | 50.0 | -18.9 | None |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

Specification: **FCC 15.207 - AVE**

Work Order #: **83394**

Test Type: **Conducted Emissions**

Equipment: **VP2 Wireless Repeater**

Manufacturer: Davis Instruments

Model: 762y

S/N: Davis-762y-05

Date: 05/27/2005

Time: 9:43:08 AM

Sequence#: 14

Tested By: Randal Clark

120V 60Hz

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 762y    | Davis-762y-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Normal Mode. Antenna configuration: Integral Antenna. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 23°C, Relative Humidity: 52%.

**Transducer Legend:**

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

**Measurement Data:**

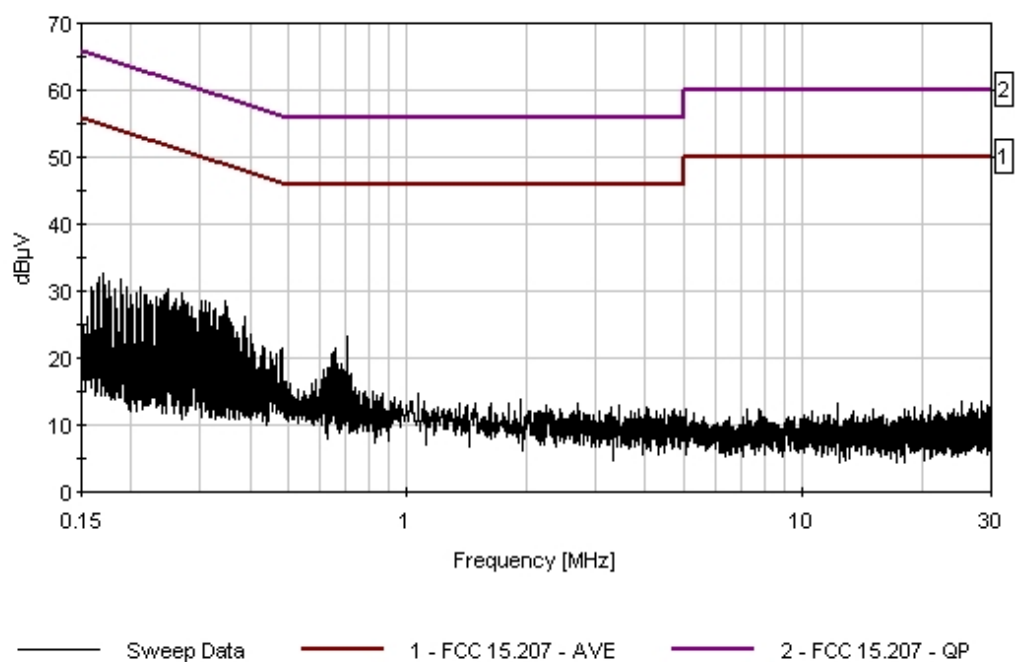
Reading listed by margin.

Test Lead: Black

| #  | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------|----------|----------|----------|------------|-------|--------------|--------------|--------------|--------------|
| 1  | 345.618k    | 28.1         | +0.1     | +0.2     | +0.1     | +0.0       |       | 28.5         | 49.1         | -20.6        | Black        |
| 2  | 351.436k    | 27.2         | +0.1     | +0.3     | +0.1     | +0.0       |       | 27.7         | 48.9         | -21.2        | Black        |
| 3  | 269.989k    | 29.3         | +0.1     | +0.2     | +0.2     | +0.0       |       | 29.8         | 51.1         | -21.3        | Black        |
| 4  | 248.900k    | 29.6         | +0.1     | +0.2     | +0.3     | +0.0       |       | 30.2         | 51.8         | -21.6        | Black        |
| 5  | 303.441k    | 28.0         | +0.1     | +0.2     | +0.2     | +0.0       |       | 28.5         | 50.1         | -21.6        | Black        |
| 6  | 309.258k    | 27.9         | +0.1     | +0.2     | +0.2     | +0.0       |       | 28.4         | 50.0         | -21.6        | Black        |
| 7  | 315.076k    | 27.8         | +0.1     | +0.2     | +0.1     | +0.0       |       | 28.2         | 49.8         | -21.6        | Black        |
| 8  | 387.796k    | 25.7         | +0.1     | +0.3     | +0.1     | +0.0       |       | 26.2         | 48.1         | -21.9        | Black        |
| 9  | 327.438k    | 26.9         | +0.1     | +0.2     | +0.1     | +0.0       |       | 27.3         | 49.5         | -22.2        | Black        |
| 10 | 169.635k    | 31.4         | +0.1     | +0.3     | +0.9     | +0.0       |       | 32.7         | 55.0         | -22.3        | Black        |
| 11 | 245.264k    | 29.0         | +0.1     | +0.2     | +0.3     | +0.0       |       | 29.6         | 51.9         | -22.3        | Black        |

|    |          |      |      |      |      |      |      |      |       |       |
|----|----------|------|------|------|------|------|------|------|-------|-------|
| 12 | 187.815k | 31.1 | +0.1 | +0.3 | +0.2 | +0.0 | 31.7 | 54.1 | -22.4 | Black |
| 13 | 272.898k | 28.0 | +0.1 | +0.2 | +0.2 | +0.0 | 28.5 | 51.0 | -22.5 | Black |
| 14 | 342.710k | 26.2 | +0.1 | +0.2 | +0.1 | +0.0 | 26.6 | 49.1 | -22.5 | Black |
| 15 | 212.540k | 30.0 | +0.1 | +0.3 | +0.1 | +0.0 | 30.5 | 53.1 | -22.6 | Black |

CKC Laboratories Date: 05/27/2005 Time: 9:43:08 AM Davis Instruments WVO#: 83394  
FCC 15.207 - AVE Test Lead: Black 120V 60Hz Sequence#: 14  
Davis Instruments MN 762x





Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

Specification: **FCC 15.207 - AVE**

Work Order #: **83394**

Test Type: **Conducted Emissions**

Equipment: **VP2 Wireless Repeater**

Manufacturer: Davis Instruments

Model: 762y

S/N: Davis-762y-05

Date: 05/27/2005

Time: 9:45:38 AM

Sequence#: 15

Tested By: Randal Clark

120V 60Hz

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 762y    | Davis-762y-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Normal Mode. Antenna configuration: Integral Antenna. Frequency Range Investigated: 150kHz - 30MHz. Temperature: 23°C, Relative Humidity: 52%.

**Transducer Legend:**

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

**Measurement Data:**

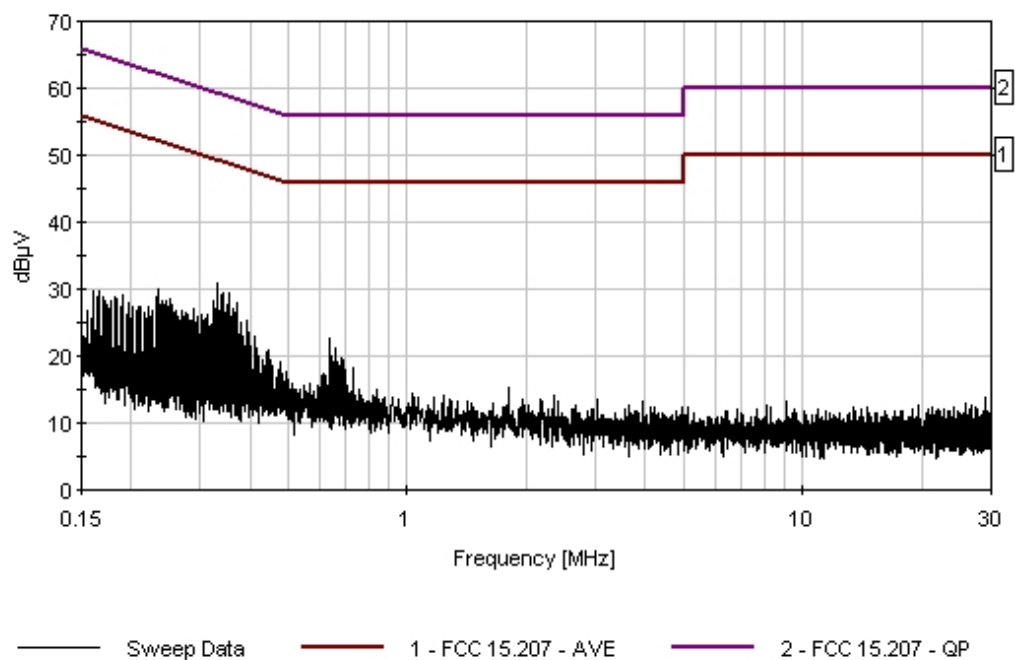
Reading listed by margin.

Test Lead: White

| #  | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------|----------|----------|----------|------------|---------------|--------------|--------------|--------------|--------------|
| 1  | 330.347k    | 30.5         | +0.1     | +0.3     | +0.1     |            | +0.0          | 31.0         | 49.4         | -18.4        | White        |
| 2  | 355.072k    | 28.9         | +0.1     | +0.4     | +0.1     |            | +0.0          | 29.5         | 48.8         | -19.3        | White        |
| 3  | 342.710k    | 28.9         | +0.1     | +0.3     | +0.1     |            | +0.0          | 29.4         | 49.1         | -19.7        | White        |
| 4  | 339.801k    | 28.5         | +0.1     | +0.3     | +0.1     |            | +0.0          | 29.0         | 49.2         | -20.2        | White        |
| 5  | 336.892k    | 28.3         | +0.1     | +0.3     | +0.1     |            | +0.0          | 28.8         | 49.3         | -20.5        | White        |
| 6  | 373.252k    | 27.3         | +0.1     | +0.4     | +0.1     |            | +0.0          | 27.9         | 48.4         | -20.5        | White        |
| 7  | 351.436k    | 27.1         | +0.1     | +0.4     | +0.1     |            | +0.0          | 27.7         | 48.9         | -21.2        | White        |
| 8  | 348.527k    | 27.0         | +0.1     | +0.4     | +0.1     |            | +0.0          | 27.6         | 49.0         | -21.4        | White        |
| 9  | 324.529k    | 27.6         | +0.1     | +0.3     | +0.1     |            | +0.0          | 28.1         | 49.6         | -21.5        | White        |
| 10 | 360.890k    | 26.5         | +0.1     | +0.4     | +0.1     |            | +0.0          | 27.1         | 48.7         | -21.6        | White        |

|    |          |      |      |      |      |      |      |      |       |       |
|----|----------|------|------|------|------|------|------|------|-------|-------|
| 11 | 369.616k | 26.3 | +0.1 | +0.4 | +0.1 | +0.0 | 26.9 | 48.5 | -21.6 | White |
| 12 | 366.707k | 26.0 | +0.1 | +0.4 | +0.1 | +0.0 | 26.6 | 48.6 | -22.0 | White |
| 13 | 233.629k | 29.2 | +0.1 | +0.4 | +0.2 | +0.0 | 29.9 | 52.3 | -22.4 | White |
| 14 | 327.438k | 26.5 | +0.1 | +0.3 | +0.1 | +0.0 | 27.0 | 49.5 | -22.5 | White |
| 15 | 345.618k | 26.1 | +0.1 | +0.3 | +0.1 | +0.0 | 26.6 | 49.1 | -22.5 | White |

CKC Laboratories Date: 05/27/2005 Time: 9:45:38 AM Davis Instruments WVO#: 83394  
FCC 15.207 - AVE Test Lead: White 120V 60Hz Sequence#: 15  
Davis Instruments MN 762x



Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

Specification: **15.247(b)(2)**

Work Order #: **83394**

Date: 05/05/2005

Test Type: **Antenna Terminals**

Time: 16:35:37

Equipment: **VP2 Wireless Repeater**

Sequence#: 1

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 765x

S/N: Davis-765x-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: External Connector. Frequency Range Investigated: Carrier. Temperature: 20°C, Relative Humidity: 58%.

**Transducer Legend:**

|                     |
|---------------------|
| T1=Cable 40 GHz 36" |
|---------------------|

**Measurement Data:** Reading listed by margin.

Test Distance: None

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB |  |  |  | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|--|--|--|---------------|--------------|--------------|--------------|--------------|
| 1 | 902.363M    | 111.9        | +0.6     |  |  |  | +0.0          | 112.5        | 137.0        | -24.5        | None         |
|   |             |              |          |  |  |  |               |              | Low Channel  |              |              |
| 2 | 914.900M    | 111.8        | +0.6     |  |  |  | +0.0          | 112.4        | 137.0        | -24.6        | None         |
|   |             |              |          |  |  |  |               |              | Mid Channel  |              |              |
| 3 | 927.449M    | 111.5        | +0.6     |  |  |  | +0.0          | 112.1        | 137.0        | -24.9        | None         |
|   |             |              |          |  |  |  |               |              | High Channel |              |              |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

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

Work Order #: **83394**

Date: 05/25/2005

Test Type: **Antenna Terminals**

Time: 12:28:02

Equipment: **VP2 Wireless Repeater**

Sequence#: 7

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 762y

S/N: Davis-762y-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 762y    | Davis-762y-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: Integral (dedicated). Frequency Range Investigated: Carrier. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%.

**Transducer Legend:**

|                     |                 |
|---------------------|-----------------|
| T1=Amp - S/N 604    | T2=Bilog Site D |
| 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>dB | Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|------------|-------|----------------|----------------|--------------|--------------|
| 1 | 914.908M    | 99.8         | -27.0    | +23.0    | +8.2     | +0.0       |       | 104.0          | 127.0          | -23.0        | Vert         |
| 2 | 902.368M    | 99.9         | -27.0    | +22.8    | +8.1     | +0.0       |       | 103.8          | 127.0          | -23.2        | Vert         |
| 3 | 927.452M    | 99.3         | -27.0    | +23.2    | +8.2     | +0.0       |       | 103.7          | 127.0          | -23.3        | Vert         |
| 4 | 902.365M    | 99.2         | -27.0    | +22.8    | +8.1     | +0.0       |       | 103.1          | 127.0          | -23.9        | Horiz        |
| 5 | 914.908M    | 98.4         | -27.0    | +23.0    | +8.2     | +0.0       |       | 102.6          | 127.0          | -24.4        | Horiz        |
| 6 | 927.452M    | 97.5         | -27.0    | +23.2    | +8.2     | +0.0       |       | 101.9          | 127.0          | -25.1        | Horiz        |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

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

Work Order #: **83394**

Date: 05/26/2005

Test Type: **Antenna Terminals**

Time: 09:22:29

Equipment: **VP2 Wireless Repeater**

Sequence#: 10

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 765x

S/N: Davis-765x-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: External Yagi. Frequency Range Investigated: Carrier. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%.

**Transducer Legend:**

|                 |                     |
|-----------------|---------------------|
| T1=Bilog Site D | T2=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 | Dist<br>dB | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|------------|----------------|----------------|--------------|--------------|
| 1 | 902.365M    | 83.1         | +22.8    | +8.1     | +0.0       | 114.0          | 127.0          | -13.0        | Verti<br>100 |
| 2 | 914.910M    | 82.7         | +23.0    | +8.2     | +0.0       | 113.9          | 127.0          | -13.1        | Verti<br>144 |
| 3 | 927.453M    | 82.1         | +23.2    | +8.2     | +0.0       | 113.5          | 127.0          | -13.5        | Verti<br>144 |
| 4 | 914.911M    | 68.9         | +23.0    | +8.2     | +0.0       | 100.1          | 127.0          | -26.9        | Horiz<br>129 |
| 5 | 902.364M    | 68.2         | +22.8    | +8.1     | +0.0       | 99.1           | 127.0          | -27.9        | Horiz<br>136 |
| 6 | 927.453M    | 67.6         | +23.2    | +8.2     | +0.0       | 99.0           | 127.0          | -28.0        | Horiz<br>190 |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

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

Work Order #: **83394**

Date: 05/27/2005

Test Type: **Antenna Terminals**

Time: 09:11:50

Equipment: **VP2 Wireless Repeater**

Sequence#: 12

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 765x

S/N: Davis-765x-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: External Omni. Frequency Range Investigated: Carrier. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%.

**Transducer Legend:**

|                     |                 |
|---------------------|-----------------|
| T1=Amp - S/N 604    | T2=Bilog Site D |
| 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 | 902.366M    | 104.5        | -27.0    | +22.8    | +8.1     | +0.0          | 108.4          | 127.0          | -18.6        | Verti<br>141 |
| 2 | 927.450M    | 103.5        | -27.0    | +23.2    | +8.2     | +0.0          | 107.9          | 127.0          | -19.1        | Verti<br>165 |
| 3 | 914.908M    | 103.5        | -27.0    | +23.0    | +8.2     | +0.0          | 107.7          | 127.0          | -19.3        | Verti<br>166 |
| 4 | 927.448M    | 90.7         | -27.0    | +23.2    | +8.2     | +0.0          | 95.1           | 127.0          | -31.9        | Horiz<br>146 |
| 5 | 902.365M    | 91.2         | -27.0    | +22.8    | +8.1     | +0.0          | 95.1           | 127.0          | -31.9        | Horiz<br>137 |
| 6 | 914.908M    | 90.2         | -27.0    | +23.0    | +8.2     | +0.0          | 94.4           | 127.0          | -32.6        | Horiz<br>163 |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

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

Work Order #: **83394**

Date: 05/26/2005

Test Type: **Maximized Emissions**

Time: 11:49:46

Equipment: **VP2 Wireless Repeater**

Sequence#: 8

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 762y

S/N: Davis-762y-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 762y    | Davis-762y-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: Integral (dedicated). Frequency Range Investigated: 9kHz to 10GHz. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%.

**Transducer Legend:**

|                                      |                     |
|--------------------------------------|---------------------|
| T1=Amp - S/N 604                     | T2=Bilog Site D     |
| T3=Cable - 10 Meter                  | T4=Amp - S/N 301    |
| T5=Horn AN 00656 1-18 GHz (Mariposa) | T6=Cable 40 GHz 36" |
| T7=Cable - 3 Meter to bulkhead       | T8=Cable HF-005-20  |
| T9=Mag Loop - AN 00226 - 9kHz-30M    |                     |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq      | Rdng | T1    | T2   | T3   | T4    | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|-------|------|------|-------|-------|--------|--------|--------|-------|
|   |           |      | T5    | T6   | T7   | T8    |       |        |        |        |       |
|   | MHz       | dBμV | dB    | dB   | dB   | dB    | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 2707.095M | 46.5 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 50.6   | 54.0   | -3.4   | Verti |
|   | Ave       |      | +30.1 | +1.1 | +5.2 | +2.1  |       |        |        |        | 107   |
| ^ | 2707.095M | 50.4 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 54.5   | 54.0   | +0.5   | Verti |
|   |           |      | +30.1 | +1.1 | +5.2 | +2.1  |       |        |        |        | 107   |
| 3 | 2782.325M | 45.1 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 49.6   | 54.0   | -4.4   | Verti |
|   | Ave       |      | +30.4 | +1.1 | +5.3 | +2.1  |       |        |        |        | 107   |
| ^ | 2782.325M | 48.2 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 52.7   | 54.0   | -1.3   | Verti |
|   |           |      | +30.4 | +1.1 | +5.3 | +2.1  |       |        |        |        | 107   |
| 5 | 2782.400M | 44.4 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 48.9   | 54.0   | -5.1   | Horiz |
|   |           |      | +30.4 | +1.1 | +5.3 | +2.1  |       |        |        |        | 134   |

|    |                     |      |               |              |              |               |      |      |                                                            |       |              |
|----|---------------------|------|---------------|--------------|--------------|---------------|------|------|------------------------------------------------------------|-------|--------------|
| 6  | 2782.300M<br>Ave    | 44.3 | +0.0<br>+30.4 | +0.0<br>+1.1 | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 48.8 | 54.0                                                       | -5.2  | Verti<br>134 |
| 7  | 2744.680M<br>Ave    | 41.2 | +0.0<br>+30.3 | +0.0<br>+1.1 | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 45.6 | 54.0                                                       | -8.4  | Verti<br>121 |
| ^  | 2744.730M           | 46.2 | +0.0<br>+30.3 | +0.0<br>+1.1 | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 50.6 | 54.0                                                       | -3.4  | Verti<br>121 |
| 9  | 2707.100M<br>Ave    | 40.0 | +0.0<br>+30.1 | +0.0<br>+1.1 | +0.0<br>+5.2 | -34.4<br>+2.1 | +0.0 | 44.1 | 54.0                                                       | -9.9  | Horiz<br>134 |
| 10 | 85.005M             | 34.6 | -26.9         | +7.4         | +2.1         |               | +0.0 | 17.2 | 40.0                                                       | -22.8 | Vert         |
| 11 | 1829.820M           | 61.9 | +0.0<br>+27.5 | +0.0<br>+0.9 | +0.0<br>+4.2 | -35.1<br>+1.7 | +0.0 | 61.1 | 84.0<br>not within a<br>restricted band:<br>limit is 20dBc | -22.9 | Verti<br>121 |
| 12 | 1804.660M           | 61.7 | +0.0<br>+27.4 | +0.0<br>+0.9 | +0.0<br>+4.2 | -35.1<br>+1.7 | +0.0 | 60.8 | 84.0<br>not within a<br>restricted band:<br>limit is 20dBc | -23.2 | Verti<br>118 |
| 13 | 1804.680M           | 61.1 | +0.0<br>+27.4 | +0.0<br>+0.9 | +0.0<br>+4.2 | -35.1<br>+1.7 | +0.0 | 60.2 | 84.0<br>not within a<br>restricted band:<br>limit is 20dBc | -23.8 | Horiz<br>134 |
| 14 | 1854.800M           | 59.5 | +0.0<br>+27.6 | +0.0<br>+0.9 | +0.0<br>+4.2 | -35.1<br>+1.7 | +0.0 | 58.8 | 84.0<br>not within a<br>restricted band:<br>limit is 20dBc | -25.2 | Verti<br>100 |
| 15 | 1829.800M           | 58.9 | +0.0<br>+27.5 | +0.0<br>+0.9 | +0.0<br>+4.2 | -35.1<br>+1.7 | +0.0 | 58.1 | 84.0<br>not within a<br>restricted band:<br>limit is 20dBc | -25.9 | Horiz<br>134 |
| 16 | 1854.885M           | 57.5 | +0.0<br>+27.6 | +0.0<br>+0.9 | +0.0<br>+4.2 | -35.1<br>+1.7 | +0.0 | 56.8 | 84.0<br>not within a<br>restricted band:<br>limit is 20dBc | -27.2 | Horiz<br>133 |
| 17 | 929.880M<br>Ambient | 49.2 | -27.0         | +23.2        | +8.2         |               | +0.0 | 53.6 | 84.0                                                       | -30.4 | Verti<br>125 |
| 18 | 929.600M<br>Ambient | 42.8 | -27.0         | +23.2        | +8.2         |               | +0.0 | 47.2 | 84.0                                                       | -36.8 | Verti<br>125 |
| 19 | 934.065M            | 36.8 | -27.0         | +23.3        | +8.1         |               | +0.0 | 41.2 | 84.0                                                       | -42.8 | Horiz<br>128 |



|    |                 |      |       |       |      |      |      |      |       |              |
|----|-----------------|------|-------|-------|------|------|------|------|-------|--------------|
| 20 | 934.085M<br>Ave | 36.7 | -27.0 | +23.3 | +8.1 | +0.0 | 41.1 | 84.0 | -42.9 | Verti<br>125 |
| ^  | 934.078M        | 39.3 | -27.0 | +23.3 | +8.1 | +0.0 | 43.7 | 84.0 | -40.3 | Verti<br>125 |
| 22 | 929.986M        | 36.6 | -27.0 | +23.2 | +8.2 | +0.0 | 41.0 | 84.0 | -43.0 | Verti<br>131 |
| 23 | 899.827M        | 36.9 | -27.0 | +22.8 | +8.1 | +0.0 | 40.8 | 84.0 | -43.2 | Verti<br>131 |
| 24 | 899.815M        | 36.7 | +0.0  | +0.0  | +0.0 | +0.0 | 40.6 | 84.0 | -43.4 | Horiz        |
| 25 | 935.563M        | 35.9 | -27.0 | +23.3 | +8.1 | +0.0 | 40.3 | 84.0 | -43.7 | Verti<br>125 |
| 26 | 902.000M        | 35.8 | -27.0 | +22.8 | +8.1 | +0.0 | 39.7 | 84.0 | -44.3 | Vert         |
| 27 | 900.895M<br>Ave | 34.2 | -27.0 | +22.8 | +8.1 | +0.0 | 38.1 | 84.0 | -45.9 | Vert         |
| ^  | 900.895M        | 38.8 | -27.0 | +22.8 | +8.1 | +0.0 | 42.7 | 84.0 | -41.3 | Vert         |
| 29 | 900.905M<br>Ave | 34.1 | -27.0 | +22.8 | +8.1 | +0.0 | 38.0 | 84.0 | -46.0 | Horiz        |
| ^  | 900.905M        | 39.8 | -27.0 | +22.8 | +8.1 | +0.0 | 43.7 | 84.0 | -40.3 | Horiz        |
| 31 | 928.000M        | 32.7 | -27.0 | +23.2 | +8.2 | +0.0 | 37.1 | 84.0 | -46.9 | Verti<br>125 |
| 32 | 929.978M        | 32.3 | +0.0  | +0.0  | +0.0 | +0.0 | 36.7 | 84.0 | -47.3 | Horiz        |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

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

Work Order #: **83394**

Date: 05/26/2005

Test Type: **Maximized Emissions**

Time: 13:46:36

Equipment: **VP2 Wireless Repeater**

Sequence#: 9

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 765x

S/N: Davis-765x-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: External Yagi. Frequency Range Investigated: 9kHz to 10GHz. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%. Where average readings apply, a dwell time correction factor is applied in accordance with DA 00-705  $20 \cdot \text{LOG}(\text{Dwell}/100\text{ms})$ . Dwell time per hop is 7ms, therefore  $\text{CF} = 20 \cdot \text{LOG}(7\text{ms}/100\text{ms}) = -23.1\text{dB}$ .

**Transducer Legend:**

|                                      |                     |
|--------------------------------------|---------------------|
| T1=Amp - S/N 604                     | T2=Bilog Site D     |
| T3=Cable - 10 Meter                  | T4=Amp - S/N 301    |
| T5=Horn AN 00656 1-18 GHz (Mariposa) | T6=Cable 40 GHz 36" |
| T7=Cable - 3 Meter to bulkhead       | T8=Cable HF-005-20  |
| T9=DTCF - 7ms Dwell Time             |                     |

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

| # | Freq      | Rdng | T1                     | T2           | T3           | T4            | Dist  | Corr   | Spec   | Margin | Polar        |
|---|-----------|------|------------------------|--------------|--------------|---------------|-------|--------|--------|--------|--------------|
|   |           |      | T5                     | T6           | T7           | T8            |       |        |        |        |              |
|   | MHz       | dBμV | dB                     | dB           | dB           | dB            | Table | dBμV/m | dBμV/m | dB     | Ant          |
| 1 | 2782.330M | 45.6 | +0.0<br>+30.4<br>-23.1 | +0.0<br>+1.1 | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0  | 27.0   | 54.0   | -27.0  | Horiz<br>100 |
| 2 | 2782.330M | 45.3 | +0.0<br>+30.4<br>-23.1 | +0.0<br>+1.1 | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0  | 26.7   | 54.0   | -27.3  | Verti<br>172 |
| 3 | 2707.130M | 45.5 | +0.0<br>+30.1<br>-23.1 | +0.0<br>+1.1 | +0.0<br>+5.2 | -34.4<br>+2.1 | +0.0  | 26.5   | 54.0   | -27.5  | Horiz<br>138 |
| 4 | 2744.745M | 45.1 | +0.0<br>+30.3<br>-23.1 | +0.0<br>+1.1 | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0  | 26.4   | 54.0   | -27.6  | Verti<br>136 |
| 5 | 2707.055M | 42.6 | +0.0<br>+30.1<br>-23.1 | +0.0<br>+1.1 | +0.0<br>+5.2 | -34.4<br>+2.1 | +0.0  | 23.6   | 54.0   | -30.4  | Verti<br>133 |

|    |                  |      |                        |               |              |               |      |      |      |       |              |
|----|------------------|------|------------------------|---------------|--------------|---------------|------|------|------|-------|--------------|
| 6  | 2744.710M<br>Ave | 41.7 | +0.0<br>+30.3<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 23.0 | 54.0 | -31.0 | Horiz<br>117 |
| ^  | 2744.755M        | 46.8 | +0.0<br>+30.3<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 28.1 | 54.0 | -25.9 | Horiz<br>117 |
| 8  | 2782.330M        | 41.5 | +0.0<br>+30.4<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 22.9 | 54.0 | -31.1 | Horiz<br>100 |
| 9  | 902.000M         | 46.0 | -27.0<br>+0.0<br>+0.0  | +22.8<br>+0.0 | +8.1<br>+0.0 | +0.0<br>+0.0  | +0.0 | 49.9 | 94.0 | -44.1 | Verti<br>143 |
| 10 | 928.000M<br>QP   | 40.1 | -27.0<br>+0.0<br>+0.0  | +23.2<br>+0.0 | +8.2<br>+0.0 | +0.0<br>+0.0  | +0.0 | 44.5 | 94.0 | -49.5 | Verti<br>143 |
| 11 | 1829.776M        | 25.8 | +0.0<br>+27.5<br>-23.1 | +0.0<br>+0.9  | +0.0<br>+4.2 | +0.0<br>+1.7  | +0.0 | 37.0 | 94.0 | -57.0 | Verti<br>100 |
| 12 | 1804.725M        | 24.2 | +0.0<br>+27.4<br>-23.1 | +0.0<br>+0.9  | +0.0<br>+4.2 | +0.0<br>+1.7  | +0.0 | 35.3 | 94.0 | -58.7 | Verti<br>133 |
| 13 | 1804.708M        | 23.7 | +0.0<br>+27.4<br>-23.1 | +0.0<br>+0.9  | +0.0<br>+4.2 | +0.0<br>+1.7  | +0.0 | 34.8 | 94.0 | -59.2 | Horiz<br>146 |
| 14 | 1829.836M        | 23.6 | +0.0<br>+27.5<br>-23.1 | +0.0<br>+0.9  | +0.0<br>+4.2 | +0.0<br>+1.7  | +0.0 | 34.8 | 94.0 | -59.2 | Horiz<br>145 |
| 15 | 1854.902M        | 23.1 | +0.0<br>+27.6<br>-23.1 | +0.0<br>+0.9  | +0.0<br>+4.2 | +0.0<br>+1.7  | +0.0 | 34.4 | 94.0 | -59.6 | Horiz<br>116 |
| 16 | 1854.902M        | 21.9 | +0.0<br>+27.6<br>-23.1 | +0.0<br>+0.9  | +0.0<br>+4.2 | +0.0<br>+1.7  | +0.0 | 33.2 | 94.0 | -60.8 | Verti<br>100 |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**

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

Work Order #: **83394**

Date: 05/27/2005

Test Type: **Maximized Emissions**

Time: 09:17:43

Equipment: **VP2 Wireless Repeater**

Sequence#: 11

Manufacturer: Davis Instruments

Tested By: Randal Clark

Model: 765x

S/N: Davis-765x-05

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated. Antenna configuration: External Omni. Frequency Range Investigated: 9kHz to 10GHz. Data represents Low, Middle and High transmit frequencies. Temperature: 23°C, Relative Humidity: 52%. Where average readings apply, a dwell time correction factor is applied in accordance with DA 00-705  $20 \cdot \text{LOG}(\text{Dwell}/100\text{ms})$ . Dwell time per hop is 7ms, therefore  $\text{CF} = 20 \cdot \text{LOG}(7\text{ms}/100\text{ms}) = -23.1\text{dB}$ .

**Transducer Legend:**

|                                      |                     |
|--------------------------------------|---------------------|
| T1=Amp - S/N 604                     | T2=Bilog Site D     |
| T3=Cable - 10 Meter                  | T4=Amp - S/N 301    |
| T5=Horn AN 00656 1-18 GHz (Mariposa) | T6=Cable 40 GHz 36" |
| T7=Cable - 3 Meter to bulkhead       | T8=Cable HF-005-20  |
| T9=DTCF - 7ms Dwell Time             |                     |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq      | Rdng | T1    | T2   | T3   | T4    | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|-------|------|------|-------|-------|--------|--------|--------|-------|
|   |           |      | T5    | T6   | T7   | T8    |       |        |        |        |       |
|   | MHz       | dBμV | dB    | dB   | dB   | dB    | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 2707.080M | 49.3 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 30.3   | 54.0   | -23.7  | Verti |
|   | Ave       |      | +30.1 | +1.1 | +5.2 | +2.1  |       |        |        |        | 100   |
|   |           |      | -23.1 |      |      |       |       |        |        |        |       |
| ^ | 2707.080M | 51.4 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 32.4   | 54.0   | -21.6  | Verti |
|   |           |      | +30.1 | +1.1 | +5.2 | +2.1  |       |        |        |        | 100   |
|   |           |      | -23.1 |      |      |       |       |        |        |        |       |
| 3 | 2782.375M | 47.1 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 28.5   | 54.0   | -25.5  | Verti |
|   | Ave       |      | +30.4 | +1.1 | +5.3 | +2.1  |       |        |        |        | 100   |
|   |           |      | -23.1 |      |      |       |       |        |        |        |       |
| ^ | 2782.375M | 49.5 | +0.0  | +0.0 | +0.0 | -34.4 | +0.0  | 30.9   | 54.0   | -23.1  | Verti |
|   |           |      | +30.4 | +1.1 | +5.3 | +2.1  |       |        |        |        | 100   |
|   |           |      | -23.1 |      |      |       |       |        |        |        |       |

|    |                  |      |                        |               |              |               |      |      |      |       |              |
|----|------------------|------|------------------------|---------------|--------------|---------------|------|------|------|-------|--------------|
| 5  | 2707.080M<br>Ave | 45.3 | +0.0<br>+30.1<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.2 | -34.4<br>+2.1 | +0.0 | 26.3 | 54.0 | -27.7 | Horiz<br>137 |
| ^  | 2707.080M        | 47.8 | +0.0<br>+30.1<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.2 | -34.4<br>+2.1 | +0.0 | 28.8 | 54.0 | -25.2 | Horiz<br>137 |
| 7  | 2744.705M<br>Ave | 44.1 | +0.0<br>+30.3<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 25.4 | 54.0 | -28.6 | Verti<br>158 |
| ^  | 2744.705M        | 46.8 | +0.0<br>+30.3<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 28.1 | 54.0 | -25.9 | Verti<br>158 |
| 9  | 2744.705M<br>Ave | 44.0 | +0.0<br>+30.3<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 25.3 | 54.0 | -28.7 | Horiz<br>123 |
| ^  | 2744.705M        | 47.8 | +0.0<br>+30.3<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 29.1 | 54.0 | -24.9 | Horiz<br>123 |
| 11 | 2782.380M<br>Ave | 43.4 | +0.0<br>+30.4<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 24.8 | 54.0 | -29.2 | Horiz<br>113 |
| ^  | 2782.380M        | 46.6 | +0.0<br>+30.4<br>-23.1 | +0.0<br>+1.1  | +0.0<br>+5.3 | -34.4<br>+2.1 | +0.0 | 28.0 | 54.0 | -26.0 | Horiz<br>113 |
| 13 | 896.460M         | 42.8 | -27.0<br>+0.0<br>+0.0  | +22.8<br>+0.0 | +8.1<br>+0.0 | +0.0<br>+0.0  | +0.0 | 46.7 | 90.0 | -43.3 | Verti<br>141 |
| 14 | 900.905M         | 41.5 | -27.0<br>+0.0<br>+0.0  | +22.8<br>+0.0 | +8.1<br>+0.0 | +0.0<br>+0.0  | +0.0 | 45.4 | 90.0 | -44.6 | Verti<br>141 |
| 15 | 902.000M         | 41.1 | -27.0<br>+0.0<br>+0.0  | +22.8<br>+0.0 | +8.1<br>+0.0 | +0.0<br>+0.0  | +0.0 | 45.0 | 90.0 | -45.0 | Verti<br>141 |
| 16 | 934.080M         | 39.2 | -27.0<br>+0.0<br>+0.0  | +23.3<br>+0.0 | +8.1<br>+0.0 | +0.0<br>+0.0  | +0.0 | 43.6 | 90.0 | -46.4 | Verti<br>167 |
| 17 | 928.000M         | 38.5 | -27.0<br>+0.0<br>+0.0  | +23.2<br>+0.0 | +8.2<br>+0.0 | +0.0<br>+0.0  | +0.0 | 42.9 | 90.0 | -47.1 | Verti<br>167 |
| 18 | 899.820M         | 38.7 | -27.0<br>+0.0<br>+0.0  | +22.8<br>+0.0 | +8.1<br>+0.0 | +0.0<br>+0.0  | +0.0 | 42.6 | 90.0 | -47.4 | Verti<br>141 |
| 19 | 935.600M         | 35.9 | -27.0<br>+0.0<br>+0.0  | +23.3<br>+0.0 | +8.1<br>+0.0 | +0.0<br>+0.0  | +0.0 | 40.3 | 90.0 | -49.7 | Verti<br>167 |
| 20 | 948.820M         | 32.8 | -27.0<br>+0.0<br>+0.0  | +23.5<br>+0.0 | +7.8<br>+0.0 | +0.0<br>+0.0  | +0.0 | 37.1 | 90.0 | -52.9 | Verti<br>167 |
| 21 | 1854.970M        | 25.5 | +0.0<br>+27.6<br>-23.1 | +0.0<br>+0.9  | +0.0<br>+4.2 | +0.0<br>+1.7  | +0.0 | 36.8 | 90.0 | -53.2 | Horiz<br>107 |

|    |           |      |                        |              |              |              |      |      |      |       |              |
|----|-----------|------|------------------------|--------------|--------------|--------------|------|------|------|-------|--------------|
| 22 | 1804.708M | 25.7 | +0.0<br>+27.4<br>-23.1 | +0.0<br>+0.9 | +0.0<br>+4.2 | +0.0<br>+1.7 | +0.0 | 36.8 | 90.0 | -53.2 | Horiz<br>139 |
| 23 | 1829.850M | 25.2 | +0.0<br>+27.5<br>-23.1 | +0.0<br>+0.9 | +0.0<br>+4.2 | +0.0<br>+1.7 | +0.0 | 36.4 | 90.0 | -53.6 | Horiz<br>110 |
| 24 | 1854.970M | 24.6 | +0.0<br>+27.6<br>-23.1 | +0.0<br>+0.9 | +0.0<br>+4.2 | +0.0<br>+1.7 | +0.0 | 35.9 | 90.0 | -54.1 | Verti<br>150 |
| 25 | 1829.790M | 24.3 | +0.0<br>+27.5<br>-23.1 | +0.0<br>+0.9 | +0.0<br>+4.2 | +0.0<br>+1.7 | +0.0 | 35.5 | 90.0 | -54.5 | Verti<br>119 |
| 26 | 1804.728M | 23.0 | +0.0<br>+27.4<br>-23.1 | +0.0<br>+0.9 | +0.0<br>+4.2 | +0.0<br>+1.7 | +0.0 | 34.1 | 90.0 | -55.9 | Verti<br>185 |

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **83394**  
 Test Type: **Antenna Terminals**  
 Equipment: **VP2 Wireless Repeater**  
 Manufacturer: Davis Instruments  
 Model: 765x  
 S/N: Davis-765x-05

Date: 05/06/2005  
 Time: 9:58:55 AM  
 Sequence#: 3  
 Tested By: Randal Clark

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated, Channel 0 (Low). Antenna configuration: External Connector. Frequency Range Investigated: 1MHz to 10GHz Temperature: 20°C, Relative Humidity: 58%.

**Transducer Legend:**

|                     |
|---------------------|
| T1=Cable 40 GHz 36" |
|---------------------|

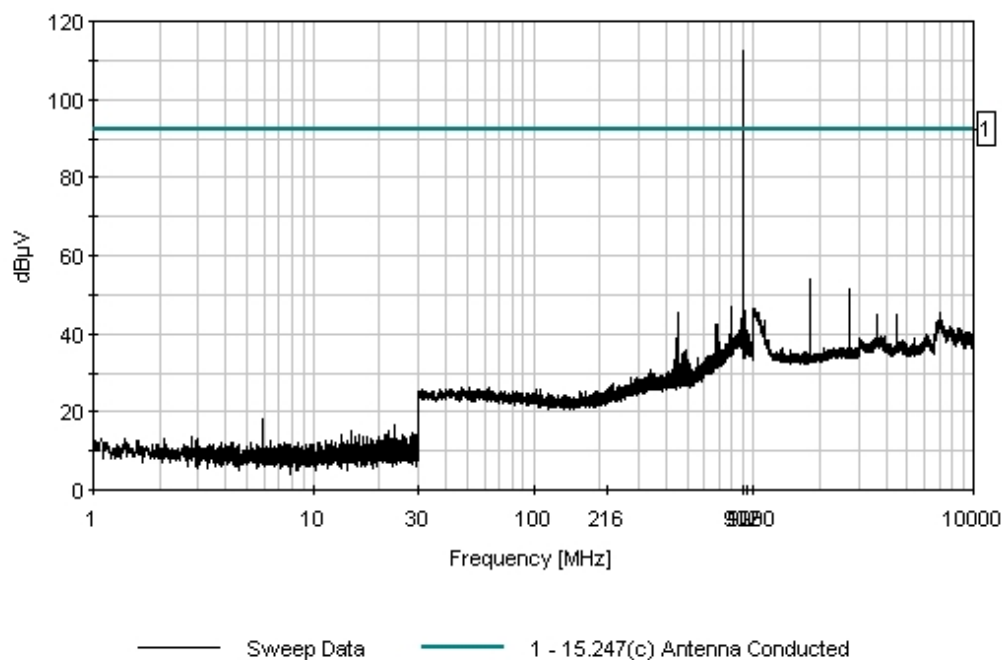
**Measurement Data:** Reading listed by margin.

Test Distance: None

| #  | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB |  |  |  | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV             | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------|----------|--|--|--|---------------|--------------|--------------------------|--------------|--------------|
| 1  | 902.311M    | 111.9        | +0.6     |  |  |  | +0.0          | 112.5        | 137.0                    | -24.5        | None         |
|    |             |              |          |  |  |  |               |              | Carrier - Low<br>Channel |              |              |
| 2  | 1804.804M   | 52.8         | +0.9     |  |  |  | +0.0          | 53.7         | 92.5                     | -38.8        | None         |
| 3  | 2706.705M   | 50.4         | +1.1     |  |  |  | +0.0          | 51.5         | 92.5                     | -41.0        | None         |
| 4  | 896.426M    | 50.1         | +0.6     |  |  |  | +0.0          | 50.7         | 92.5                     | -41.8        | None         |
| 5  | 900.990M    | 47.5         | +0.6     |  |  |  | +0.0          | 48.1         | 92.5                     | -44.4        | None         |
| 6  | 903.873M    | 47.3         | +0.6     |  |  |  | +0.0          | 47.9         | 92.5                     | -44.6        | None         |
| 7  | 791.801M    | 46.3         | +0.6     |  |  |  | +0.0          | 46.9         | 92.5                     | -45.6        | None         |
| 8  | 1002.002M   | 46.0         | +0.6     |  |  |  | +0.0          | 46.6         | 92.5                     | -45.9        | None         |
| 9  | 908.317M    | 45.4         | +0.6     |  |  |  | +0.0          | 46.0         | 92.5                     | -46.5        | None         |
| 10 | 452.582M    | 44.9         | +0.5     |  |  |  | +0.0          | 45.4         | 92.5                     | -47.1        | None         |

|    |           |      |      |      |      |      |       |      |
|----|-----------|------|------|------|------|------|-------|------|
| 11 | 897.987M  | 44.8 | +0.6 | +0.0 | 45.4 | 92.5 | -47.1 | None |
| 12 | 6983.978M | 43.3 | +1.9 | +0.0 | 45.2 | 92.5 | -47.3 | None |
| 13 | 3609.607M | 43.7 | +1.3 | +0.0 | 45.0 | 92.5 | -47.5 | None |
| 14 | 4511.508M | 43.5 | +1.4 | +0.0 | 44.9 | 92.5 | -47.6 | None |
| 15 | 889.098M  | 43.9 | +0.6 | +0.0 | 44.5 | 92.5 | -48.0 | None |

CKC Laboratories Date: 05/06/2005 Time: 9:58:55 AM Davis Instruments WVO#: 83394  
15.247(c) Antenna Conducted Test Distance: None Sequence#: 3  
Davis Instruments MN 762xOV





Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **83394**  
 Test Type: **Antenna Terminals**  
 Equipment: **VP2 Wireless Repeater**  
 Manufacturer: Davis Instruments  
 Model: 765x  
 S/N: Davis-765x-05

Date: 05/06/2005  
 Time: 10:12:16 AM  
 Sequence#: 4  
 Tested By: Randal Clark

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated, Channel 25 (Mid). Antenna configuration: External Connector. Frequency Range Investigated: 1MHz to 10GHz. Temperature: 20°C, Relative Humidity: 58%.

**Transducer Legend:**

|                     |
|---------------------|
| T1=Cable 40 GHz 36" |
|---------------------|

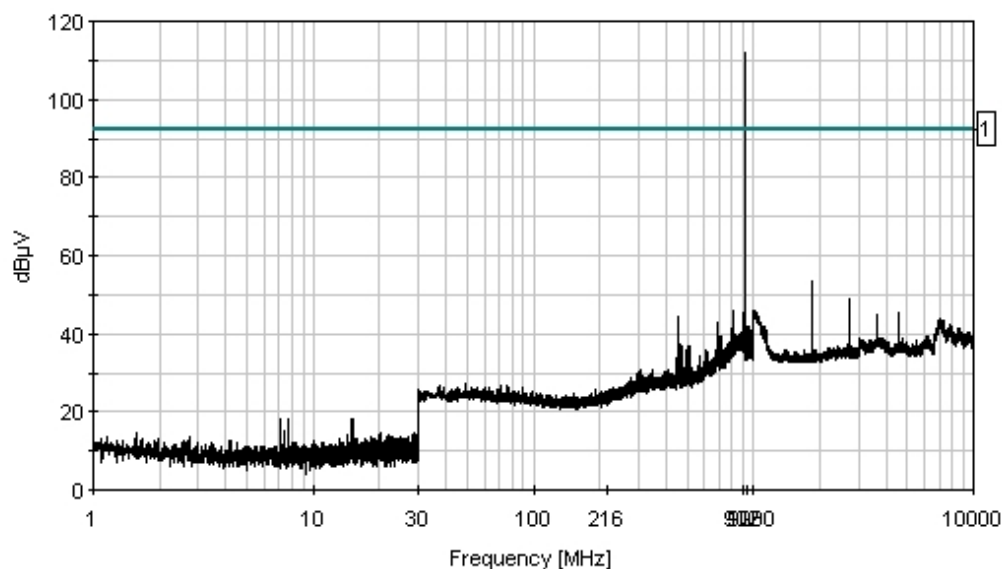
**Measurement Data:** Reading listed by margin.

Test Distance: None

| #  | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB |  |  |  | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV             | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------|----------|--|--|--|---------------|--------------|--------------------------|--------------|--------------|
| 1  | 914.924M    | 111.8        | +0.6     |  |  |  | +0.0          | 112.4        | 137.0                    | -24.6        | None         |
|    |             |              |          |  |  |  |               |              | Carrier - Mid<br>Channel |              |              |
| 2  | 1829.829M   | 52.4         | +0.9     |  |  |  | +0.0          | 53.3         | 92.5                     | -39.2        | None         |
| 3  | 2744.743M   | 47.7         | +1.1     |  |  |  | +0.0          | 48.8         | 92.5                     | -43.7        | None         |
| 4  | 907.837M    | 47.9         | +0.6     |  |  |  | +0.0          | 48.5         | 92.5                     | -44.0        | None         |
| 5  | 907.236M    | 47.3         | +0.6     |  |  |  | +0.0          | 47.9         | 92.5                     | -44.6        | None         |
| 6  | 911.080M    | 45.5         | +0.6     |  |  |  | +0.0          | 46.1         | 92.5                     | -46.4        | None         |
| 7  | 804.294M    | 45.4         | +0.6     |  |  |  | +0.0          | 46.0         | 92.5                     | -46.5        | None         |
| 8  | 1001.001M   | 45.4         | +0.6     |  |  |  | +0.0          | 46.0         | 92.5                     | -46.5        | None         |
| 9  | 899.789M    | 45.0         | +0.6     |  |  |  | +0.0          | 45.6         | 92.5                     | -46.9        | None         |
| 10 | 4574.571M   | 44.1         | +1.4     |  |  |  | +0.0          | 45.5         | 92.5                     | -47.0        | None         |

|    |           |      |      |      |      |      |       |      |
|----|-----------|------|------|------|------|------|-------|------|
| 11 | 907.597M  | 44.6 | +0.6 | +0.0 | 45.2 | 92.5 | -47.3 | None |
| 12 | 3659.657M | 43.6 | +1.3 | +0.0 | 44.9 | 92.5 | -47.6 | None |
| 13 | 1038.038M | 44.1 | +0.7 | +0.0 | 44.8 | 92.5 | -47.7 | None |
| 14 | 1046.046M | 44.0 | +0.7 | +0.0 | 44.7 | 92.5 | -47.8 | None |
| 15 | 921.891M  | 44.0 | +0.6 | +0.0 | 44.6 | 92.5 | -47.9 | None |

CKC Laboratories Date: 05/06/2005 Time: 10:12:16 AM Davis Instruments WVO#: 83394  
15.247(c) Antenna Conducted Test Distance: None Sequence#: 4  
Davis Instruments M/N 762xOV



— Sweep Data      — 1 - 15.247(c) Antenna Conducted

Test Location: CKC Laboratories • 5473A Clouds Rest • Mariposa, CA 95338 • 1-800-500-4EMC (4362)

Customer: **Davis Instruments**  
 Specification: **15.247(c) Antenna Conducted**  
 Work Order #: **83394**  
 Test Type: **Antenna Terminals**  
 Equipment: **VP2 Wireless Repeater**  
 Manufacturer: Davis Instruments  
 Model: 765x  
 S/N: Davis-765x-05

Date: 05/06/2005  
 Time: 10:48:35 AM  
 Sequence#: 5  
 Tested By: Randal Clark

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

| Function               | Manufacturer      | Model # | S/N           |
|------------------------|-------------------|---------|---------------|
| VP2 Wireless Repeater* | Davis Instruments | 765x    | Davis-765x-05 |

**Support Devices:**

| Function      | Manufacturer      | Model # | S/N |
|---------------|-------------------|---------|-----|
| Power Adapter | Davis Instruments | 6625    | NA  |

**Test Conditions / Notes:**

EUT is a repeater station for temperature monitoring systems. The equipment operates on a frequency range of 902-928MHz. Operating Configuration: Continuous Transmit Modulated, Channel 50 (High). Antenna configuration: External Connector. Frequency Range Investigated: 1MHz to 10GHz. Temperature: 20°C, Relative Humidity: 58%.

**Transducer Legend:**

|                     |
|---------------------|
| T1=Cable 40 GHz 36" |
|---------------------|

**Measurement Data:** Reading listed by margin.

Test Distance: None

| #  | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB |  |  |  | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV              | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------|----------|--|--|--|---------------|--------------|---------------------------|--------------|--------------|
| 1  | 927.417M    | 111.5        | +0.6     |  |  |  | +0.0          | 112.1        | 137.0                     | -24.9        | None         |
|    |             |              |          |  |  |  |               |              | Carrier - High<br>Channel |              |              |
| 2  | 2468.467M   | 65.8         | +1.0     |  |  |  | +0.0          | 66.8         | 92.5                      | -25.7        | None         |
| 3  | 2478.477M   | 62.2         | +1.0     |  |  |  | +0.0          | 63.2         | 92.5                      | -29.3        | None         |
| 4  | 1854.854M   | 52.5         | +0.9     |  |  |  | +0.0          | 53.4         | 92.5                      | -39.1        | None         |
| 5  | 4637.634M   | 48.2         | +1.4     |  |  |  | +0.0          | 49.6         | 92.5                      | -42.9        | None         |
| 6  | 2781.780M   | 47.1         | +1.1     |  |  |  | +0.0          | 48.2         | 92.5                      | -44.3        | None         |
| 7  | 1007.007M   | 46.0         | +0.6     |  |  |  | +0.0          | 46.6         | 92.5                      | -45.9        | None         |
| 8  | 928.017M    | 45.5         | +0.6     |  |  |  | +0.0          | 46.1         | 92.5                      | -46.4        | None         |
| 9  | 1000.000M   | 45.5         | +0.6     |  |  |  | +0.0          | 46.1         | 92.5                      | -46.4        | None         |
| 10 | 934.023M    | 45.4         | +0.6     |  |  |  | +0.0          | 46.0         | 92.5                      | -46.5        | None         |

|    |           |      |      |      |      |      |       |      |
|----|-----------|------|------|------|------|------|-------|------|
| 11 | 1009.009M | 45.2 | +0.6 | +0.0 | 45.8 | 92.5 | -46.7 | None |
| 12 | 816.906M  | 44.3 | +0.6 | +0.0 | 44.9 | 92.5 | -47.6 | None |
| 13 | 7122.116M | 41.9 | +1.9 | +0.0 | 43.8 | 92.5 | -48.7 | None |
| 14 | 6957.952M | 41.6 | +1.9 | +0.0 | 43.5 | 92.5 | -49.0 | None |
| 15 | 6992.987M | 41.5 | +1.9 | +0.0 | 43.4 | 92.5 | -49.1 | None |

CKC Laboratories Date: 05/06/2005 Time: 10:48:35 AM Davis Instruments WFO#: 83394  
15.247(c) Antenna Conducted Test Distance: None Sequence#: 5  
Davis Instruments MN 762xOV

