



TESTING

CERT #803.01, 803.02, 803.05, 803.06

**ZILLIONTV CORPORATION  
ADDENDUM TEST REPORT TO FC09-038**

**FOR THE**

**WIRELESS REMOTE CONTROL, ZR102**

**FCC PART 15 SUBPART C SECTIONS 15.207 & 15.247  
AND RSS-210 ISSUE 7**

**TESTING**

**DATE OF ISSUE: APRIL 24, 2009**

**PREPARED FOR:**

ZillionTV Corporation  
1170 Kifer Road  
Sunnyvale, CA 94086

**PREPARED BY:**

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Mariposa, CA 95338

W.O. No.: 89171

Date of test: March 11-12, 2009

**Report No.: FC09-038A**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** March 11-12, 2009

**DATE OF RECEIPT:** March 11, 2009

**REPRESENTATIVE:** Tom Woch

**MANUFACTURER:**

ZillionTV Corporation  
1170 Kifer Road  
Sunnyvale, CA 94086

**TEST LOCATION:**

CKC Laboratories, Inc.  
110 Olinda Place  
Brea, CA 92823

**TEST METHOD:** ANSI C63.4 (2003), RSS-210 Issue 7 and RSS GEN Issue 2

**PURPOSE OF TEST:**

**Original:** To perform the testing of the Wireless Remote Control, ZR102 with the requirements for FCC Part 15 Subpart C Sections 15.207 & 15.247 and RSS-210 Issue 7 devices.

**Addendum A:** To correct the spec limit used in section 15.247(d) OATS Radiated Spurious Emissions. Corrections were also made to 6dB Bandwidth table on page 13 and RF Power Output table on page 19. No new testing was performed.

## APPROVALS

Steve Behm, Director of Engineering Services

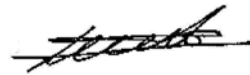
**QUALITY ASSURANCE:**



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Steve Behm, Director of Engineering Services

**TEST PERSONNEL:**



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Armando Del Angel, Test Engineer



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Donald Jones, Senior EMC Engineer / Lab Manager

## SUMMARY OF RESULTS

| Test                        | Specification/Method                | Results |
|-----------------------------|-------------------------------------|---------|
| Voltage Variation           | FCC 15.31(e)                        | Pass    |
| 6 dB Bandwidth              | FCC 15.247(a)(2)                    | Pass    |
| RF Output Power             | FCC 15.247(b)(3)                    | Pass    |
| OATS Spurious Emissions     | FCC 15.247(d)                       | Pass    |
| Bandedge                    | FCC 15.247(d)                       | Pass    |
| Peak Power Spectral Density | FCC 15.247(e)                       | Pass    |
| 99% Bandwidth               | RSS-210 Issue 7 and RSS GEN Issue 2 | Pass    |
| Site File No.               | FCC 318736<br>IC 3082C-1            |         |

## CONDITIONS DURING TESTING

No modifications to the EUT were necessary during testing.

### FCC 15.31(m) Number Of Channels

This device was tested on three channels.

### FCC 15.33(a) Frequency Ranges Tested

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.247 Radiate Emissions: 9 kHz – 10 GHz.

### EUT Operating Frequency

The EUT was operating at 903 MHz – 927 MHz

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

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

## **EQUIPMENT UNDER TEST**

### **Wireless Remote Control**

Manuf: ZillionTV Corporation  
Model: ZR102  
Serial: 013

## **PERIPHERAL DEVICES**

The EUT was not tested with peripheral devices.

### **USB Base Station**

Manuf: ZillionTV Corporation  
Model: ZA100  
Serial: 013

### **Laptop**

Manuf: Lenovo  
Model: T61  
Serial: 10156

## MEASUREMENT UNCERTAINTIES

| Uncertainty Value | Parameter                 |
|-------------------|---------------------------|
| 4.73 dB           | Radiated Emissions        |
| 3.34 dB           | Mains Conducted Emissions |
| 3.30 dB           | Disturbance Power         |

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ . Compliance is deemed to occur provided measurements are below the specified limits.

## REPORT OF EMISSIONS MEASUREMENTS

### TESTING PARAMETERS

#### TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within  $+15^{\circ}\text{C}$  and  $+35^{\circ}\text{C}$ .  
The relative humidity was between 20% and 75%.

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

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. 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  $\text{dB}\mu\text{V}/\text{m}$ , the spectrum analyzer reading in  $\text{dB}\mu\text{V}$  was corrected by using the following formula. This reading was then compared to the applicable specification limit.

| SAMPLE CALCULATIONS |                     |                |
|---------------------|---------------------|----------------|
|                     | Meter reading       | (dB $\mu$ V)   |
| +                   | Antenna Factor      | (dB)           |
| +                   | Cable Loss          | (dB)           |
| -                   | Distance Correction | (dB)           |
| -                   | Preamplifier Gain   | (dB)           |
| =                   | Corrected Reading   | (dB $\mu$ V/m) |

## TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. The following table shows the measuring equipment bandwidth settings that were used in designated frequency bands. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used. When conducted emissions testing was performed, a 10 dB external attenuator was used with internal offset correction in the analyzer.

## SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions 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 highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. 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/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device 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 quasi-peak detector.

### Average

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

## FCC 15.31(e) VOLTAGE VARIATIONS

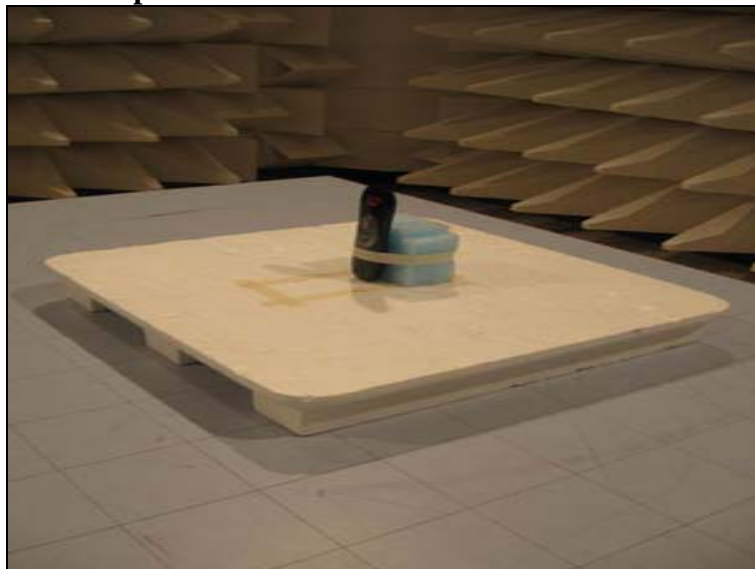
### Test Equipment

| Asset #  | Equipment       | Serial #   | Cal Date   | Cal Due    |
|----------|-----------------|------------|------------|------------|
| ANP05361 | Cable 6'        | 51         | 12/30/2008 | 12/30/2010 |
| AN01994  | Antenna         | 2453       | 12/22/2008 | 12/22/2010 |
| ANP05366 | Cable 30'       | 11         | 11/5/2008  | 11/5/2010  |
| ANP05371 | Cable 6'        | 49         | 11/10/2008 | 11/10/2010 |
| ANP05360 | Cable 20'       | 16         | 11/10/2008 | 11/10/2010 |
| AN01517  | HP 8447D Preamp | 2944A08601 | 7/8/2008   | 7/8/2010   |
| AN02872  | Agilent E4440A  | MY46186330 | 1/31/2008  | 1/31/2010  |

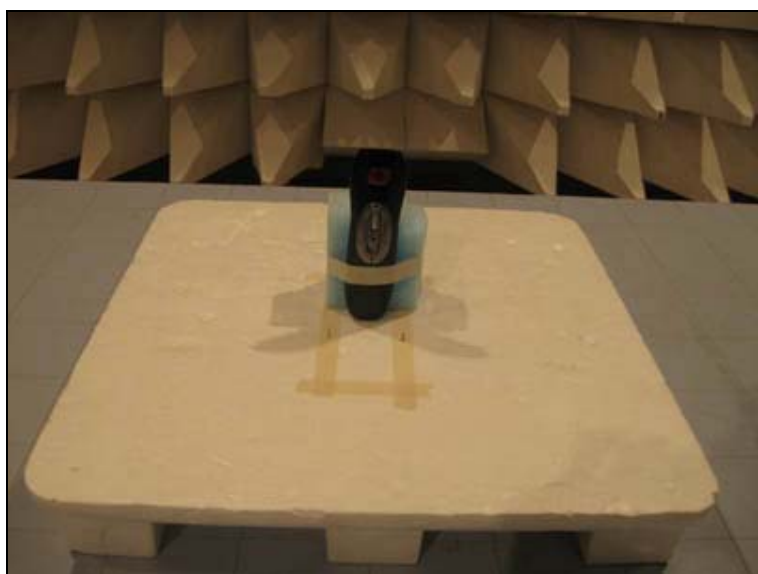
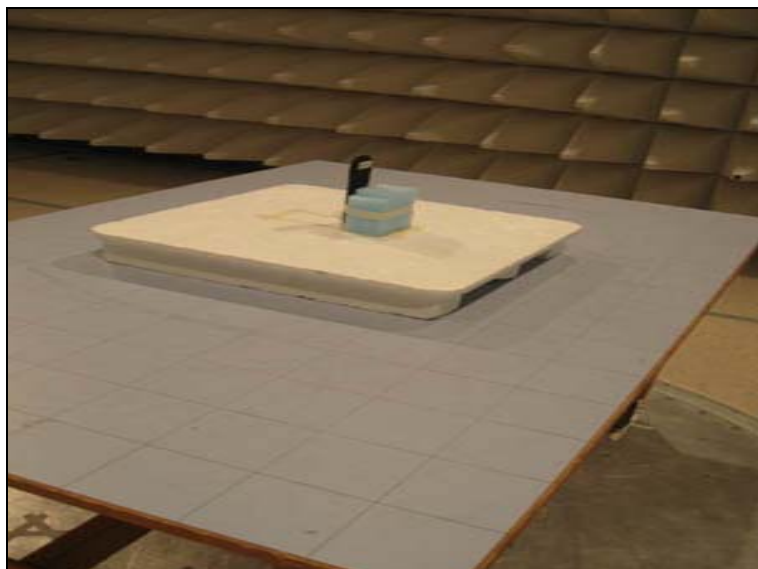
### Test Conditions

The EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. Since the EUT is battery powered the test only requires to be performed with fresh batteries. EUT is located in the center of the test table over 10cm of Styrofoam. The support equipment is used before each test to set the EUT to the specific channel. The Fundamental emission will be maximized per ANSI C63.4 procedures. EMI test will be used with the solely purpose of accurate Field Strength data gathering. Same calculation from the RF power output test will be done in order to convert the field strength to power.

### Test Setup Photos







#### Test Data

|             | Fresh Battery |            | Limit |
|-------------|---------------|------------|-------|
|             | Vertical      | Horizontal |       |
| <b>LOW</b>  | 2.468dBm      | -9.932dBm  | 30dBm |
| <b>MID</b>  | 1.968dBm      | -14.132dBm | 30dBm |
| <b>HIGH</b> | 0.868dBm      | -11.432dBm | 30dBm |

## Test Data Sheets

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Zillion TV Corporation.**  
 Specification: **15.247(b)(3) RF power Output - Radiated**  
 Work Order #: **89171** Date: 3/12/2009  
 Test Type: **Radiated Scan** Time: 14:45:27  
 Equipment: **Wireless Remote Control** Sequence#: 1  
 Manufacturer: ZillionTV Corporation Tested By: Armando Del Angel  
 Model: ZR102  
 S/N: 013

### Test Equipment:

| Function        | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-----------------|------------|------------------|--------------|----------|
| HP 8447D Preamp | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A  | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'        | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna         | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'       | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'        | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'       | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

### Support Devices:

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

### Test Conditions / Notes:

Temp = 20°C  
 Relative Humidity = 19%  
 Atmospheric Pressure = 103.7kPa

Testing Voltage Variation on Power FCC 15.31(e)

The EUT is a wireless remote control.  
 The EUT is located in the center of the test table raised 10cm with styrofoam.  
 The EUT will be transmitting in the LOW, MID and HIGH channels.  
 The support equipment is used before each test to set the EUT to the specific channel.  
 The Test is being done with fresh batteries.  
 Because of the lack of antenna connectors the test will have to be done through radiated scans.

RBW = 1MHz  
 VBW = 3MHz  
 Span = 5MHz  
 Sweep = 20ms

**Transducer Legend:**

|                           |                       |
|---------------------------|-----------------------|
| T1=ANT AN01994 25-1000MHz | T2=CAB-ANP05360       |
| T3=CAB-ANP05361           | T4=CAB-ANP05366       |
| T5=CAB-ANP05371           | T6=AMP-AN01517-070808 |

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

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>T5<br>dB | T2<br>T6<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV  | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------------|----------------|----------|----------|---------------|--------------|---------------|--------------|--------------|
| 1 | 902.815M    | 100.2        | +23.1<br>+0.3  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>340   | 98.7         | 137.0<br>LOW  | -38.3        | Vert<br>100  |
| 2 | 914.792M    | 99.4         | +23.3<br>+0.4  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>340   | 98.2         | 137.0<br>MID  | -38.8        | Vert<br>100  |
| 3 | 926.766M    | 97.8         | +23.5<br>+0.5  | +2.0<br>-29.2  | +0.5     | +2.0     | +0.0<br>340   | 97.1         | 137.0<br>HIGH | -39.9        | Vert<br>100  |
| 4 | 902.808M    | 87.8         | +23.1<br>+0.3  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>204   | 86.3         | 137.0<br>LOW  | -50.7        | Horiz<br>100 |
| 5 | 914.796M    | 86.0         | +23.3<br>+0.4  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>204   | 84.8         | 137.0<br>MID  | -52.2        | Horiz<br>100 |
| 6 | 926.762M    | 82.8         | +23.5<br>+0.5  | +2.0<br>-29.2  | +0.5     | +2.0     | +0.0<br>204   | 82.1         | 137.0<br>HIGH | -54.9        | Horiz<br>100 |

## FCC Part 15.247(a)(2) 6dB BANDWIDTH

### Test Equipment

| Asset #  | Equipment       | Serial #   | Cal Date   | Cal Due    |
|----------|-----------------|------------|------------|------------|
| ANP05361 | Cable 6'        | 51         | 12/30/2008 | 12/30/2010 |
| AN01994  | Antenna         | 2453       | 12/22/2008 | 12/22/2010 |
| ANP05366 | Cable 30'       | 11         | 11/5/2008  | 11/5/2010  |
| ANP05371 | Cable 6'        | 49         | 11/10/2008 | 11/10/2010 |
| ANP05360 | Cable 20'       | 16         | 11/10/2008 | 11/10/2010 |
| AN01517  | HP 8447D Preamp | 2944A08601 | 7/8/2008   | 7/8/2010   |
| AN02872  | Agilent E4440A  | MY46186330 | 1/31/2008  | 1/31/2010  |

### Test Conditions

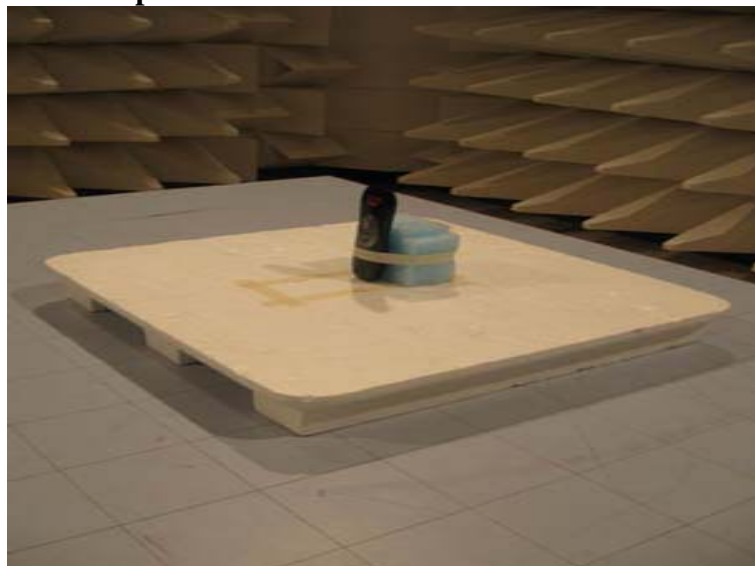
EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located in the center of the test table over 10cm of Styrofoam. The support equipment is used before each test to set the EUT to the specific channel. PSA is on max hold, marker-to-peak function is set on the peak of each channel (LOW, MID, HIGH), and then the marker will be positioned 6dB below the peak on one side and then on the other side, the separation between those two is the 6dB bandwidth.

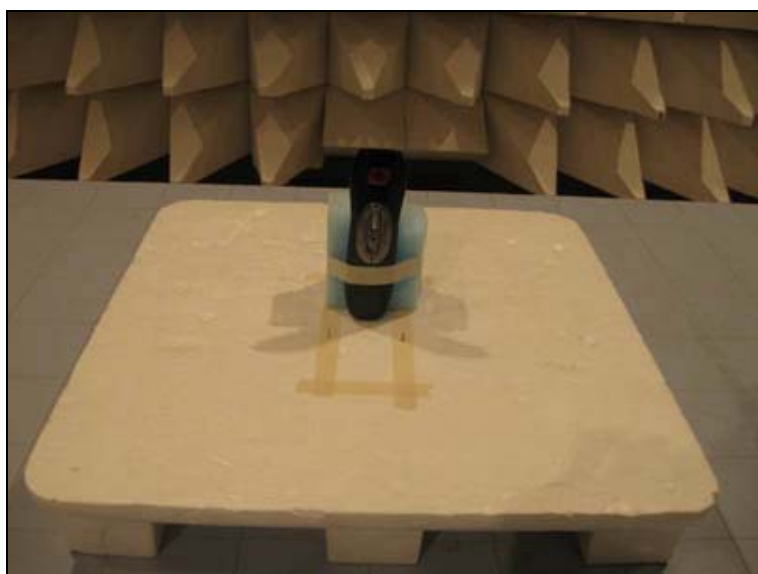
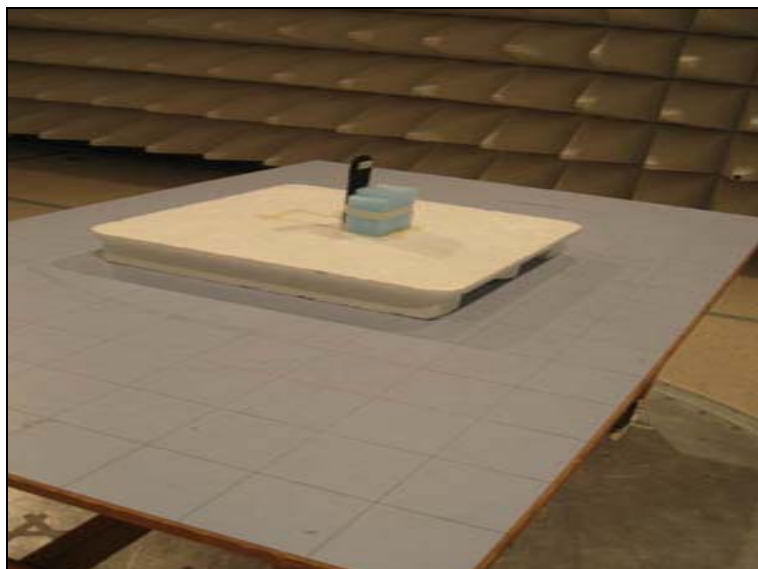
RBW = 120 kHz

VBW = 120 kHz

Span = Wide enough to see all the signal

### Test Setup Photos



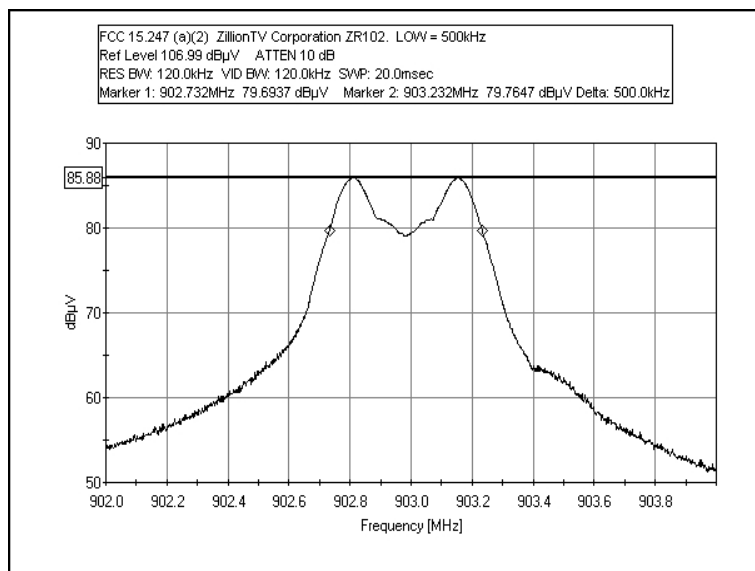


#### Test Data

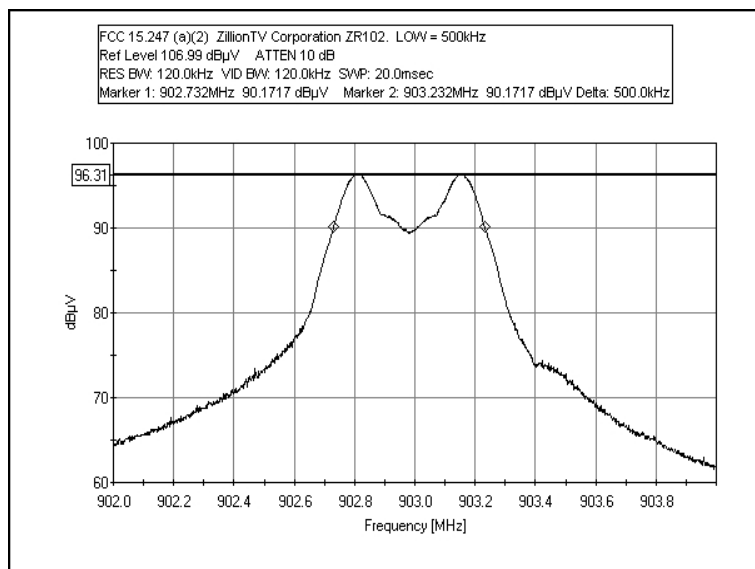
| Channel | 6dB Bandwidth |            | Limit  |
|---------|---------------|------------|--------|
|         | Vertical      | Horizontal |        |
| LOW     | 500kHz        | 500kHz     | 500kHz |
| MID     | 502kHz        | 502kHz     | 500kHz |
| HIGH    | 500kHz        | 500kHz     | 500kHz |

## Test Plots

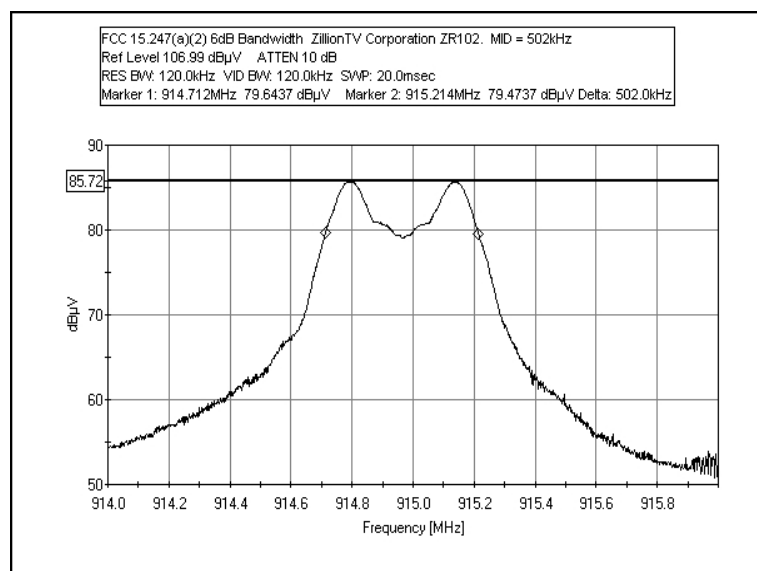
### FCC 15.247(a)(2) 6dB BANDWIDTH – LOW CHANNEL HORIZONTAL



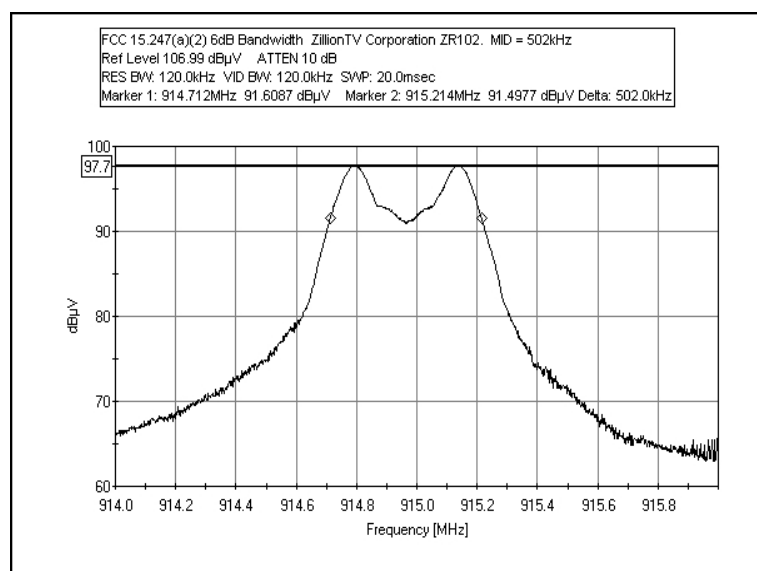
### FCC 15.247(a)(2) 6dB BANDWIDTH – LOW CHANNEL VERTICAL



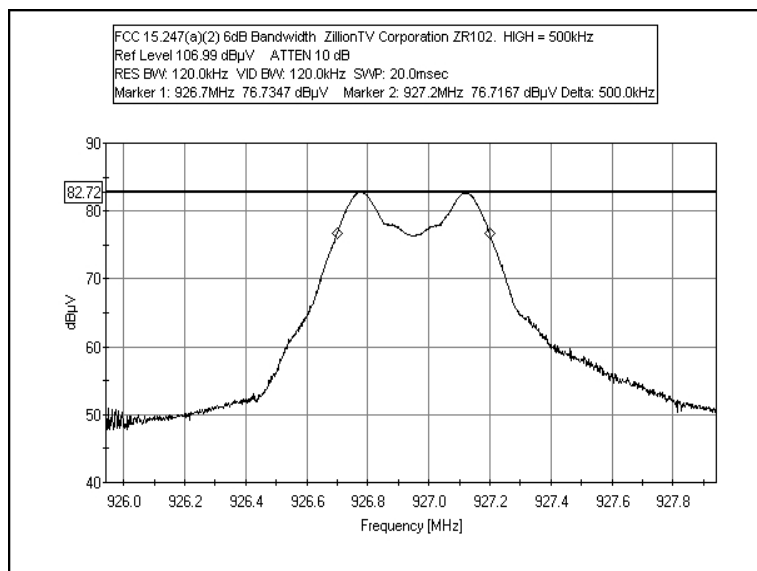
## FCC 15.247(a)(2) 6dB BANDWIDTH – MID CHANNEL HORIZONTAL



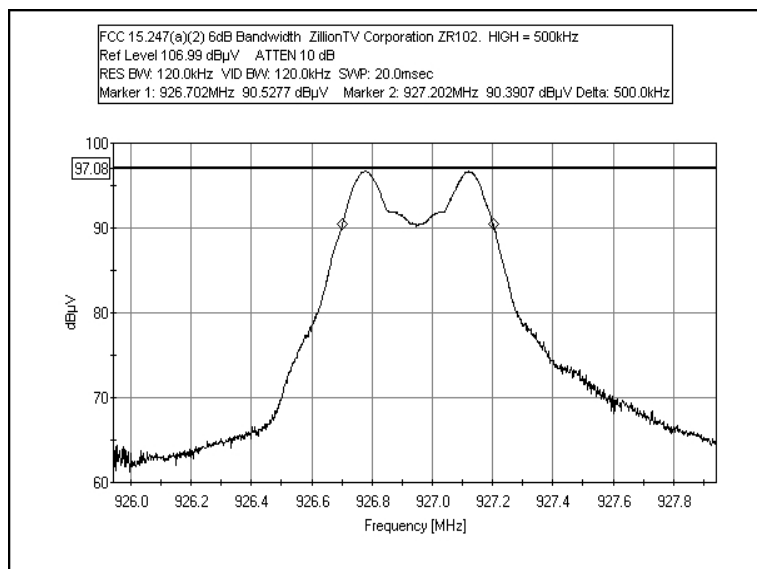
## FCC 15.247(a)(2) 6dB BANDWIDTH – MID CHANNEL VERTICAL



## FCC 15.247(a)(2) 6dB BANDWIDTH – HIGH CHANNEL HORIZONTAL



## FCC 15.247(a)(2) 6dB BANDWIDTH – HIGH CHANNEL VERTICAL





## FCC Part 15.247(b)(3) RF POWER OUTPUT

### Test Equipment

| Asset #  | Equipment       | Serial #   | Cal Date   | Cal Due    |
|----------|-----------------|------------|------------|------------|
| ANP05361 | Cable 6'        | 51         | 12/30/2008 | 12/30/2010 |
| AN01994  | Antenna         | 2453       | 12/22/2008 | 12/22/2010 |
| ANP05366 | Cable 30'       | 11         | 11/5/2008  | 11/5/2010  |
| ANP05371 | Cable 6'        | 49         | 11/10/2008 | 11/10/2010 |
| ANP05360 | Cable 20'       | 16         | 11/10/2008 | 11/10/2010 |
| AN01517  | HP 8447D Preamp | 2944A08601 | 7/8/2008   | 7/8/2010   |
| AN02872  | Agilent E4440A  | MY46186330 | 1/31/2008  | 1/31/2010  |

### Test Conditions

The EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located in the center of the test table over 10cm of Styrofoam. The support equipment is used before each test to set the EUT to the specific channel. The Fundamental's emission will be maximized per ANSI C63.4 procedures. EMI test will be used with the solely purpose of accurate Field Strength data gathering. The following calculation will be used per FCC procedures in order to obtain the transmitter peak power:

$$P = (E \cdot d)^2 / (30 \cdot G)$$

E: Is the field strength in V/m

G: Is the numeric gain of the transmitting antenna with reference to an isotropic radiator.

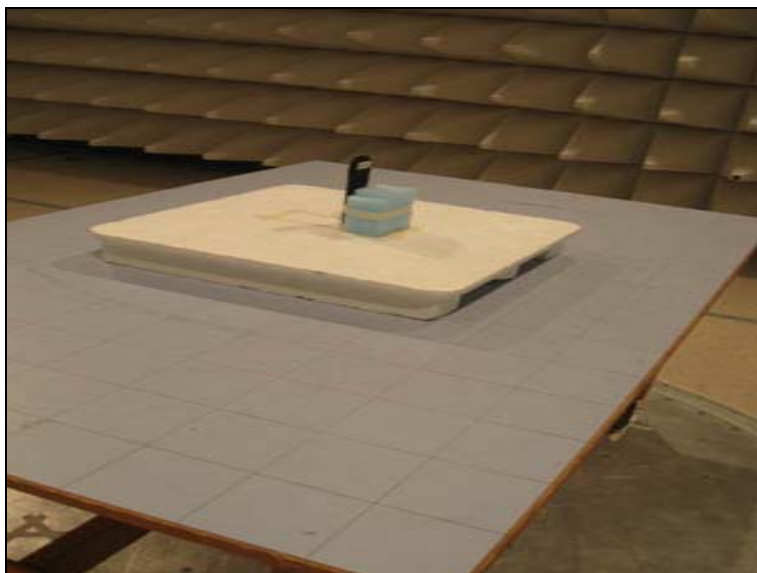
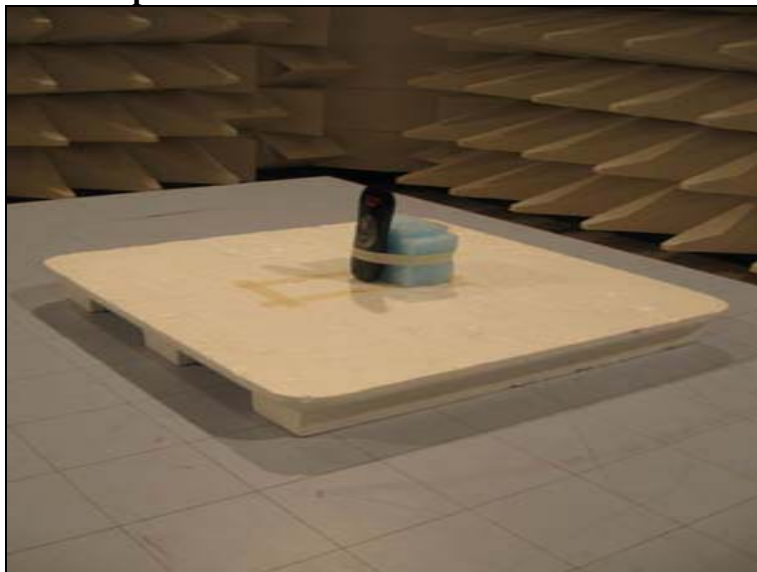
d: Is the distance at which the measurement is being executed.

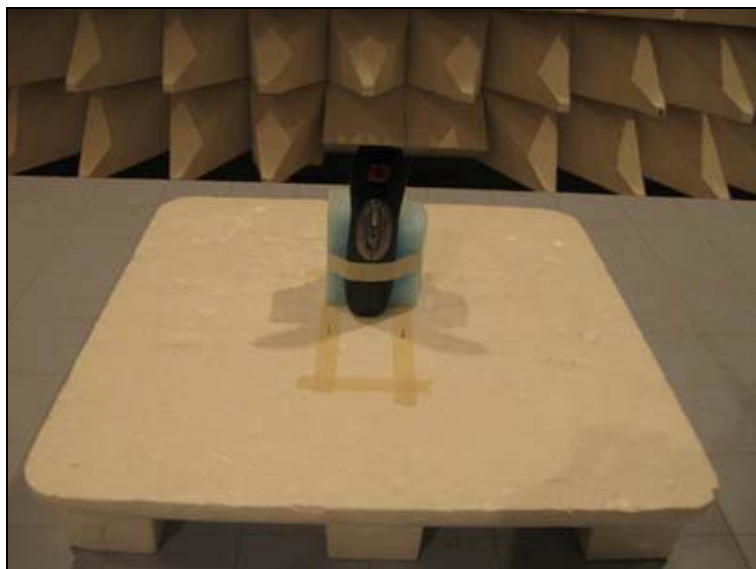
RBW = 1 MHz

VBW = 1 MHz

Span = Wide enough to see all the signal

### Test Setup Photos





#### Test Data

|             | Vertical |         | Horizontal |           | LIMIT |
|-------------|----------|---------|------------|-----------|-------|
|             | F/S      | Power   | F/S        | Power     |       |
| <b>LOW</b>  | 98.5dBuV | 2.26dBm | 85.7dBuV   | -10.53dBm | 30dBm |
| <b>MID</b>  | 98.2dBuV | 1.97dBm | 85.3dBuV   | -10.93dBm | 30dBm |
| <b>HIGH</b> | 97.1dBuV | 0.87dBm | 82.1dBuV   | -14.13dBm | 30dBm |

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Zillion TV Corporation.**

Specification: **15.247(b)(3) RF power Output - Radiated**

Work Order #: **89171**

Date: 3/11/2009

Test Type: **Radiated Scan**

Time: 14:01:25

Equipment: **Wireless Remote Control**

Sequence#: 1

Manufacturer: ZillionTV Corporation

Tested By: Armando Del Angel

Model: ZR102

S/N: 013

**Test Equipment:**

| Function        | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-----------------|------------|------------------|--------------|----------|
| HP 8447D Preamp | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A  | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'        | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna         | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'       | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'        | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'       | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

**Support Devices:**

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

**Test Conditions / Notes:**

|  |
|--|
| <p>Temp = 20°C<br/> Relative Humidity = 19%<br/> Atmospheric Pressure = 103.7kPa</p> <p>Testing RF Power Output FCC 15.247(b)(3)</p> <p>The EUT is a wireless remote control.<br/> The EUT is located in the center of the test table raised 10cm with styrofoam.<br/> The EUT will be transmitting in the LOW, MID and HIGH channels.<br/> The support equipment is used before each test to set the EUT to the specific channel.<br/> The Test is being done with fresh batteries.<br/> Because of the lack of antenna connectors the test will have to be done through radiated scans.</p> <p>RBW = 1MHz<br/> VBW = 3MHz<br/> Span = 5MHz<br/> Sweep = 20ms</p> |
|--|

**Transducer Legend:**

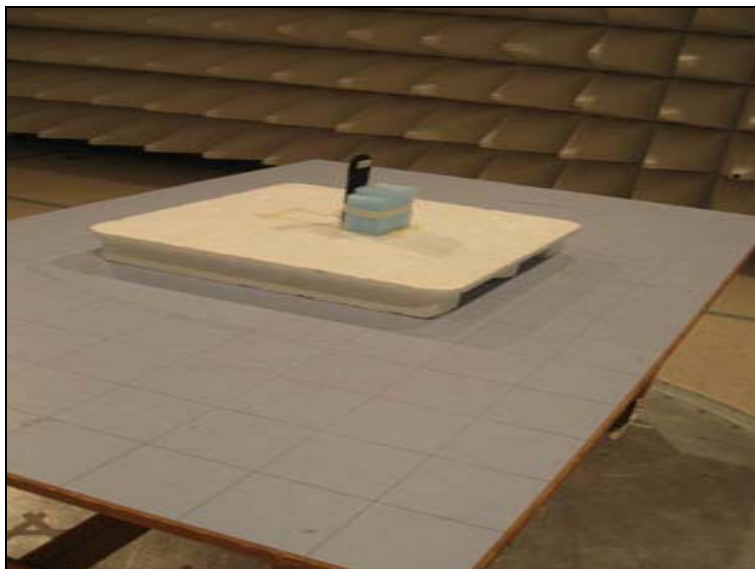
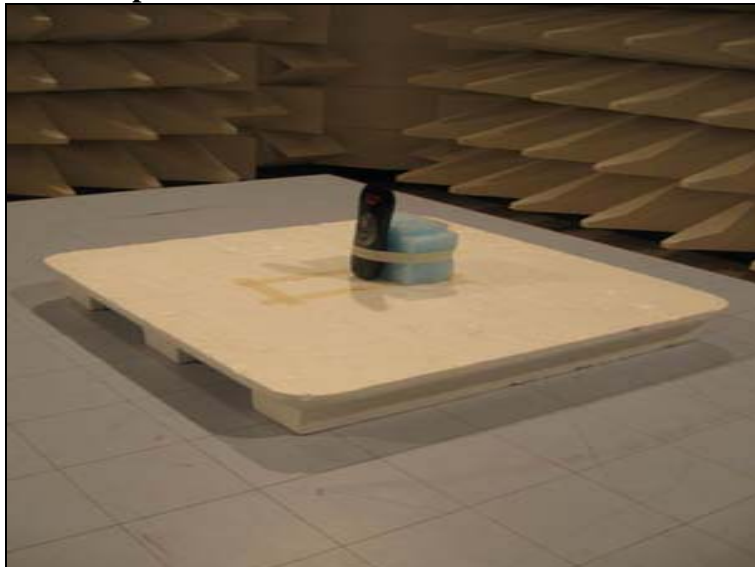
|                           |                       |
|---------------------------|-----------------------|
| T1=ANT AN01994 25-1000MHz | T2=CAB-ANP05360       |
| T3=CAB-ANP05361           | T4=CAB-ANP05366       |
| T5=CAB-ANP05371           | T6=AMP-AN01517-070808 |

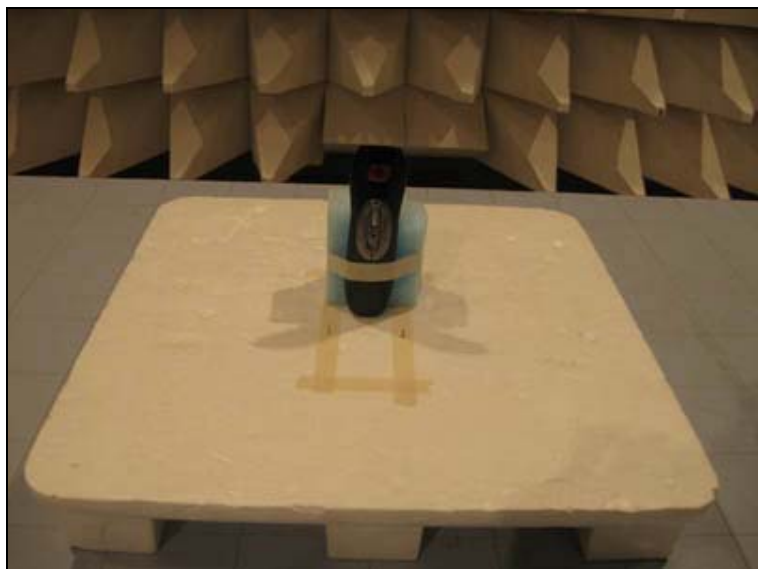
**Measurement Data:** Reading listed by margin. Test Distance: 3 Meters

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>T5<br>dB | T2<br>T6<br>dB | T3<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV | Spec<br>dBμV  | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------------|----------------|----------|----------|---------------|--------------|---------------|--------------|--------------|
| 1 | 902.815M    | 100.0        | +23.1<br>+0.3  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>340   | 98.5         | 137.0<br>LOW  | -38.5        | Vert<br>100  |
| 2 | 914.792M    | 99.4         | +23.3<br>+0.4  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>340   | 98.2         | 137.0<br>MID  | -38.8        | Vert<br>100  |
| 3 | 926.766M    | 97.8         | +23.5<br>+0.5  | +2.0<br>-29.2  | +0.5     | +2.0     | +0.0<br>340   | 97.1         | 137.0<br>HIGH | -39.9        | Vert<br>100  |
| 4 | 902.808M    | 87.2         | +23.1<br>+0.3  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>204   | 85.7         | 137.0<br>LOW  | -51.3        | Horiz<br>100 |
| 5 | 914.796M    | 86.5         | +23.3<br>+0.4  | +1.9<br>-29.3  | +0.5     | +2.0     | +0.0<br>204   | 85.3         | 137.0<br>MID  | -51.7        | Horiz<br>100 |
| 6 | 926.762M    | 82.8         | +23.5<br>+0.5  | +2.0<br>-29.2  | +0.5     | +2.0     | +0.0<br>204   | 82.1         | 137.0<br>HIGH | -54.9        | Horiz<br>100 |

**FCC 15.247(d) OATS RADIATED SPURIOUS EMISSIONS**

**Test Setup Photos**





## Test Data Sheets

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Zillion TV Corporation.**

Specification: **FCC 15.247/15.209**

Work Order #: **89171**

Date: 3/12/2009

Test Type: **Radiated Scan**

Time: 14:00:05

Equipment: **Wireless Remote Control**

Sequence#: 2

Manufacturer: ZillionTV Corporation

Tested By: Armando Del Angel

Model: ZR102

S/N: 013

### Test Equipment:

| Function          | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-------------------|------------|------------------|--------------|----------|
| HP 8447D Preamp   | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A    | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'          | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna           | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'         | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'          | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'         | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |
| Helix cable       | N/A        | 07/22/2008       | 07/22/2010   | AN05545  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03123  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03121  |
| EMCO 3115 Horn    | 9606-4854  | 11/12/2007       | 11/12/2009   | AN01412  |
| HP 83017A Pre-amp | 3123A00464 | 10/02/2007       | 10/02/2009   | AN01271  |
| High Pass Filter  | 2          | 05/01/2008       | 05/01/2010   | 02750    |
| Mag Loop          | 2156       | 06/04/2008       | 06/04/2010   | AN00052  |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

### Support Devices:

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

### Test Conditions / Notes:

Temp = 20°C

Rel. Humidity = 19%

Atm. Pressure = 103.7kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is a wireless remote control.

The EUT is located in the center of the test table raised 10cm with styrofoam.

The EUT will be transmitting in the LOW channel.

The support equipment is used before each test to set the EUT to the specific channel.

The Test is being done with fresh batteries.

Because of the lack of antenna connectors the test will have to be done through radiated scans.

0.009-0.150MHz RBW = 200Hz, VBW = 2kHz

0.150-30MHz RBW = 9kHz, VBW = 91kHz

30-1000MHz RBW = 120kHz, VBW = 1.2MHz

1000-10000MHz RBW = 1MHz, VBW = 8MHz



**Transducer Legend:**

|                            |                         |
|----------------------------|-------------------------|
| T1=ANT AN01994 25-1000MHz  | T2=CAB-ANP05360         |
| T3=CAB-ANP05361            | T4=CAB-ANP05366         |
| T5=CAB-ANP05371            | T6=AMP-AN01517-070808   |
| T7=AN01271 HP PreAmplifier | T8=ANT-AN01412-111207   |
| T9=Filter 1GHz HP AN02750  | T10=CAB-ANP03121-120208 |
| T11=CAB-ANP03123-120208    | T12=CAB-ANP05545-072208 |
| T13=ANT- AN00052-06042008  |                         |

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

| # | Freq                 | Rdng       | T1<br>T5<br>T9<br>T13         | T2<br>T6<br>T10       | T3<br>T7<br>T11       | T4<br>T8<br>T12       | Dist        | Corr         | Spec         | Margin | Polar        |
|---|----------------------|------------|-------------------------------|-----------------------|-----------------------|-----------------------|-------------|--------------|--------------|--------|--------------|
|   | MHz                  | dB $\mu$ V | dB                            | dB                    | dB                    | dB                    | Table       | dB $\mu$ V/m | dB $\mu$ V/m | dB     | Ant          |
| 1 | 5417.898M            | 37.3       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.3  | +0.0<br>-33.1<br>+1.0 | +0.0<br>+34.5<br>+3.9 | +0.0        | 46.2         | 54.0         | -7.8   | Horiz<br>99  |
| 2 | 7222.864M<br>Ambient | 32.6       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.3  | +0.0<br>-34.7<br>+1.1 | +0.0<br>+36.3<br>+4.7 | +0.0        | 42.6         | 54.0         | -11.4  | Horiz<br>99  |
| 3 | 900.000M<br>QP       | 35.3       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>204 | 33.8         | 46.0         | -12.2  | Horiz<br>100 |
| ^ | 900.000M             | 42.9       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>360 | 41.4         | 46.0         | -4.6   | Horiz<br>100 |
| 5 | 930.210M             | 33.3       | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>63  | 32.6         | 46.0         | -13.4  | Horiz<br>100 |
| 6 | 1805.886M            | 38.2       | +0.0<br>+0.0<br>+0.4<br>+0.0  | +0.0<br>+0.0<br>+1.1  | +0.0<br>-33.8<br>+0.5 | +0.0<br>+26.5<br>+2.2 | +0.0<br>360 | 35.1         | 54.0         | -18.9  | Horiz<br>99  |
| 7 | 949.390M<br>Ambient  | 23.8       | +23.8<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0  | +0.0        | 23.4         | 46.0         | -22.6  | Horiz<br>100 |
| 8 | 810.800M<br>Ambient  | 23.9       | +22.6<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.5<br>+0.0 | +0.4<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>360 | 21.8         | 46.0         | -24.2  | Horiz<br>100 |
| 9 | 659.200M<br>Ambient  | 25.3       | +20.4<br>+0.4<br>+0.0<br>+0.0 | +1.6<br>-29.7<br>+0.0 | +0.4<br>+0.0<br>+0.0  | +1.8<br>+0.0<br>+0.0  | +0.0<br>360 | 20.2         | 46.0         | -25.8  | Horiz<br>100 |

|    |                     |      |                               |                               |                              |                              |              |       |                      |       |              |
|----|---------------------|------|-------------------------------|-------------------------------|------------------------------|------------------------------|--------------|-------|----------------------|-------|--------------|
| 10 | 458.170M<br>Ambient | 27.6 | +17.4<br>+0.5<br>+0.0<br>+0.0 | +1.6<br>-29.3<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0 | +1.6<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 19.7  | 46.0                 | -26.3 | Horiz<br>100 |
| 11 | 578.200k<br>Ambient | 35.2 | +0.0<br>+0.1<br>+0.0<br>+9.9  | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -40.0<br>360 | 5.3   | 32.4                 | -27.1 | 90deg<br>141 |
| 12 | 530.800M<br>Ambient | 24.2 | +18.8<br>+0.4<br>+0.0<br>+0.0 | +1.5<br>-29.6<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0 | +1.6<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>360  | 17.3  | 46.0                 | -28.7 | Horiz<br>100 |
| 13 | 973.470M<br>Ambient | 23.6 | +24.1<br>+0.5<br>+0.0<br>+0.0 | +1.8<br>-29.1<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.2<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 23.6  | 54.0                 | -30.4 | Horiz<br>100 |
| 14 | 235.390M<br>Ambient | 24.5 | +11.7<br>+0.4<br>+0.0<br>+0.0 | +1.0<br>-28.6<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0 | +1.0<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 10.2  | 46.0                 | -35.8 | Horiz<br>100 |
| 15 | 66.190M<br>Ambient  | 25.5 | +5.7<br>+0.1<br>+0.0<br>+0.0  | +0.4<br>-29.2<br>+0.0<br>+0.0 | +0.1<br>+0.0<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 3.0   | 40.0                 | -37.0 | Horiz<br>100 |
| 16 | 12.110M<br>Ambient  | 13.2 | +0.0<br>+0.1<br>+0.0<br>+9.0  | +0.2<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0 | -40.0<br>360 | -17.3 | 29.5                 | -46.8 | 90deg<br>141 |
| 17 | 903.156M            | 87.2 | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>204  | 85.7  | 137.0<br>Fundamental | -51.3 | Horiz<br>100 |
| 18 | 27.070M<br>Ambient  | 10.5 | +0.0<br>+0.2<br>+0.0<br>+6.9  | +0.3<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0 | -40.0<br>360 | -21.8 | 29.5                 | -51.3 | 90deg<br>141 |
| 19 | 89.800k<br>Ambient  | 35.0 | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -35.0 | 28.5                 | -63.5 | 90deg<br>141 |
| 20 | 41.060k<br>Ambient  | 41.1 | +0.0<br>+0.0<br>+0.0<br>+10.6 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -28.3 | 35.3                 | -63.6 | 90deg<br>141 |
| 21 | 58.280k<br>Ambient  | 38.4 | +0.0<br>+0.0<br>+0.0<br>+10.1 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -31.5 | 32.3                 | -63.8 | 90deg<br>141 |
| 22 | 14.440k<br>Ambient  | 45.3 | +0.0<br>+0.0<br>+0.0<br>+14.6 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -20.1 | 44.4                 | -64.5 | 90deg<br>141 |

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Zillion TV Corporation.**

Specification: **FCC 15.247/15.209**

Work Order #: **89171**

Date: 3/12/2009

Test Type: **Radiated Scan**

Time: 13:43:34

Equipment: **Wireless Remote Control**

Sequence#: 3

Manufacturer: ZillionTV Corporation

Tested By: Armando Del Angel

Model: ZR102

S/N: 013

**Test Equipment:**

| Function          | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-------------------|------------|------------------|--------------|----------|
| HP 8447D Preamp   | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A    | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'          | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna           | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'         | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'          | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'         | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |
| Helix cable       | N/A        | 07/22/2008       | 07/22/2010   | AN05545  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03123  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03121  |
| EMCO 3115 Horn    | 9606-4854  | 11/12/2007       | 11/12/2009   | AN01412  |
| HP 83017A Pre-amp | 3123A00464 | 10/02/2007       | 10/02/2009   | AN01271  |
| High Pass Filter  | 2          | 05/01/2008       | 05/01/2010   | 02750    |
| Mag Loop          | 2156       | 06/04/2008       | 06/04/2010   | AN00052  |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

**Support Devices:**

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

**Test Conditions / Notes:**

Temp = 20°C

Rel. Humidity = 19%

Atm. Pressure = 103.7kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is a wireless remote control.

The EUT is located in the center of the test table raised 10cm with styrofoam.

The EUT will be transmitting in the MID channel.

The support equipment is used before each test to set the EUT to the specific channel.

The Test is being done with fresh batteries.

Because of the lack of antenna connectors the test will have to be done through radiated scans.

0.009-0.150MHz RBW = 200Hz, VBW = 2kHz

0.150-30MHz RBW = 9kHz, VBW = 91kHz

30-1000MHz RBW = 120kHz, VBW = 1.2MHz

1000-10000MHz RBW = 1MHz, VBW = 8MHz

**Transducer Legend:**

|                            |                         |
|----------------------------|-------------------------|
| T1=ANT AN01994 25-1000MHz  | T2=CAB-ANP05360         |
| T3=CAB-ANP05361            | T4=CAB-ANP05366         |
| T5=CAB-ANP05371            | T6=AMP-AN01517-070808   |
| T7=AN01271 HP PreAmplifier | T8=ANT-AN01412-111207   |
| T9=Filter 1GHz HP AN02750  | T10=CAB-ANP03121-120208 |
| T11=CAB-ANP03123-120208    | T12=CAB-ANP05545-072208 |
| T13=ANT- AN00052-06042008  |                         |

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

| # | Freq           | Rdng       | T1<br>T5<br>T9<br>T13         | T2<br>T6<br>T10       | T3<br>T7<br>T11       | T4<br>T8<br>T12       | Dist        | Corr         | Spec         | Margin | Polar       |
|---|----------------|------------|-------------------------------|-----------------------|-----------------------|-----------------------|-------------|--------------|--------------|--------|-------------|
|   | MHz            | dB $\mu$ V | dB                            | dB                    | dB                    | dB                    | Table       | dB $\mu$ V/m | dB $\mu$ V/m | dB     | Ant         |
| 1 | 8236.236M      | 36.2       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.7  | +0.0<br>-34.3<br>+1.4 | +0.0<br>+37.5<br>+5.2 | +0.0<br>56  | 49.0         | 54.0         | -5.0   | Vert<br>101 |
| 2 | 5490.874M      | 40.5       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.0  | +0.0<br>-33.3<br>+0.8 | +0.0<br>+34.7<br>+3.9 | +0.0<br>29  | 48.9         | 54.0         | -5.1   | Vert<br>101 |
| 3 | 6405.998M      | 40.6       | +0.0<br>+0.0<br>+0.2<br>+0.0  | +0.0<br>+0.0<br>+2.3  | +0.0<br>-34.5<br>+1.2 | +0.0<br>+34.6<br>+4.3 | +0.0<br>34  | 48.7         | 54.0         | -5.3   | Vert<br>101 |
| 4 | 1830.324M      | 45.1       | +0.0<br>+0.0<br>+0.4<br>+0.0  | +0.0<br>+0.0<br>+1.1  | +0.0<br>-33.7<br>+0.5 | +0.0<br>+26.6<br>+2.2 | +0.0<br>360 | 42.2         | 54.0         | -11.8  | Vert<br>101 |
| 5 | 940.000M       | 33.8       | +23.6<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0  | +0.0<br>360 | 33.2         | 46.0         | -12.8  | Vert<br>100 |
| 6 | 930.000M<br>QP | 33.8       | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>339 | 33.1         | 46.0         | -12.9  | Vert<br>100 |
| ^ | 930.000M       | 47.2       | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>360 | 46.5         | 46.0         | +0.5   | Vert<br>100 |
| 8 | 898.400M<br>QP | 34.5       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.8<br>-29.3<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>339 | 32.9         | 46.0         | -13.1  | Vert<br>100 |
| ^ | 898.400M       | 46.5       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.8<br>-29.3<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0        | 44.9         | 46.0         | -1.1   | Vert<br>100 |

|    |                      |      |                               |                               |                               |                               |                              |       |                             |       |              |
|----|----------------------|------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|-------|-----------------------------|-------|--------------|
| 10 | 3659.858M<br>Ambient | 35.3 | +0.0<br>+0.0<br>+0.5<br>+0.0  | +0.0<br>+0.0<br>+1.7<br>+0.0  | +0.0<br>-32.7<br>+0.6<br>+0.0 | +0.0<br>+31.9<br>+3.0<br>+0.0 | +0.0<br>360<br>+0.0<br>+0.0  | 40.3  | 54.0                        | -13.7 | Vert<br>101  |
| 11 | 950.000M             | 27.9 | +23.8<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 27.5  | 46.0                        | -18.5 | Vert<br>100  |
| 12 | 691.600M<br>Ambient  | 32.5 | +20.5<br>+0.2<br>+0.0<br>+0.0 | +1.7<br>-29.6<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +1.8<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | 27.5  | 46.0                        | -18.5 | Vert<br>100  |
| 13 | 571.600M<br>Ambient  | 32.2 | +19.6<br>+0.4<br>+0.0<br>+0.0 | +1.6<br>-29.6<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +1.9<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | 26.5  | 46.0                        | -19.5 | Vert<br>100  |
| 14 | 367.460M<br>Ambient  | 34.6 | +15.3<br>+0.3<br>+0.0<br>+0.0 | +1.2<br>-28.7<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0  | +1.3<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 24.3  | 46.0                        | -21.7 | Vert<br>100  |
| 15 | 768.270k<br>Ambient  | 35.2 | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.1<br>+0.0<br>+0.0<br>+0.0  | -40.0<br>307<br>+0.0<br>+0.0 | 5.4   | 29.9                        | -24.5 | 180de<br>141 |
| 16 | 212.360M<br>Ambient  | 31.7 | +10.1<br>+0.3<br>+0.0<br>+0.0 | +0.9<br>-28.7<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0  | +1.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 15.5  | 44.0                        | -28.5 | Vert<br>100  |
| 17 | 984.230M<br>Ambient  | 25.1 | +24.2<br>+0.4<br>+0.0<br>+0.0 | +1.9<br>-29.1<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.2<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 25.2  | 54.0                        | -28.8 | Vert<br>100  |
| 18 | 54.440M<br>Ambient   | 32.3 | +6.9<br>+0.1<br>+0.0<br>+0.0  | +0.4<br>-29.1<br>+0.0<br>+0.0 | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.4<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 11.1  | 40.0                        | -28.9 | Vert<br>100  |
| 19 | 920.000M<br>QP       | 43.0 | +23.4<br>+0.4<br>+0.0<br>+0.0 | +2.0<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>339<br>+0.0<br>+0.0  | 42.0  | 76.8<br>20dBc limit applied | -34.8 | Vert<br>100  |
| ^  | 920.000M             | 54.8 | +23.4<br>+0.4<br>+0.0<br>+0.0 | +2.0<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>339<br>+0.0<br>+0.0  | 53.8  | 76.8<br>20dBc limit applied | -23.0 | Vert<br>100  |
| 21 | 914.794M             | 98.0 | +23.3<br>+0.4<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>339<br>+0.0<br>+0.0  | 96.8  | 137.0<br>Fundamental        | -40.2 | Vert<br>100  |
| 22 | 17.495M<br>Ambient   | 12.9 | +0.0<br>+0.2<br>+0.0<br>+8.5  | +0.3<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.3<br>+0.0<br>+0.0<br>+0.0  | -40.0<br>166<br>+0.0<br>+0.0 | -17.8 | 29.5                        | -47.3 | 180de<br>141 |

|    |          |      |       |      |      |      |       |       |      |       |       |
|----|----------|------|-------|------|------|------|-------|-------|------|-------|-------|
| 23 | 149.360k | 46.6 | +0.0  | +0.0 | +0.0 | +0.0 | -80.0 | -23.4 | 24.1 | -47.5 | 180de |
|    | Ambient  |      | +0.0  | +0.0 | +0.0 | +0.0 | 80    |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +10.0 |      |      |      |       |       |      |       |       |
| 24 | 28.490M  | 13.7 | +0.0  | +0.3 | +0.0 | +0.3 | -40.0 | -18.5 | 29.5 | -48.0 | 180de |
|    | Ambient  |      | +0.2  | +0.0 | +0.0 | +0.0 | 359   |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +7.0  |      |      |      |       |       |      |       |       |
| 25 | 34.010k  | 40.7 | +0.0  | +0.0 | +0.0 | +0.0 | -80.0 | -28.2 | 37.0 | -65.2 | 180de |
|    | Ambient  |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +11.1 |      |      |      |       |       |      |       |       |
| 26 | 17.150k  | 42.4 | +0.0  | +0.0 | +0.0 | +0.0 | -80.0 | -23.9 | 42.9 | -66.8 | 180de |
|    | Ambient  |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +13.7 |      |      |      |       |       |      |       |       |

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Zillion TV Corporation.**  
 Specification: **FCC 15.247/15.209**  
 Work Order #: **89171**  
 Test Type: **Radiated Scan**  
 Equipment: **Wireless Remote Control**  
 Manufacturer: ZillionTV Corporation  
 Model: ZR102  
 S/N: 013

Date: 3/12/2009  
 Time: 14:06:39  
 Sequence#: 4  
 Tested By: Armando Del Angel

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

| Function          | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-------------------|------------|------------------|--------------|----------|
| HP 8447D Preamp   | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A    | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'          | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna           | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'         | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'          | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'         | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |
| Helix cable       | N/A        | 07/22/2008       | 07/22/2010   | AN05545  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03123  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03121  |
| EMCO 3115 Horn    | 9606-4854  | 11/12/2007       | 11/12/2009   | AN01412  |
| HP 83017A Pre-amp | 3123A00464 | 10/02/2007       | 10/02/2009   | AN01271  |
| High Pass Filter  | 2          | 05/01/2008       | 05/01/2010   | 02750    |
| Mag Loop          | 2156       | 06/04/2008       | 06/04/2010   | AN00052  |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

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

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

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

Temp = 20°C  
 Rel. Humidity = 19%  
 Atm. Pressure = 103.7kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is a wireless remote control.

The EUT is located in the center of the test table raised 10cm with styrofoam.

The EUT will be transmitting in the MID channel.

The support equipment is used before each test to set the EUT to the specific channel.

The Test is being done with fresh batteries.

Because of the lack of antenna connectors the test will have to be done through radiated scans.

0.009-0.150MHz RBW = 200Hz, VBW = 2kHz  
 0.150-30MHz RBW = 9kHz, VBW = 91kHz  
 30-1000MHz RBW = 120kHz, VBW = 1.2MHz  
 1000-10000MHz RBW = 1MHz, VBW = 8MHz

**Transducer Legend:**

|                            |                         |
|----------------------------|-------------------------|
| T1=ANT AN01994 25-1000MHz  | T2=CAB-ANP05360         |
| T3=CAB-ANP05361            | T4=CAB-ANP05366         |
| T5=CAB-ANP05371            | T6=AMP-AN01517-070808   |
| T7=AN01271 HP PreAmplifier | T8=ANT-AN01412-111207   |
| T9=Filter 1GHz HP AN02750  | T10=CAB-ANP03121-120208 |
| T11=CAB-ANP03123-120208    | T12=CAB-ANP05545-072208 |
| T13=ANT- AN00052-06042008  |                         |

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

| # | Freq                | Rdng       | T1<br>T5<br>T9<br>T13         | T2<br>T6<br>T10               | T3<br>T7<br>T11               | T4<br>T8<br>T12               | Dist         | Corr         | Spec         | Margin | Polar        |
|---|---------------------|------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------|--------------|--------------|--------|--------------|
|   | MHz                 | dB $\mu$ V | dB                            | dB                            | dB                            | dB                            | Table        | dB $\mu$ V/m | dB $\mu$ V/m | dB     | Ant          |
| 1 | 900.000M            | 33.5       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0         | 32.0         | 46.0         | -14.0  | Horiz<br>100 |
| 2 | 1829.636M           | 41.4       | +0.0<br>+0.0<br>+0.4<br>+0.0  | +0.0<br>+0.0<br>+1.1<br>+0.0  | +0.0<br>-33.7<br>+0.5<br>+0.0 | +0.0<br>+26.6<br>+2.2<br>+0.0 | +0.0         | 38.5         | 54.0         | -15.5  | Horiz<br>99  |
| 3 | 931.540M            | 29.0       | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>359  | 28.3         | 46.0         | -17.7  | Horiz<br>100 |
| 4 | 5488.829M<br>Ave    | 27.0       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.0<br>+0.0  | +0.0<br>-33.3<br>+0.8<br>+0.0 | +0.0<br>+34.7<br>+3.9<br>+0.0 | +0.0<br>323  | 35.4         | 54.0         | -18.6  | Horiz<br>131 |
| ^ | 5488.829M           | 43.4       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.0<br>+0.0  | +0.0<br>-33.3<br>+0.8<br>+0.0 | +0.0<br>+34.7<br>+3.9<br>+0.0 | +0.0<br>323  | 51.8         | 54.0         | -2.2   | Horiz<br>131 |
| 6 | 789.600M<br>Ambient | 26.4       | +22.3<br>+0.5<br>+0.0<br>+0.0 | +1.8<br>-29.5<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +1.9<br>+0.0<br>+0.0<br>+0.0  | +0.0         | 23.9         | 46.0         | -22.1  | Horiz<br>100 |
| 7 | 566.000M<br>Ambient | 26.7       | +19.5<br>+0.4<br>+0.0<br>+0.0 | +1.6<br>-29.6<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +1.9<br>+0.0<br>+0.0<br>+0.0  | +0.0         | 20.9         | 46.0         | -25.1  | Horiz<br>100 |
| 8 | 362.290M<br>Ambient | 28.5       | +15.2<br>+0.3<br>+0.0<br>+0.0 | +1.2<br>-28.7<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0  | +1.3<br>+0.0<br>+0.0<br>+0.0  | +0.0         | 18.1         | 46.0         | -27.9  | Horiz<br>100 |
| 9 | 774.220k<br>Ambient | 31.6       | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.1<br>+0.0<br>+0.0<br>+0.0  | -40.0<br>360 | 1.8          | 29.8         | -28.0  | 90deg<br>141 |



|    |                     |      |                               |                               |                              |                              |              |       |                      |       |              |
|----|---------------------|------|-------------------------------|-------------------------------|------------------------------|------------------------------|--------------|-------|----------------------|-------|--------------|
| 10 | 998.460M<br>Ambient | 25.6 | +24.4<br>+0.2<br>+0.0<br>+0.0 | +2.1<br>-29.0<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.1<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>360  | 25.9  | 54.0                 | -28.1 | Horiz<br>100 |
| 11 | 964.370M<br>Ambient | 24.8 | +24.0<br>+0.5<br>+0.0<br>+0.0 | +1.8<br>-29.1<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.2<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>360  | 24.7  | 54.0                 | -29.3 | Horiz<br>100 |
| 12 | 107.550M<br>Ambient | 28.3 | +10.8<br>+0.2<br>+0.0<br>+0.0 | +0.6<br>-29.1<br>+0.0<br>+0.0 | +0.1<br>+0.0<br>+0.0<br>+0.0 | +0.6<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 11.5  | 44.0                 | -32.5 | Horiz<br>100 |
| 13 | 5.225M<br>Ambient   | 16.8 | +0.0<br>+0.1<br>+0.0<br>+10.0 | +0.2<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0 | -40.0        | -12.7 | 29.5                 | -42.2 | 90deg<br>141 |
| 14 | 405.830k<br>Ambient | 40.6 | +0.0<br>+0.1<br>+0.0<br>+9.8  | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -29.4 | 15.4                 | -44.8 | 90deg<br>141 |
| 15 | 15.275M<br>Ambient  | 12.9 | +0.0<br>+0.1<br>+0.0<br>+8.7  | +0.2<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0 | -40.0        | -17.9 | 29.5                 | -47.4 | 90deg<br>141 |
| 16 | 23.600M<br>Ambient  | 13.3 | +0.0<br>+0.2<br>+0.0<br>+7.0  | +0.3<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0 | -40.0        | -18.9 | 29.5                 | -48.4 | 90deg<br>141 |
| 17 | 915.140M            | 85.9 | +23.3<br>+0.4<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>204  | 84.7  | 137.0<br>Fundamental | -52.3 | Horiz<br>100 |
| 18 | 87.400k<br>Ambient  | 36.5 | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0        | -33.5 | 28.8                 | -62.3 | 90deg<br>141 |
| 19 | 127.600k<br>Ambient | 32.8 | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0        | -37.2 | 25.5                 | -62.7 | 90deg<br>141 |
| 20 | 13.080k<br>Ambient  | 41.3 | +0.0<br>+0.0<br>+0.0<br>+15.2 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -23.5 | 45.3                 | -68.8 | 90deg<br>141 |
| 21 | 51.600k<br>Ambient  | 32.8 | +0.0<br>+0.0<br>+0.0<br>+10.3 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0        | -36.9 | 33.3                 | -70.2 | 90deg<br>141 |
| 22 | 38.150k<br>Ambient  | 33.8 | +0.0<br>+0.0<br>+0.0<br>+10.7 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -35.5 | 36.0                 | -71.5 | 90deg<br>141 |

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Zillion TV Corporation.**  
 Specification: **FCC 15.247/15.209**  
 Work Order #: **89171**  
 Test Type: **Radiated Scan**  
 Equipment: **Wireless Remote Control**  
 Manufacturer: ZillionTV Corporation  
 Model: ZR102  
 S/N: 013

Date: 3/12/2009  
 Time: 13:40:04  
 Sequence#: 5  
 Tested By: Armando Del Angel

#### **Test Equipment:**

| Function          | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-------------------|------------|------------------|--------------|----------|
| HP 8447D Preamp   | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A    | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'          | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna           | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'         | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'          | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'         | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |
| Helix cable       | N/A        | 07/22/2008       | 07/22/2010   | AN05545  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03123  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03121  |
| EMCO 3115 Horn    | 9606-4854  | 11/12/2007       | 11/12/2009   | AN01412  |
| HP 83017A Pre-amp | 3123A00464 | 10/02/2007       | 10/02/2009   | AN01271  |
| High Pass Filter  | 2          | 05/01/2008       | 05/01/2010   | 02750    |
| Mag Loop          | 2156       | 06/04/2008       | 06/04/2010   | AN00052  |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

#### **Support Devices:**

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

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

Temp = 20°C  
 Rel. Humidity = 19%  
 Atm. Pressure = 103.7kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is a wireless remote control.

The EUT is located in the center of the test table raised 10cm with styrofoam.

The EUT will be transmitting in the HIGH channel.

The support equipment is used before each test to set the EUT to the specific channel.

The Test is being done with fresh batteries.

Because of the lack of antenna connectors the test will have to be done through radiated scans.

0.009-0.150MHz RBW = 200Hz, VBW = 2kHz  
 0.150-30MHz RBW = 9kHz, VBW = 91kHz  
 30-1000MHz RBW = 120kHz, VBW = 1.2MHz  
 1000-10000MHz RBW = 1MHz, VBW = 8MHz

**Transducer Legend:**

|                            |                         |
|----------------------------|-------------------------|
| T1=ANT AN01994 25-1000MHz  | T2=CAB-ANP05360         |
| T3=CAB-ANP05361            | T4=CAB-ANP05366         |
| T5=CAB-ANP05371            | T6=AMP-AN01517-070808   |
| T7=AN01271 HP PreAmplifier | T8=ANT-AN01412-111207   |
| T9=Filter 1GHz HP AN02750  | T10=CAB-ANP03121-120208 |
| T11=CAB-ANP03123-120208    | T12=CAB-ANP05545-072208 |
| T13=ANT- AN00052-06042008  |                         |

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

| # | Freq                | Rdng       | T1<br>T5<br>T9<br>T13         | T2<br>T6<br>T10               | T3<br>T7<br>T11               | T4<br>T8<br>T12               | Dist        | Corr         | Spec         | Margin | Polar       |
|---|---------------------|------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------|--------------|--------------|--------|-------------|
|   | MHz                 | dB $\mu$ V | dB                            | dB                            | dB                            | dB                            | Table       | dB $\mu$ V/m | dB $\mu$ V/m | dB     | Ant         |
| 1 | 940.010M            | 39.6       | +23.6<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>340 | 39.0         | 46.0         | -7.0   | Vert<br>100 |
| 2 | 1854.358M           | 47.5       | +0.0<br>+0.0<br>+0.4<br>+0.0  | +0.0<br>+0.0<br>+1.1<br>+0.0  | +0.0<br>-33.7<br>+0.5<br>+0.0 | +0.0<br>+26.8<br>+2.2<br>+0.0 | +0.0<br>29  | 44.8         | 54.0         | -9.2   | Vert<br>126 |
| 3 | 950.160M            | 33.9       | +23.8<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>340 | 33.5         | 46.0         | -12.5  | Vert<br>100 |
| 4 | 900.000M<br>QP      | 33.2       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>340 | 31.7         | 46.0         | -14.3  | Vert<br>100 |
| ^ | 900.000M            | 49.3       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>340 | 47.8         | 46.0         | +1.8   | Vert<br>100 |
| 6 | 5560.515M<br>Ave    | 26.9       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.0<br>+0.0  | +0.0<br>-33.4<br>+0.7<br>+0.0 | +0.0<br>+34.7<br>+4.0<br>+0.0 | +0.0<br>300 | 35.2         | 54.0         | -18.8  | Vert<br>126 |
| ^ | 5560.515M           | 43.5       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.0<br>+0.0  | +0.0<br>-33.4<br>+0.7<br>+0.0 | +0.0<br>+34.7<br>+4.0<br>+0.0 | +0.0<br>300 | 51.8         | 54.0         | -2.2   | Vert<br>126 |
| 8 | 804.000M<br>Ambient | 26.3       | +22.5<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.5<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0        | 24.1         | 46.0         | -21.9  | Vert<br>100 |
| 9 | 671.600M<br>Ambient | 29.0       | +20.4<br>+0.3<br>+0.0<br>+0.0 | +1.7<br>-29.7<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +1.8<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>27  | 23.9         | 46.0         | -22.1  | Vert<br>100 |

|    |                     |      |                               |                               |                              |                              |              |       |                                |       |              |
|----|---------------------|------|-------------------------------|-------------------------------|------------------------------|------------------------------|--------------|-------|--------------------------------|-------|--------------|
| 10 | 999.778M<br>Ambient | 30.3 | +24.4<br>+0.2<br>+0.0<br>+0.0 | +2.1<br>-29.0<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.1<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>340  | 30.6  | 54.0                           | -23.4 | Vert<br>100  |
| 11 | 437.236M<br>Ambient | 28.7 | +17.0<br>+0.5<br>+0.0<br>+0.0 | +1.5<br>-29.2<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0 | +1.6<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>360  | 20.4  | 46.0                           | -25.6 | Vert<br>100  |
| 12 | 595.620k<br>Ambient | 35.5 | +0.0<br>+0.1<br>+0.0<br>+9.9  | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -40.0<br>360 | 5.6   | 32.1                           | -26.5 | 180de<br>141 |
| 13 | 996.640k<br>Ambient | 29.6 | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.1<br>+0.0<br>+0.0<br>+0.0 | -40.0<br>360 | -0.2  | 27.6                           | -27.8 | 180de<br>141 |
| 14 | 85.986M<br>Ambient  | 29.6 | +8.3<br>+0.2<br>+0.0<br>+0.0  | +0.5<br>-29.1<br>+0.0<br>+0.0 | +0.1<br>+0.0<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 10.1  | 40.0                           | -29.9 | Vert<br>100  |
| 15 | 930.140M<br>QP      | 45.8 | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>340  | 45.1  | 76.6<br>20dBc Limit<br>applied | -31.5 | Vert<br>100  |
| ^  | 930.140M            | 52.5 | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>340  | 51.8  | 76.6<br>20dBc Limit<br>applied | -24.8 | Vert<br>100  |
| 17 | 216.000M<br>Ambient | 26.5 | +10.3<br>+0.3<br>+0.0<br>+0.0 | +0.9<br>-28.7<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0 | +1.0<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 10.5  | 44.0                           | -33.5 | Vert<br>100  |
| 18 | 926.778M            | 97.3 | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>340  | 96.6  | 137.0<br>Fundamental           | -40.4 | Vert<br>100  |
| 19 | 16.700M<br>Ambient  | 14.6 | +0.0<br>+0.2<br>+0.0<br>+8.6  | +0.3<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0 | -40.0<br>62  | -16.0 | 29.5                           | -45.5 | 180de<br>141 |
| 20 | 166.910k<br>Ambient | 47.6 | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>254 | -22.4 | 23.1                           | -45.5 | 180de<br>141 |
| 21 | 249.000k<br>Ambient | 40.3 | +0.0<br>+0.0<br>+0.0<br>+9.9  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0        | -29.8 | 19.7                           | -49.5 | 180de<br>141 |

|    |          |      |       |      |      |      |       |       |      |       |       |
|----|----------|------|-------|------|------|------|-------|-------|------|-------|-------|
| 22 | 58.700k  | 38.8 | +0.0  | +0.0 | +0.0 | +0.0 | -80.0 | -31.1 | 32.2 | -63.3 | 180de |
|    | Ambient  |      | +0.0  | +0.0 | +0.0 | +0.0 | 262   |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +10.1 |      |      |      |       |       |      |       |       |
| 23 | 121.900k | 32.0 | +0.0  | +0.0 | +0.0 | +0.0 | -80.0 | -37.9 | 25.9 | -63.8 | 180de |
|    | Ambient  |      | +0.0  | +0.0 | +0.0 | +0.0 | 360   |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +10.1 |      |      |      |       |       |      |       |       |
| 24 | 39.380k  | 40.8 | +0.0  | +0.0 | +0.0 | +0.0 | -80.0 | -28.6 | 35.7 | -64.3 | 180de |
|    | Ambient  |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +10.6 |      |      |      |       |       |      |       |       |
| 25 | 10.580k  | 44.4 | +0.0  | +0.0 | +0.0 | +0.0 | -80.0 | -19.3 | 47.1 | -66.4 | 180de |
|    | Ambient  |      | +0.0  | +0.0 | +0.0 | +0.0 | 113   |       |      |       | 141   |
|    |          |      | +0.0  | +0.0 | +0.0 | +0.0 |       |       |      |       |       |
|    |          |      | +16.3 |      |      |      |       |       |      |       |       |

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Zillion TV Corporation.**  
 Specification: **FCC 15.247/15.209**  
 Work Order #: **89171**  
 Test Type: **Radiated Scan**  
 Equipment: **Wireless Remote Control**  
 Manufacturer: ZillionTV Corporation  
 Model: ZR102  
 S/N: 013

Date: 3/12/2009  
 Time: 14:10:55  
 Sequence#: 6  
 Tested By: Armando Del Angel

#### **Test Equipment:**

| Function          | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-------------------|------------|------------------|--------------|----------|
| HP 8447D Preamp   | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A    | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'          | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna           | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'         | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'          | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'         | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |
| Helix cable       | N/A        | 07/22/2008       | 07/22/2010   | AN05545  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03123  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03121  |
| EMCO 3115 Horn    | 9606-4854  | 11/12/2007       | 11/12/2009   | AN01412  |
| HP 83017A Pre-amp | 3123A00464 | 10/02/2007       | 10/02/2009   | AN01271  |
| High Pass Filter  | 2          | 05/01/2008       | 05/01/2010   | 02750    |
| Mag Loop          | 2156       | 06/04/2008       | 06/04/2010   | AN00052  |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

#### **Support Devices:**

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

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

Temp = 20°C  
 Rel. Humidity = 19%  
 Atm. Pressure = 103.7kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is a wireless remote control.

The EUT is located in the center of the test table raised 10cm with styrofoam.

The EUT will be transmitting in the HIGH channel.

The support equipment is used before each test to set the EUT to the specific channel.

The Test is being done with fresh batteries.

Because of the lack of antenna connectors the test will have to be done through radiated scans.

0.009-0.150MHz RBW = 200Hz, VBW = 2kHz  
 0.150-30MHz RBW = 9kHz, VBW = 91kHz  
 30-1000MHz RBW = 120kHz, VBW = 1.2MHz  
 1000-10000MHz RBW = 1MHz, VBW = 8MHz

**Transducer Legend:**

|                            |                         |
|----------------------------|-------------------------|
| T1=ANT AN01994 25-1000MHz  | T2=CAB-ANP05360         |
| T3=CAB-ANP05361            | T4=CAB-ANP05366         |
| T5=CAB-ANP05371            | T6=AMP-AN01517-070808   |
| T7=AN01271 HP PreAmplifier | T8=ANT-AN01412-111207   |
| T9=Filter 1GHz HP AN02750  | T10=CAB-ANP03121-120208 |
| T11=CAB-ANP03123-120208    | T12=CAB-ANP05545-072208 |
| T13=ANT- AN00052-06042008  |                         |

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

| # | Freq                | Rdng       | T1<br>T5<br>T9<br>T13         | T2<br>T6<br>T10               | T3<br>T7<br>T11               | T4<br>T8<br>T12               | Dist        | Corr         | Spec         | Margin | Polar        |
|---|---------------------|------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------|--------------|--------------|--------|--------------|
|   | MHz                 | dB $\mu$ V | dB                            | dB                            | dB                            | dB                            | Table       | dB $\mu$ V/m | dB $\mu$ V/m | dB     | Ant          |
| 1 | 930.350M<br>Ambient | 34.6       | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0        | 33.9         | 46.0         | -12.1  | Horiz<br>100 |
| 2 | 826.350M<br>Ambient | 34.4       | +22.7<br>+0.4<br>+0.0<br>+0.0 | +1.8<br>-29.4<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360 | 32.3         | 46.0         | -13.7  | Horiz<br>100 |
| 3 | 594.250M<br>Ambient | 34.8       | +20.1<br>+0.5<br>+0.0<br>+0.0 | +1.6<br>-29.6<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +1.9<br>+0.0<br>+0.0<br>+0.0  | +0.0        | 29.7         | 46.0         | -16.3  | Horiz<br>100 |
| 4 | 900.000M<br>Ambient | 31.1       | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0        | 29.6         | 46.0         | -16.4  | Horiz<br>100 |
| 5 | 696.250M<br>Ambient | 34.4       | +20.5<br>+0.2<br>+0.0<br>+0.0 | +1.7<br>-29.6<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +1.8<br>+0.0<br>+0.0<br>+0.0  | +0.0        | 29.4         | 46.0         | -16.6  | Horiz<br>100 |
| 6 | 461.376M<br>Ambient | 34.4       | +17.4<br>+0.4<br>+0.0<br>+0.0 | +1.5<br>-29.3<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0  | +1.6<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360 | 26.3         | 46.0         | -19.7  | Horiz<br>100 |
| 7 | 5562.845M<br>Ave    | 25.7       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+1.9<br>+0.0  | +0.0<br>-33.4<br>+0.8<br>+0.0 | +0.0<br>+34.7<br>+4.0<br>+0.0 | +0.0<br>360 | 34.0         | 54.0         | -20.0  | Horiz<br>141 |
| ^ | 5562.845M           | 43.4       | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+1.9<br>+0.0  | +0.0<br>-33.4<br>+0.8<br>+0.0 | +0.0<br>+34.7<br>+4.0<br>+0.0 | +0.0<br>360 | 51.7         | 54.0         | -2.3   | Horiz<br>141 |
| 9 | 39.858M<br>Ambient  | 32.9       | +15.2<br>+0.1<br>+0.0<br>+0.0 | +0.4<br>-29.1<br>+0.0<br>+0.0 | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.4<br>+0.0<br>+0.0<br>+0.0  | +0.0        | 20.0         | 40.0         | -20.0  | Horiz<br>100 |

|    |                     |      |                               |                               |                               |                               |              |       |                      |       |              |
|----|---------------------|------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|--------------|-------|----------------------|-------|--------------|
| 10 | 1853.562M           | 36.0 | +0.0<br>+0.0<br>+0.4<br>+0.0  | +0.0<br>+0.0<br>+1.1<br>+0.0  | +0.0<br>-33.7<br>+0.5<br>+0.0 | +0.0<br>+26.8<br>+2.2<br>+0.0 | +0.0         | 33.3  | 54.0                 | -20.7 | Horiz<br>111 |
| 11 | 984.740M<br>Ambient | 32.0 | +24.2<br>+0.4<br>+0.0<br>+0.0 | +1.9<br>-29.1<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.2<br>+0.0<br>+0.0<br>+0.0  | +0.0         | 32.1  | 54.0                 | -21.9 | Horiz<br>100 |
| 12 | 286.716M<br>Ambient | 32.6 | +13.2<br>+0.3<br>+0.0<br>+0.0 | +1.0<br>-28.4<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0  | +1.2<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360  | 20.2  | 46.0                 | -25.8 | Horiz<br>100 |
| 13 | 168.756M<br>Ambient | 34.9 | +9.9<br>+0.2<br>+0.0<br>+0.0  | +0.8<br>-28.8<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0  | +0.9<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>18   | 18.1  | 44.0                 | -25.9 | Horiz<br>100 |
| 14 | 5.050M<br>Ambient   | 16.4 | +0.0<br>+0.1<br>+0.0<br>+10.0 | +0.2<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.2<br>+0.0<br>+0.0<br>+0.0  | -40.0        | -13.1 | 29.5                 | -42.6 | 90deg<br>141 |
| 15 | 241.330k<br>Ambient | 44.2 | +0.0<br>+0.0<br>+0.0<br>+10.0 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | -80.0<br>360 | -25.8 | 19.9                 | -45.7 | 90deg<br>141 |
| 16 | 23.375M<br>Ambient  | 10.1 | +0.0<br>+0.2<br>+0.0<br>+7.1  | +0.3<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.3<br>+0.0<br>+0.0<br>+0.0  | -40.0        | -22.0 | 29.5                 | -51.5 | 90deg<br>141 |
| 17 | 926.778M            | 81.6 | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>204  | 80.9  | 137.0<br>Fundamental | -56.1 | Horiz<br>100 |
| 18 | 61.400k<br>Ambient  | 39.0 | +0.0<br>+0.0<br>+0.0<br>+10.1 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | -80.0<br>22  | -30.9 | 31.8                 | -62.7 | 90deg<br>141 |
| 19 | 13.620k<br>Ambient  | 45.9 | +0.0<br>+0.0<br>+0.0<br>+15.0 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0  | -80.0<br>310 | -19.1 | 44.9                 | -64.0 | 90deg<br>141 |



Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717  
 Customer: **Zillion TV Corporation.**  
 Specification: **FCC 15.247/15.209**  
 Work Order #: **89171**  
 Test Type: **Radiated Scan**  
 Equipment: **Wireless Remote Control**  
 Manufacturer: ZillionTV Corporation  
 Model: ZR102  
 S/N: 013

Date: 3/12/2009  
 Time: 13:48:17  
 Sequence#: 1  
 Tested By: Armando Del Angel

#### **Test Equipment:**

| Function          | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-------------------|------------|------------------|--------------|----------|
| HP 8447D Preamp   | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A    | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'          | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna           | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'         | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'          | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'         | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |
| Helix cable       | N/A        | 07/22/2008       | 07/22/2010   | AN05545  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03123  |
| High freq. Cable  | N/A        | 12/02/2008       | 12/02/2010   | AN03121  |
| EMCO 3115 Horn    | 9606-4854  | 11/12/2007       | 11/12/2009   | AN01412  |
| HP 83017A Pre-amp | 3123A00464 | 10/02/2007       | 10/02/2009   | AN01271  |
| High Pass Filter  | 2          | 05/01/2008       | 05/01/2010   | 02750    |
| Mag Loop          | 2156       | 06/04/2008       | 06/04/2010   | AN00052  |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

#### **Support Devices:**

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

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

Temp = 20°C  
 Rel. Humidity = 19%  
 Atm. Pressure = 103.7kPa

Testing Radiated Spurious Emissions per FCC 15.247(d)

The EUT is a wireless remote control.

The EUT is located in the center of the test table raised 10cm with styrofoam.

The EUT will be transmitting in the LOW channel.

The support equipment is used before each test to set the EUT to the specific channel.

The Test is being done with fresh batteries.

Because of the lack of antenna connectors the test will have to be done through radiated scans.

0.009-0.150MHz RBW = 200Hz, VBW = 2kHz  
 0.150-30MHz RBW = 9kHz, VBW = 91kHz  
 30-1000MHz RBW = 120kHz, VBW = 1.2MHz  
 1000-10000MHz RBW = 1MHz, VBW = 8MHz

**Transducer Legend:**

|                            |                         |
|----------------------------|-------------------------|
| T1=ANT AN01994 25-1000MHz  | T2=CAB-ANP05360         |
| T3=CAB-ANP05361            | T4=CAB-ANP05366         |
| T5=CAB-ANP05371            | T6=AMP-AN01517-070808   |
| T7=AN01271 HP PreAmplifier | T8=ANT-AN01412-111207   |
| T9=Filter 1GHz HP AN02750  | T10=CAB-ANP03121-120208 |
| T11=CAB-ANP03123-120208    | T12=CAB-ANP05545-072208 |
| T13=ANT- AN00052-06042008  |                         |

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

| # | Freq                 | Rdng       | T1<br>T5<br>T9<br>T13         | T2<br>T6<br>T10       | T3<br>T7<br>T11       | T4<br>T8<br>T12       | Dist        | Corr         | Spec         | Margin | Polar       |
|---|----------------------|------------|-------------------------------|-----------------------|-----------------------|-----------------------|-------------|--------------|--------------|--------|-------------|
|   | MHz                  | dB $\mu$ V | dB                            | dB                    | dB                    | dB                    | Table       | dB $\mu$ V/m | dB $\mu$ V/m | dB     | Ant         |
| 1 | 886.800M             | 40.9       | +23.0<br>+0.2<br>+0.0<br>+0.0 | +1.8<br>-29.3<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>360 | 39.1         | 46.0         | -6.9   | Vert<br>100 |
| 2 | 858.400M             | 33.2       | +22.9<br>+0.3<br>+0.0<br>+0.0 | +1.7<br>-29.3<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>360 | 31.3         | 46.0         | -14.7  | Vert<br>100 |
| 3 | 1806.312M            | 41.5       | +0.0<br>+0.0<br>+0.4<br>+0.0  | +0.0<br>+0.0<br>+1.1  | +0.0<br>-33.8<br>+0.5 | +0.0<br>+26.5<br>+2.2 | +0.0<br>12  | 38.4         | 54.0         | -15.6  | Vert<br>100 |
| 4 | 930.700M<br>QP       | 30.6       | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>342 | 29.9         | 46.0         | -16.1  | Vert<br>100 |
| ^ | 930.700M             | 47.9       | +23.5<br>+0.5<br>+0.0<br>+0.0 | +2.0<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0  | +0.0<br>342 | 47.2         | 46.0         | +1.2   | Vert<br>100 |
| 6 | 940.000M             | 30.3       | +23.6<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0  | +0.0<br>342 | 29.7         | 46.0         | -16.3  | Vert<br>100 |
| 7 | 1805.500M            | 39.9       | +0.0<br>+0.0<br>+0.4<br>+0.0  | +0.0<br>+0.0<br>+1.1  | +0.0<br>-33.8<br>+0.5 | +0.0<br>+26.5<br>+2.2 | +0.0<br>360 | 36.8         | 54.0         | -17.2  | Vert<br>100 |
| 8 | 950.000M             | 28.9       | +23.8<br>+0.5<br>+0.0<br>+0.0 | +1.9<br>-29.2<br>+0.0 | +0.5<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0  | +0.0<br>342 | 28.5         | 46.0         | -17.5  | Vert<br>100 |
| 9 | 3265.000M<br>Ambient | 31.2       | +0.0<br>+0.0<br>+0.6<br>+0.0  | +0.0<br>+0.0<br>+1.6  | +0.0<br>-32.7<br>+0.8 | +0.0<br>+31.0<br>+2.9 | +0.0<br>360 | 35.4         | 54.0         | -18.6  | Vert<br>100 |

|    |                     |      |                               |                               |                               |                               |                              |      |                             |       |             |
|----|---------------------|------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|------------------------------|------|-----------------------------|-------|-------------|
| 10 | 4395.000M           | 28.0 | +0.0<br>+0.0<br>+0.2<br>+0.0  | +0.0<br>+0.0<br>+1.8<br>+0.0  | +0.0<br>-32.6<br>+0.8<br>+0.0 | +0.0<br>+32.5<br>+3.5<br>+0.0 | +0.0<br>360<br>+0.0<br>+0.0  | 34.2 | 54.0                        | -19.8 | Vert<br>100 |
| 11 | 5416.874M<br>Ave    | 24.9 | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.3<br>+0.0  | +0.0<br>-33.1<br>+1.0<br>+0.0 | +0.0<br>+34.5<br>+3.9<br>+0.0 | +0.0<br>297<br>+0.0<br>+0.0  | 33.8 | 54.0                        | -20.2 | Vert<br>149 |
| ^  | 5416.874M           | 39.4 | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.3<br>+0.0  | +0.0<br>-33.1<br>+1.0<br>+0.0 | +0.0<br>+34.5<br>+3.9<br>+0.0 | +0.0<br>297<br>+0.0<br>+0.0  | 48.3 | 54.0                        | -5.7  | Vert<br>149 |
| 13 | 7225.265M<br>Ave    | 23.5 | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.3<br>+0.0  | +0.0<br>-34.7<br>+1.1<br>+0.0 | +0.0<br>+36.3<br>+4.7<br>+0.0 | +0.0<br>297<br>+0.0<br>+0.0  | 33.5 | 54.0                        | -20.5 | Vert<br>149 |
| ^  | 7225.265M           | 37.6 | +0.0<br>+0.0<br>+0.3<br>+0.0  | +0.0<br>+0.0<br>+2.3<br>+0.0  | +0.0<br>-34.7<br>+1.1<br>+0.0 | +0.0<br>+36.3<br>+4.7<br>+0.0 | +0.0<br>297<br>+0.0<br>+0.0  | 47.6 | 54.0                        | -6.4  | Vert<br>149 |
| 15 | 822.800M<br>Ambient | 26.9 | +22.6<br>+0.4<br>+0.0<br>+0.0 | +1.8<br>-29.4<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 24.7 | 46.0                        | -21.3 | Vert<br>100 |
| 16 | 727.600M<br>Ambient | 26.1 | +21.1<br>+0.5<br>+0.0<br>+0.0 | +1.7<br>-29.6<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +1.9<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 22.2 | 46.0                        | -23.8 | Vert<br>100 |
| 17 | 565.200M<br>Ambient | 27.5 | +19.5<br>+0.4<br>+0.0<br>+0.0 | +1.6<br>-29.6<br>+0.0<br>+0.0 | +0.4<br>+0.0<br>+0.0<br>+0.0  | +1.9<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 21.7 | 46.0                        | -24.3 | Vert<br>100 |
| 18 | 389.550M<br>Ambient | 27.2 | +15.9<br>+0.4<br>+0.0<br>+0.0 | +1.3<br>-28.9<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0  | +1.4<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | 17.6 | 46.0                        | -28.4 | Vert<br>100 |
| 19 | 900.000M<br>QP      | 46.6 | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>339<br>+0.0<br>+0.0  | 45.1 | 74.2<br>20dBc limit applied | -29.1 | Vert<br>100 |
| ^  | 900.000M            | 55.1 | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>360<br>+0.0<br>+0.0  | 53.6 | 74.2<br>20dBc limit applied | -20.6 | Vert<br>100 |
| 21 | 992.840M<br>Ambient | 24.2 | +24.3<br>+0.3<br>+0.0<br>+0.0 | +2.0<br>-29.0<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0  | +2.1<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>342<br>+0.0<br>+0.0  | 24.4 | 54.0                        | -29.6 | Vert<br>100 |
| 22 | 85.930M<br>Ambient  | 29.1 | +8.3<br>+0.2<br>+0.0<br>+0.0  | +0.5<br>-29.1<br>+0.0<br>+0.0 | +0.1<br>+0.0<br>+0.0<br>+0.0  | +0.5<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | 9.6  | 40.0                        | -30.4 | Vert<br>100 |

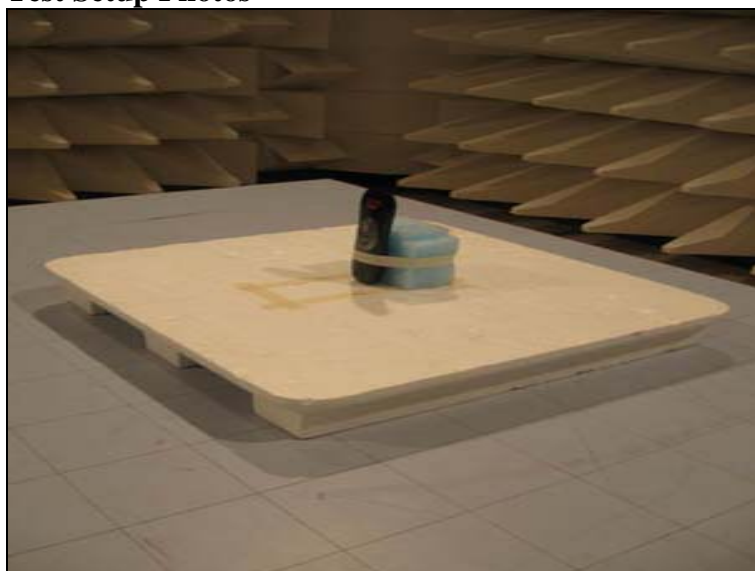
|    |                     |      |                               |                               |                              |                              |              |       |                      |       |              |
|----|---------------------|------|-------------------------------|-------------------------------|------------------------------|------------------------------|--------------|-------|----------------------|-------|--------------|
| 23 | 195.440M<br>Ambient | 28.7 | +9.1<br>+0.3<br>+0.0<br>+0.0  | +0.9<br>-28.8<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0 | +1.0<br>+0.0<br>+0.0<br>+0.0 | +0.0         | 11.4  | 44.0                 | -32.6 | Vert<br>100  |
| 24 | 5.015M<br>Ambient   | 16.9 | +0.0<br>+0.1<br>+0.0<br>+10.0 | +0.2<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.2<br>+0.0<br>+0.0<br>+0.0 | -40.0<br>46  | -12.6 | 29.5                 | -42.1 | 180de<br>141 |
| 25 | 902.812M            | 95.7 | +23.1<br>+0.3<br>+0.0<br>+0.0 | +1.9<br>-29.3<br>+0.0<br>+0.0 | +0.5<br>+0.0<br>+0.0<br>+0.0 | +2.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>360  | 94.2  | 137.0<br>Fundamental | -42.8 | Vert<br>100  |
| 26 | 17.570M<br>Ambient  | 12.1 | +0.0<br>+0.2<br>+0.0<br>+8.5  | +0.3<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.3<br>+0.0<br>+0.0<br>+0.0 | -40.0        | -18.6 | 29.5                 | -48.1 | 180de<br>141 |
| 27 | 119.800k<br>Ambient | 34.6 | +0.0<br>+0.0<br>+0.0<br>+10.1 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -35.3 | 26.0                 | -61.3 | 180de<br>141 |
| 28 | 50.500k<br>Ambient  | 39.5 | +0.0<br>+0.0<br>+0.0<br>+10.4 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>360 | -30.1 | 33.5                 | -63.6 | 180de<br>141 |
| 29 | 18.590k<br>Ambient  | 42.4 | +0.0<br>+0.0<br>+0.0<br>+13.3 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0        | -24.3 | 42.2                 | -66.5 | 180de<br>141 |
| 30 | 10.500k<br>Ambient  | 44.1 | +0.0<br>+0.0<br>+0.0<br>+16.3 | +0.0<br>+0.0<br>+0.0<br>+0.0  | +0.0<br>+0.0<br>+0.0<br>+0.0 | +0.0<br>+0.0<br>+0.0<br>+0.0 | -80.0<br>21  | -19.6 | 47.2                 | -66.8 | 180de<br>141 |

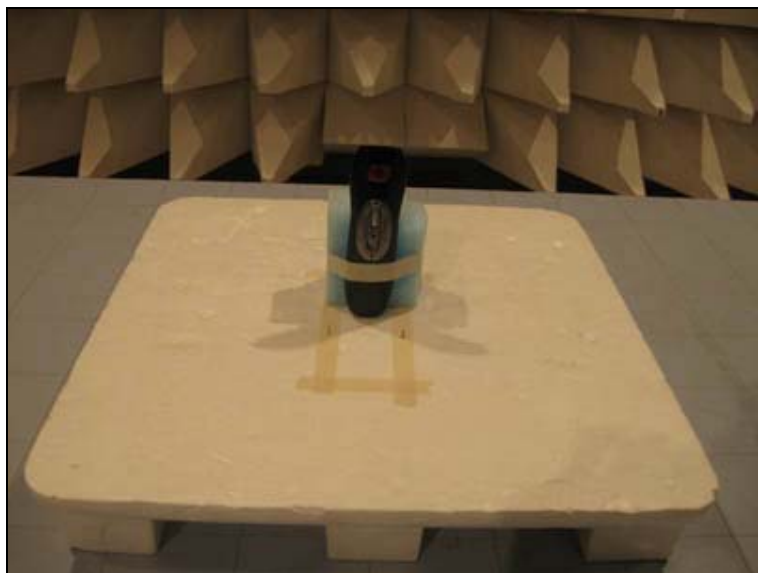
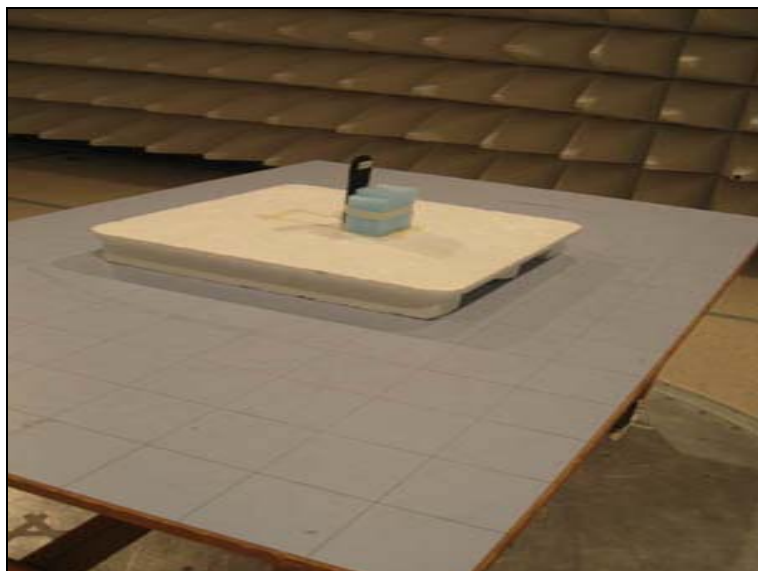
## FCC 15.247(d) BANDEDGE

### Test Equipment

| Asset #  | Equipment       | Serial #   | Cal Date   | Cal Due    |
|----------|-----------------|------------|------------|------------|
| ANP05361 | Cable 6'        | 51         | 12/30/2008 | 12/30/2010 |
| AN01994  | Antenna         | 2453       | 12/22/2008 | 12/22/2010 |
| ANP05366 | Cable 30'       | 11         | 11/5/2008  | 11/5/2010  |
| ANP05371 | Cable 6'        | 49         | 11/10/2008 | 11/10/2010 |
| ANP05360 | Cable 20'       | 16         | 11/10/2008 | 11/10/2010 |
| AN01517  | HP 8447D Preamp | 2944A08601 | 7/8/2008   | 7/8/2010   |
| AN02872  | Agilent E4440A  | MY46186330 | 1/31/2008  | 1/31/2010  |

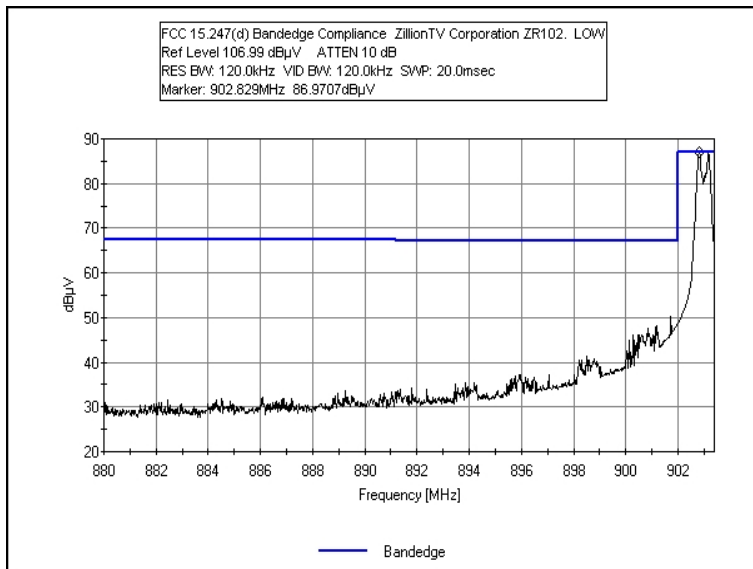
### Test Setup Photos



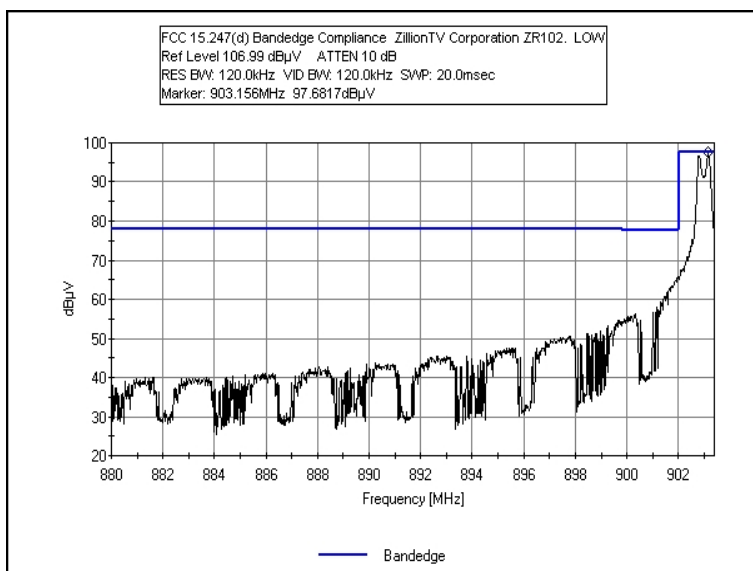


## Test Plots

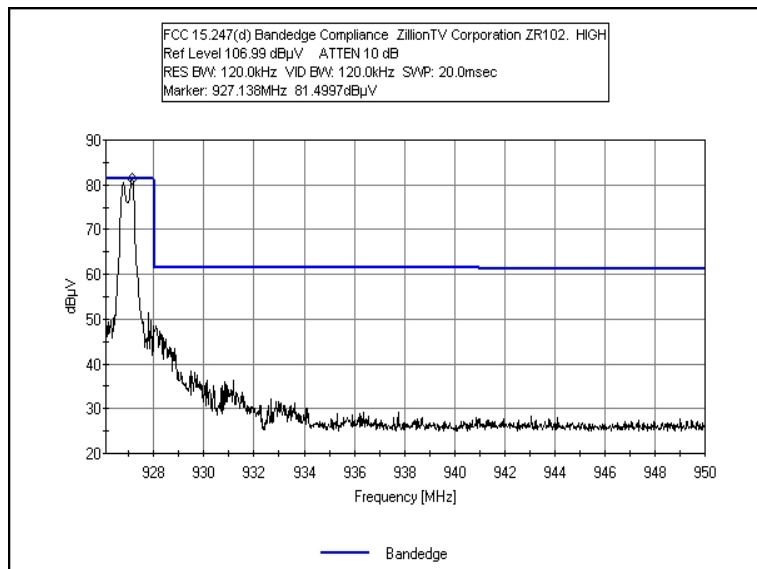
### FCC 15.247(d) BANDEDGE – LOW CHANNEL HORIZONTAL



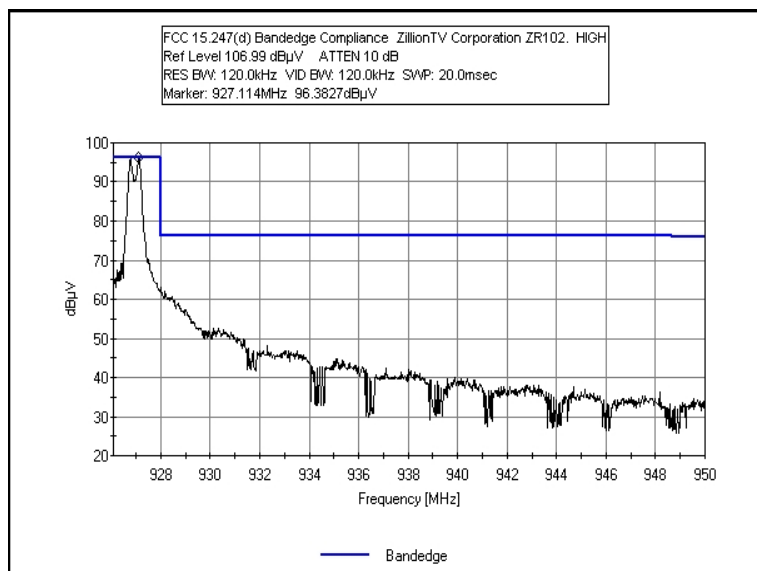
### FCC 15.247(d) BANDEDGE – LOW CHANNEL VERTICAL



## FCC 15.247(d) BANDEDGE – HIGH CHANNEL HORIZONTAL



## FCC 15.247(d) BANDEDGE – HIGH CHANNEL VERTICAL





## FCC 15.247(e) PEAK POWER SPECTRAL DENSITY

### Test Equipment

| Asset #  | Equipment       | Serial #   | Cal Date   | Cal Due    |
|----------|-----------------|------------|------------|------------|
| ANP05361 | Cable 6'        | 51         | 12/30/2008 | 12/30/2010 |
| AN01994  | Antenna         | 2453       | 12/22/2008 | 12/22/2010 |
| ANP05366 | Cable 30'       | 11         | 11/5/2008  | 11/5/2010  |
| ANP05371 | Cable 6'        | 49         | 11/10/2008 | 11/10/2010 |
| ANP05360 | Cable 20'       | 16         | 11/10/2008 | 11/10/2010 |
| AN01517  | HP 8447D Preamp | 2944A08601 | 7/8/2008   | 7/8/2010   |
| AN02872  | Agilent E4440A  | MY46186330 | 1/31/2008  | 1/31/2010  |

### Test Conditions

The EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located in the center of the test table over 10cm of Styrofoam. The support equipment is used before each test to set the EUT to the specific channel. PSA is on max hold centered at the desired channel, EMI test will be used with the solely purpose of accurate Field Strength data gathering. Same calculation from the RF power output test will be done in order to convert the field strength to power.

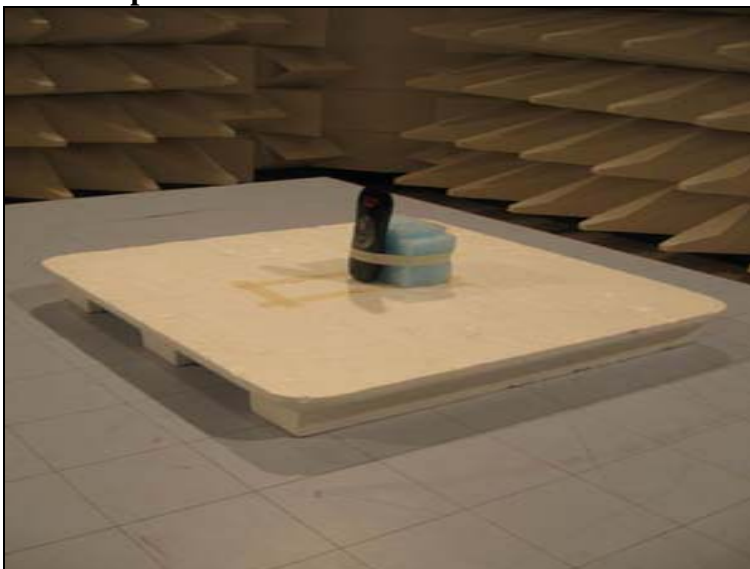
RBW = 3 kHz

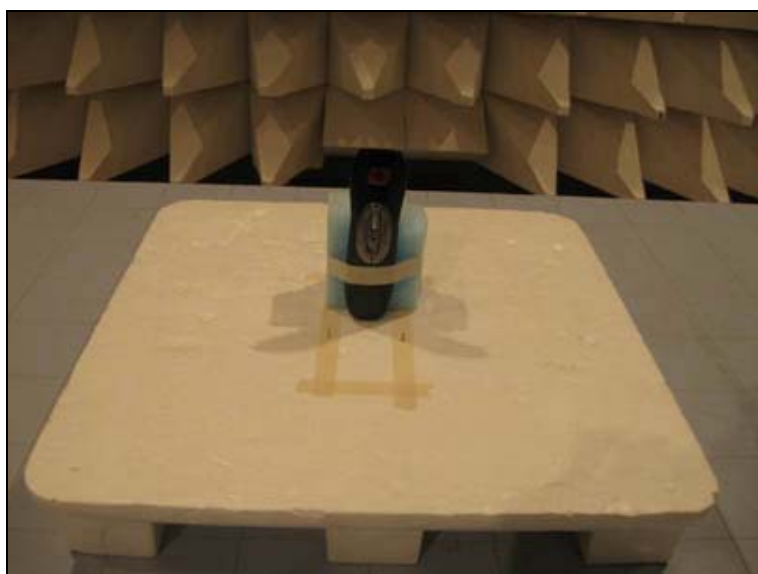
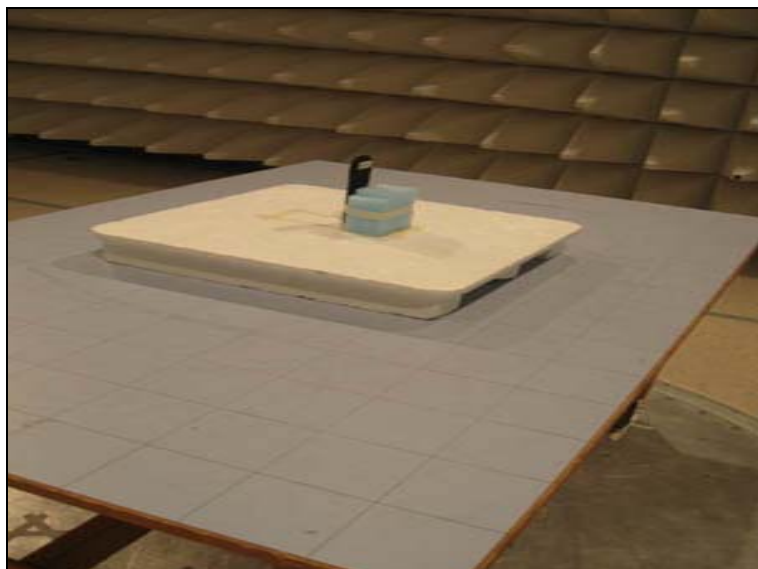
VBW = 9 kHz

Span = 300 kHz

Sweep Time = 100s

### Test Setup Photos





### Test Data

|             | Vertical       | Horizontal      | Limit     |
|-------------|----------------|-----------------|-----------|
| <b>LOW</b>  | -9.032dBm/3kHz | -19.232dBm/3kHz | 8dBm/3kHz |
| <b>MID</b>  | -8.572dBm/3kHz | -20.332dBm/3kHz | 8dBm/3kHz |
| <b>HIGH</b> | -8.632dBm/3kHz | -24.232dBm/3kHz | 8dBm/3kHz |

Test Location: CKC Laboratories • 22116 23rd Dr SE • Bothell, WA 98021-4413 • 425-402-1717

Customer: **Zillion TV Corporation.**  
 Specification: **Peak Power Spectral Density - Radiated**  
 Work Order #: **89171**  
 Test Type: **Radiated Scan**  
 Equipment: **Wireless Remote Control**  
 Manufacturer: **ZillionTV Corporation**  
 Model: **ZR102**  
 S/N: **013**

Date: 3/12/2009  
 Time: 08:39:12  
 Sequence#: 1  
 Tested By: Armando Del Angel

**Test Equipment:**

| Function        | S/N        | Calibration Date | Cal Due Date | Asset #  |
|-----------------|------------|------------------|--------------|----------|
| HP 8447D Preamp | 2944A08601 | 07/08/2008       | 07/08/2010   | AN01517  |
| Agilent E4440A  | MY46186330 | 01/31/2008       | 01/31/2010   | AN02872  |
| Cable 6'        | 51         | 12/30/2008       | 12/30/2010   | ANP05361 |
| Antenna         | 2453       | 12/22/2008       | 12/22/2010   | AN01994  |
| Cable 30'       | 11         | 11/05/2008       | 11/05/2010   | ANP05366 |
| Cable 6'        | 49         | 11/10/2008       | 11/10/2010   | ANP05371 |
| Cable 20'       | 16         | 11/10/2008       | 11/10/2010   | ANP05360 |

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

| Function                 | Manufacturer          | Model # | S/N |
|--------------------------|-----------------------|---------|-----|
| Wireless Remote Control* | ZillionTV Corporation | ZR102   | 013 |

**Support Devices:**

| Function         | Manufacturer          | Model # | S/N   |
|------------------|-----------------------|---------|-------|
| USB Base Station | ZillionTV Corporation | ZA100   | 013   |
| Laptop           | Lenovo                | T61     | 10156 |

**Test Conditions / Notes:**

|  |
|--|
| <p>Temp = 23°C<br/>         Relative Humidity = 17%<br/>         Atmospheric Pressure = 103.5kPa</p> <p>Testing Peak Power Spectral Density per FCC 15.247(e)</p> <p>The EUT is a wireless remote control.<br/>         The EUT is located in the center of the test table raised 10cm with styrofoam.<br/>         The EUT will be transmitting in the LOW, MID and HIGH channels.<br/>         The support equipment is used before each test to set the EUT to the specific channel.<br/>         The Test is being done with fresh batteries.<br/>         Because of the lack of antenna connectors the test will have to be done through radiated scans.</p> <p>RBW = 3kHz<br/>         VBW = 10kHz<br/>         Span = 300kHz<br/>         Sweep = 100s</p> |
|--|

**Transducer Legend:**

|                           |                       |
|---------------------------|-----------------------|
| T1=ANT AN01994 25-1000MHz | T2=CAB-ANP05360       |
| T3=CAB-ANP05361           | T4=CAB-ANP05366       |
| T5=CAB-ANP05371           | T6=AMP-AN01517-070808 |

| <b>Measurement Data:</b> |          | Reading listed by margin. |               |               |      |      | Test Distance: 3 Meters |      |               |        |              |
|--------------------------|----------|---------------------------|---------------|---------------|------|------|-------------------------|------|---------------|--------|--------------|
| #                        | Freq     | Rdng                      | T1            | T2            | T3   | T4   | Dist                    | Corr | Spec          | Margin | Polar        |
|                          | MHz      | dBμV                      | T5<br>dB      | T6<br>dB      | dB   | dB   | Table                   | dBμV | dBμV          | dB     | Ant          |
| 1                        | 915.092M | 88.9                      | +23.3<br>+0.4 | +1.9<br>-29.3 | +0.5 | +2.0 | +0.0<br>340             | 87.7 | 115.0<br>MID  | -27.3  | Vert<br>100  |
| 2                        | 927.076M | 88.3                      | +23.5<br>+0.5 | +2.0<br>-29.2 | +0.5 | +2.0 | +0.0<br>340             | 87.6 | 115.0<br>HIGH | -27.4  | Vert<br>100  |
| 3                        | 903.107M | 88.7                      | +23.1<br>+0.3 | +1.9<br>-29.3 | +0.5 | +2.0 | +0.0<br>339             | 87.2 | 115.0<br>LOW  | -27.8  | Vert<br>100  |
| 4                        | 903.107M | 78.5                      | +23.1<br>+0.3 | +1.9<br>-29.3 | +0.5 | +2.0 | +0.0<br>204             | 77.0 | 115.0<br>LOW  | -38.0  | Horiz<br>100 |
| 5                        | 915.092M | 77.1                      | +23.3<br>+0.4 | +1.9<br>-29.3 | +0.5 | +2.0 | +0.0<br>204             | 75.9 | 115.0<br>MID  | -39.1  | Horiz<br>100 |
| 6                        | 927.076M | 72.7                      | +23.5<br>+0.5 | +2.0<br>-29.2 | +0.5 | +2.0 | +0.0<br>204             | 72.0 | 115.0<br>HIGH | -43.0  | Horiz<br>100 |

## RSS-210 99% BANDWIDTH

### Test Equipment

| Asset #  | Equipment       | Serial #   | Cal Date   | Cal Due    |
|----------|-----------------|------------|------------|------------|
| ANP05361 | Cable 6'        | 51         | 12/30/2008 | 12/30/2010 |
| AN01994  | Antenna         | 2453       | 12/22/2008 | 12/22/2010 |
| ANP05366 | Cable 30'       | 11         | 11/5/2008  | 11/5/2010  |
| ANP05371 | Cable 6'        | 49         | 11/10/2008 | 11/10/2010 |
| ANP05360 | Cable 20'       | 16         | 11/10/2008 | 11/10/2010 |
| AN01517  | HP 8447D Preamp | 2944A08601 | 7/8/2008   | 7/8/2010   |
| AN02872  | Agilent E4440A  | MY46186330 | 1/31/2008  | 1/31/2010  |

### Test Conditions

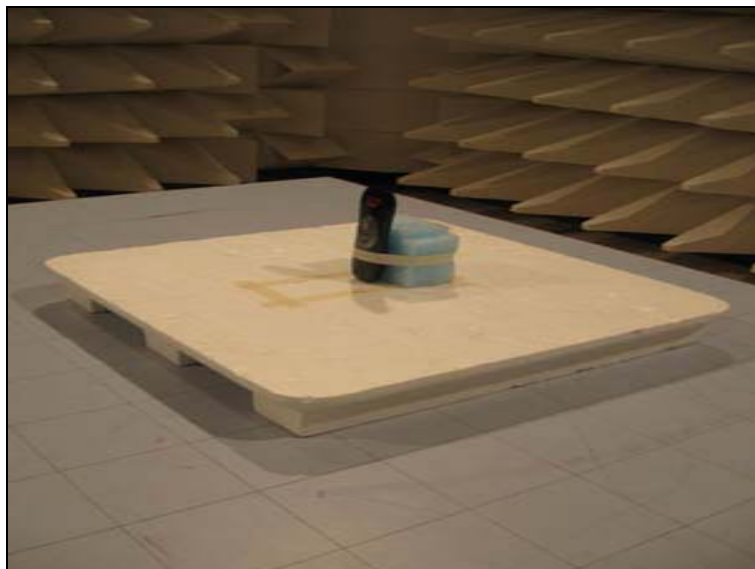
EUT is transmitting. Due to the lack of antenna connectors the test will be done through radiated measurements. EUT is located in the center of the test table over 10cm of Styrofoam. The support equipment is used before each test to set the EUT to the specific channel. PSA is on max hold, Agilent procedure used for each channel LOW, MID, HIGH.

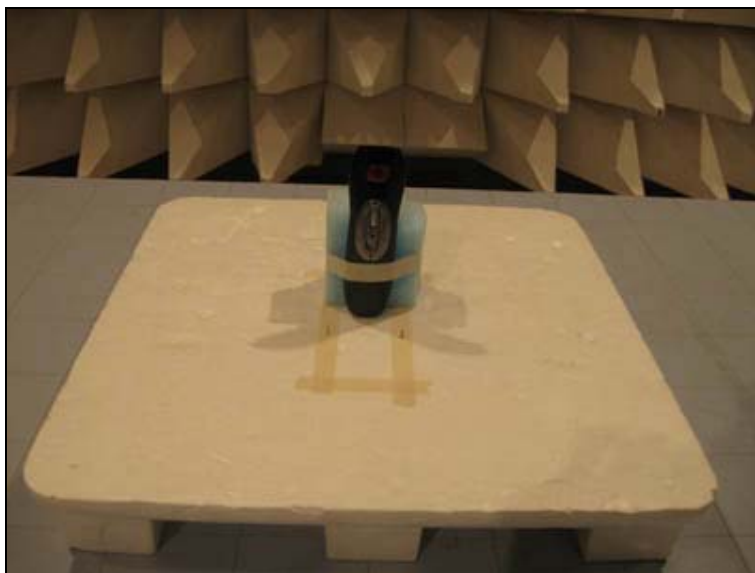
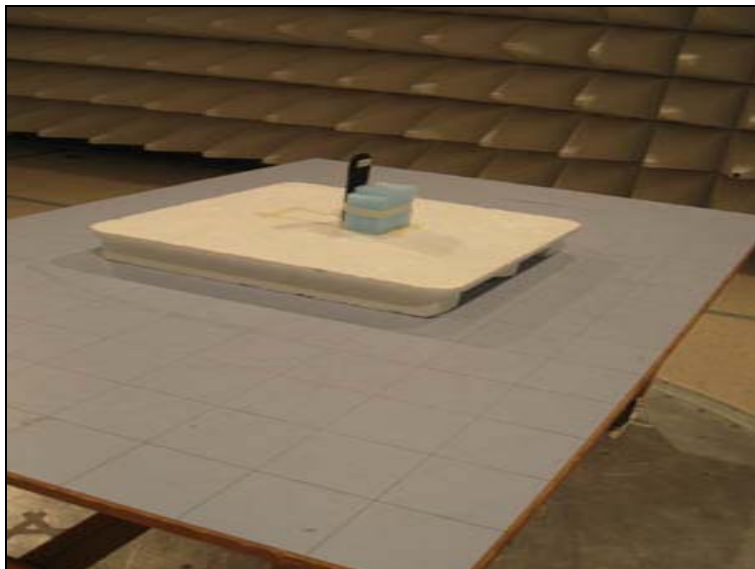
RBW = 10 kHz

VBW = 100 kHz

Span = 1 MHz

### Test Setup Photos



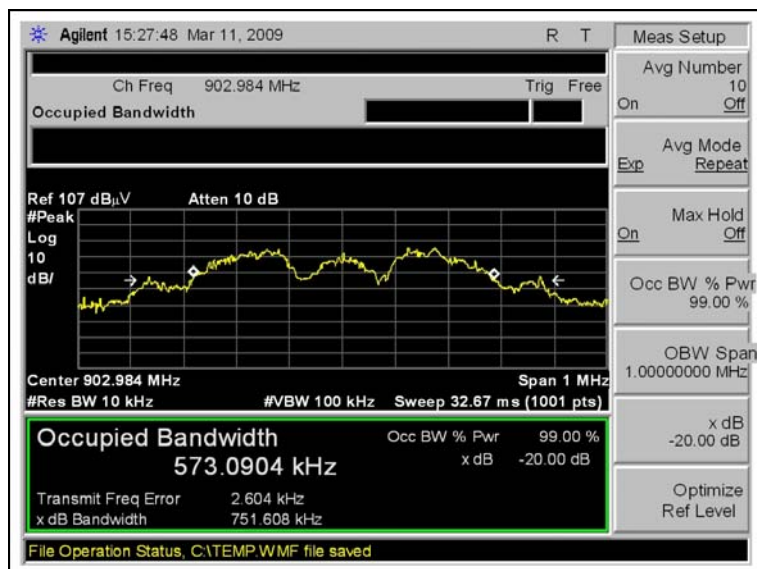


### Test Data

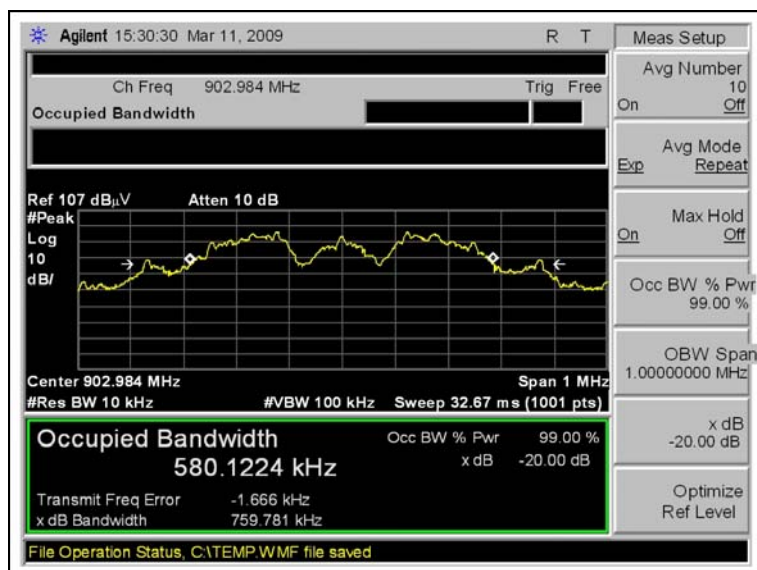
|             | <b>Vertical</b> | <b>Horizontal</b> |
|-------------|-----------------|-------------------|
| <b>LOW</b>  | 580.12kHz       | 573.09kHz         |
| <b>MID</b>  | 566.14kHz       | 564.73kHz         |
| <b>HIGH</b> | 568.01kHz       | 572.97kHz         |

## Test Plots

### RSS-210 99% BANDWIDTH – LOW CHANNEL HORIZONTAL

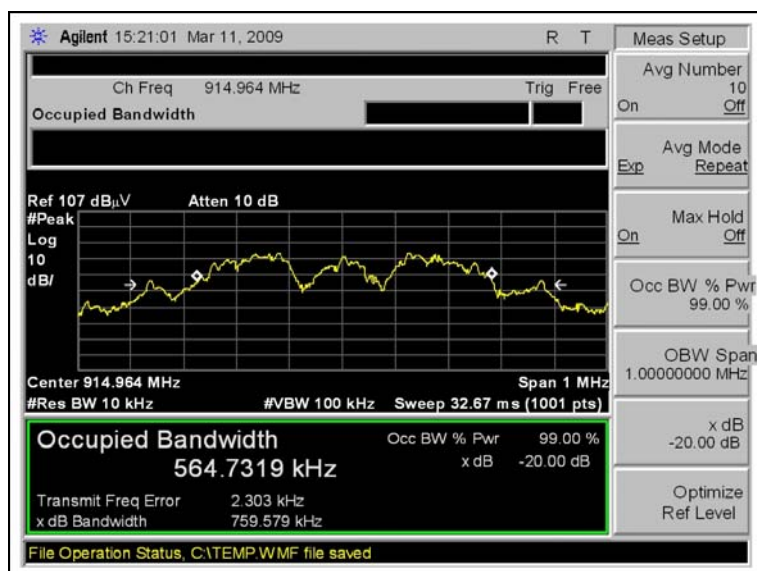


### RSS-210 99% BANDWIDTH – LOW CHANNEL VERTICAL

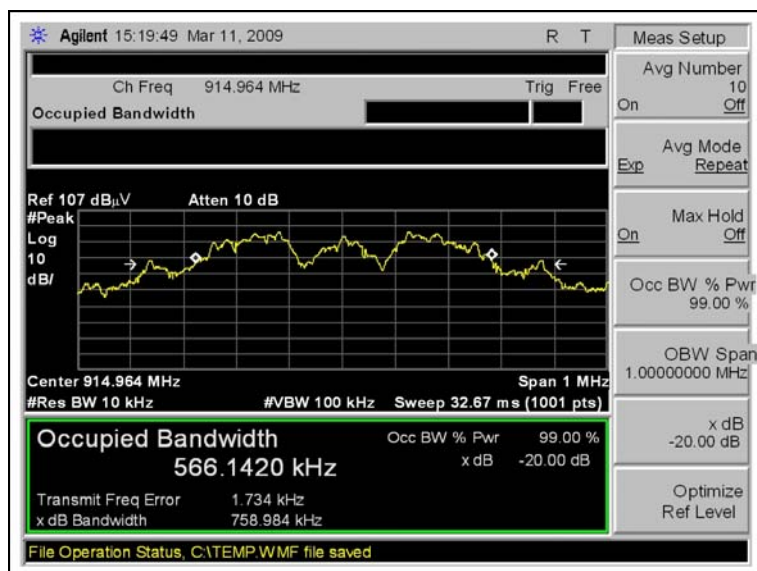




## RSS-210 99% BANDWIDTH – MID CHANNEL HORIZONTAL

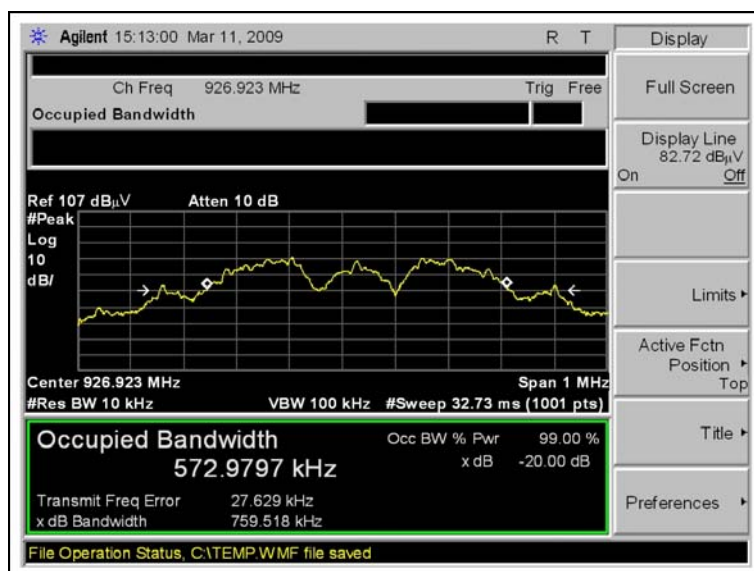


## RSS-210 99% BANDWIDTH – MID CHANNEL VERTICAL





## RSS-210 99% BANDWIDTH – HIGH CHANNEL HORIZONTAL



## RSS-210 99% BANDWIDTH – HIGH CHANNEL VERTICAL

