



**ADDENDUM TO BELKIN CORPORATION TEST REPORT FC05-022**

**FOR THE**

**BLUETOOTH TRANSMITTTER (F8Z901-TX) AND RECEIVER (F8Z901-RX)**

**FCC PART 15 SUBPART C SECTIONS 15.207, 15.209 AND 15.247**

**COMPLIANCE**

**DATE OF ISSUE: AUGUST 4, 2005**

**PREPARED FOR:**

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Date of test: April 25-30, 2005

**Report No.: FC05-022A**

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## ADMINISTRATIVE INFORMATION

**DATE OF TEST:** April 25-30, 2005

**DATE OF RECEIPT:** April 25, 2005

**MANUFACTURER:** Belkin Corporation  
501 West Walnut Street  
Compton, CA 90220

**REPRESENTATIVE:** Tac Pham

**TEST LOCATION:** CKC Laboratories, Inc.  
110 Olinda Place  
Brea, CA 92621

**TEST METHOD:** ANSI C63.4 (2003) and FCC-MP5

**PURPOSE OF TEST:** To demonstrate the compliance of the Bluetooth Transmitter (F8Z901-TX) and Receiver (F8Z901-RX) with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209 & 15.247 devices. **Addendum A** is to remove some occupied bandwidth plots and a carrier frequency separation plot, revise the RF output power and average time of occupancy plots.

## FCC TO CANADA STANDARD CORRELATION MATRIX

| Canadian Standard | Canadian Section | FCC Standard | FCC Section       | Test Description                         |
|-------------------|------------------|--------------|-------------------|------------------------------------------|
| RSS 210           | 5.5              | 47CFR        | 15.203            | Antenna Connector Requirements           |
| RSS 210           | 6.2.1            | 47CFR        | 15.209            | General Radiated Emissions Requirement   |
| RSS 210           | 6.3              | 47CFR        | 15.205            | Restricted Bands of Operation            |
| RSS 210           | 6.4              | 47CFR        | 15.215(c)         | Frequency Stability Recommendation       |
| RSS 210           | 6.5              | 47CFR        | 15.35(c)          | Pulsed Operation                         |
| RSS 210           | 6.6              | 47CFR        | 15.207            | AC Mains Conducted Emissions Requirement |
| RSS 210           | 6.2.2(o)(a1)     | 47CFR        | 15.247(a)(1)      | Minimum Channel Bandwidth                |
| RSS 210           | 6.2.2(o)(a1)     | 47CFR        | 15.247(g)         | Hopping Sequence                         |
| RSS 210           | 6.2.2(o)(a1)     | 47CFR        | 15.247(h)         | Incorporation of Intelligence            |
| RSS 210           | 6.2.2(o)(a2)     | 47CFR        | 15.247(a)(1)(i)   | Average Time of Occupancy                |
| RSS 210           | 6.2.2(o)(a2)     | 47CFR        | 15.247(b)(2)      | RF Power Output                          |
| RSS 210           | 6.2.2(o)(a3)     | 47CFR        | 15.247(a)(1)(ii)  | Average Time of Occupancy                |
| RSS 210           | 6.2.2(o)(a3)     | 47CFR        | 15.247(a)(1)(iii) | Average Time of Occupancy                |
| RSS 210           | 6.2.2(o)(a3)     | 47CFR        | 15.247(b)(1)      | RF Power Output                          |
| RSS 210           | 6.2.2(o)(a3)     | 47CFR        | 15.247(b)(4)      | Directional Gain Antennae                |
| RSS 210           | 6.2.2(o)(b)      | 47CFR        | 15.247(d)         | Peak Power Spectral Density              |
| RSS 210           | 6.2.2(o)(b)      | 47CFR        | 15.247(b)(3)      | RF Power Output                          |
| RSS 210           | 6.2.2(o)(b)      | 47CFR        | 15.247(a)(2)      | Minimum 6dB Bandwidth                    |
| RSS 210           | 6.2.2(o)(b)      | 47CFR        | 15.247(b)(4)      | Directional Gain Antennae                |
| RSS 210           | 6.2.2(o)(b)      | 47CFR        | 15.247(f)         | Hybrid Systems                           |
| RSS 210           | 6.2.2(o)(e1)     | 47CFR        | 15.247(c )        | Spurious Emissions                       |
|                   | IC 3172-A        |              | 90473             | Site File No.                            |

Notes: Rule Sections for RSS 210 are taken from RSS 210 Issue 5 Amendment 1

### CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

## **APPROVALS**

Steve Behm, Director of Engineering Services

### **QUALITY ASSURANCE:**



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Joyce Walker, Quality Assurance Administrative  
Manager

### **TEST PERSONNEL:**



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Eddie Wong, EMC Engineer

## EQUIPMENT UNDER TEST (EUT) DESCRIPTION

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

### FCC 15.31(e) Voltage Variations

Ipod is connected to the AC charger; a close field probe is placed near the EUT's antenna. The RF level is observed with a spectrum analyzer. Voltage is varied 80% to 115%. Result: no variation in power level was detected.

### FCC 15.31(m) Number Of Channels

This device was tested on low, middle and high channels.

### FCC 15.33(a) Frequency Ranges Tested

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209/15.247 Radiated Emissions: 9 kHz – 25 GHz

| FCC SECTION 15.35:<br>ANALYZER BANDWIDTH SETTINGS PER FREQUENCY RANGE |                     |                  |                   |
|-----------------------------------------------------------------------|---------------------|------------------|-------------------|
| TEST                                                                  | BEGINNING FREQUENCY | ENDING FREQUENCY | BANDWIDTH SETTING |
| CONDUCTED EMISSIONS                                                   | 150 kHz             | 30 MHz           | 9 kHz             |
| RADIATED EMISSIONS                                                    | 9 kHz               | 150 kHz          | 200 Hz            |
| RADIATED EMISSIONS                                                    | 150 kHz             | 30 MHz           | 9 kHz             |
| RADIATED EMISSIONS                                                    | 30 MHz              | 1000 MHz         | 120 kHz           |
| RADIATED EMISSIONS                                                    | 1000 MHz            | 25 GHz           | 1 MHz             |

### FCC 15.203 Antenna Requirements

The antenna is an integral part of the EUT and is non-removable; therefore the EUT complies with Section 15.203 of the FCC rules.

### FCC 15.205 Restricted Bands

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

### Eut Operating Frequency

The EUT was operating at 2402-2480 MHz

The EUT is a frequency hopping device operating in the 2400 – 2483.5 MHz band.

## EQUIPMENT UNDER TEST

### **Bluetooth Transmitter**

Manuf: Belkin  
Model: F8Z901-TX  
Serial: NA  
FCC ID: pending

### **Bluetooth Receiver**

Manuf: Belkin  
Model: F8Z901-RX  
Serial: NA  
FCC ID: pending

## PERIPHERAL DEVICES

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

### **Power Adapter**

Manuf: Ipod  
Model: A1070  
Serial: NA  
FCC ID: NA

### **Laptop**

Manuf: Gateway  
Model: Solo 5150  
Serial: BC599030987  
FCC ID: NA

### **Power Supply**

Manuf: Topward  
Model: 6306D  
Serial: NA  
FCC ID: NA

### **MP3 Player**

Manuf: Ipod  
Model: A1040  
Serial: U23211J3NRH  
FCC ID: NA

## REPORT OF MEASUREMENTS

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

| Table 1: FCC 15.207 Six Highest Conducted Emission Levels: F8Z901-TX |                          |                    |           |             |  |                              |                       |              |       |
|----------------------------------------------------------------------|--------------------------|--------------------|-----------|-------------|--|------------------------------|-----------------------|--------------|-------|
| FREQUENCY<br>MHz                                                     | METER<br>READING<br>dBμV | CORRECTION FACTORS |           |             |  | CORRECTED<br>READING<br>dBμV | SPEC<br>LIMIT<br>dBμV | MARGIN<br>dB | NOTES |
|                                                                      |                          | Lisn<br>dB         | HPF<br>dB | Cable<br>dB |  |                              |                       |              |       |
| 0.150000                                                             | 29.8                     | 0.1                | 3.1       | 0.0         |  | 33.0                         | 56.0                  | -23.0        | B     |
| 0.150727                                                             | 29.9                     | 0.1                | 3.1       | 0.0         |  | 33.1                         | 56.0                  | -22.9        | W     |
| 0.648859                                                             | 22.8                     | 0.0                | 0.1       | 0.1         |  | 23.0                         | 46.0                  | -23.0        | B     |
| 0.651768                                                             | 23.6                     | 0.0                | 0.1       | 0.1         |  | 23.8                         | 46.0                  | -22.2        | W     |
| 0.842294                                                             | 21.8                     | 0.1                | 0.2       | 0.1         |  | 22.2                         | 46.0                  | -23.8        | B     |
| 3.832835                                                             | 21.6                     | 0.1                | 0.1       | 0.2         |  | 22.0                         | 46.0                  | -24.0        | B     |

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

NOTES: B = Black Lead  
W = White Lead

COMMENTS: The EUT is connected to earphone port of a support Ipod MP3 Player that is placed on the wooden table. The EUT transmits digitized audio signal to the receiver. EUT Frequency: 2402-2480 MHz. Frequency tested: 150 kHz – 30 MHz. 21°C, 43% relative humidity.

**Table 2: FCC 15.207 Six Highest Conducted Emission Levels: F8Z901-RX**

| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |           |             |  | CORRECTED<br>READING<br>dB $\mu$ V | SPEC<br>LIMIT<br>dB $\mu$ V | MARGIN<br>dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|--|------------------------------------|-----------------------------|--------------|-------|
|                  |                                | Lisn<br>dB         | HPF<br>dB | Cable<br>dB |  |                                    |                             |              |       |
| 0.289622         | 49.5                           | 0.1                | 0.2       | 0.0         |  | 49.8                               | 50.5                        | -0.7         | W     |
| 0.574685         | 43.8                           | 0.0                | 0.1       | 0.1         |  | 44.0                               | 46.0                        | -2.0         | W     |
| 0.579048         | 44.2                           | 0.0                | 0.1       | 0.1         |  | 44.4                               | 46.0                        | -1.6         | W     |
| 0.580502         | 43.8                           | 0.0                | 0.1       | 0.1         |  | 44.0                               | 46.0                        | -2.0         | W     |
| 0.643042         | 43.5                           | 0.0                | 0.1       | 0.1         |  | 43.7                               | 46.0                        | -2.3         | B     |
| 0.652495         | 43.8                           | 0.0                | 0.1       | 0.1         |  | 44.0                               | 46.0                        | -2.0         | B     |

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

NOTES: B = Black Lead  
W = White Lead

COMMENTS: The EUT is placed on the wooden table. RCA ports are connected to support audio system; earphone port is connected to a pair of earphone. The EUT receives digitized audio signal from a remote transmitter and converts to audio signal. EUT Frequency: 2402-2480 MHz. Frequency tested: 150 kHz – 30 MHz. 21°C, 43% relative humidity.

**Table 3: FCC 15.209 Six Highest Radiated Emission Levels: F8Z901-RX**

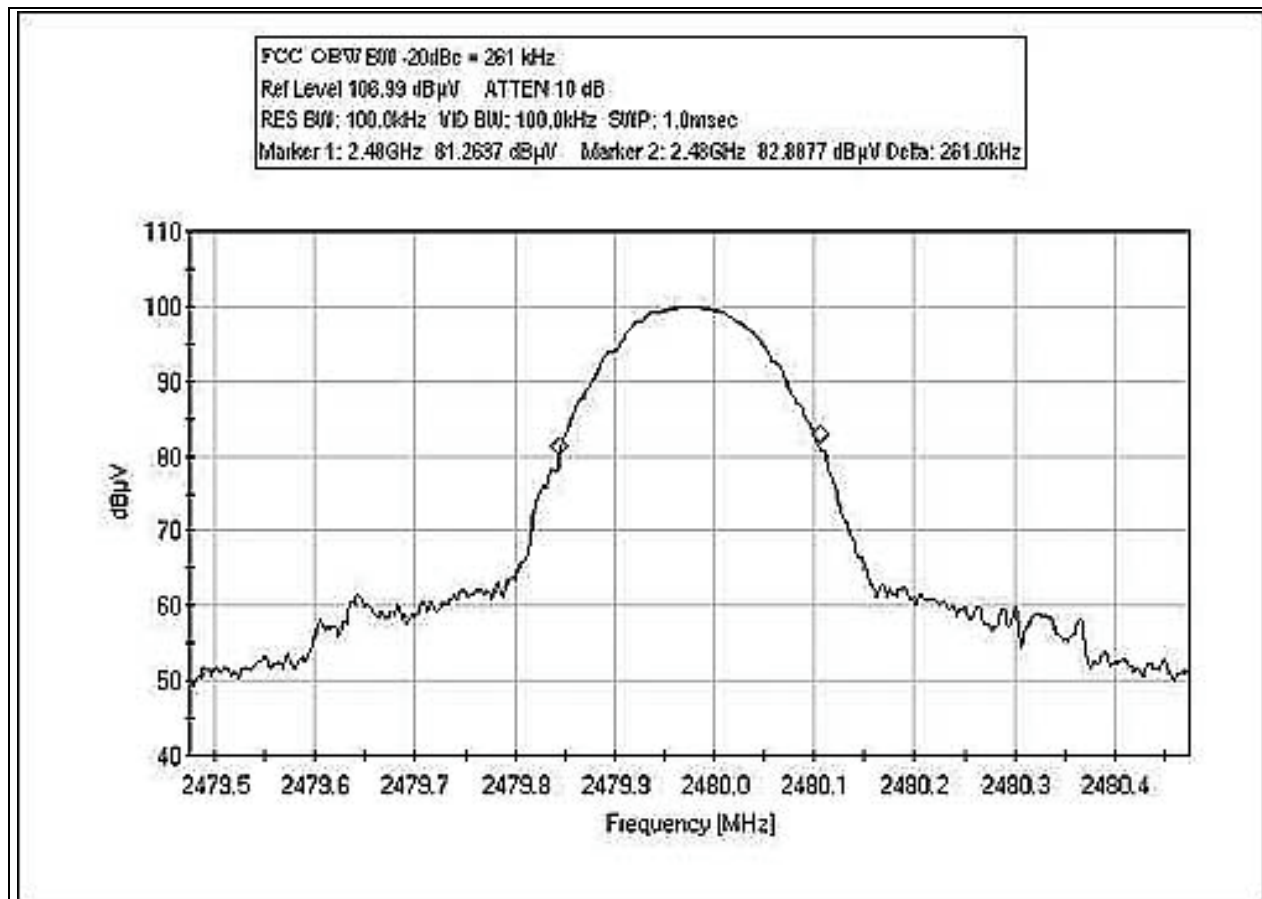
| FREQUENCY<br>MHz | METER<br>READING<br>dBμV | CORRECTION FACTORS |           |             |              | CORRECTED<br>READING<br>dBμV/m | SPEC<br>LIMIT<br>dBμV/m | MARGIN<br>dB | NOTES |
|------------------|--------------------------|--------------------|-----------|-------------|--------------|--------------------------------|-------------------------|--------------|-------|
|                  |                          | Ant<br>dB          | Amp<br>dB | Cable<br>dB | Filter<br>dB |                                |                         |              |       |
| 124.945          | 38.2                     | 12.1               | -27.6     | 2.2         | 0.0          | 24.9                           | 43.5                    | -18.6        | V     |
| 303.935          | 39.6                     | 14.1               | -27.5     | 3.5         | 0.0          | 29.7                           | 46.0                    | -16.3        | H     |
| 351.945          | 36.8                     | 15.4               | -27.6     | 4.0         | 0.0          | 28.6                           | 46.0                    | -17.4        | H     |
| 367.953          | 35.4                     | 15.8               | -27.5     | 4.0         | 0.0          | 27.7                           | 46.0                    | -18.3        | H     |
| 383.971          | 37.2                     | 16.1               | -27.5     | 4.1         | 0.0          | 29.9                           | 46.0                    | -16.1        | H     |
| 1601.000         | 53.1                     | 24.8               | -38.4     | 3.3         | 0.4          | 43.2                           | 54.0                    | -10.8        | VA    |

Test Method: ANSI C63.4 (2003)/FCC-MP5  
Spec Limit: FCC Part 15 Subpart C Section 15.209  
Test Distance: 3 Meters

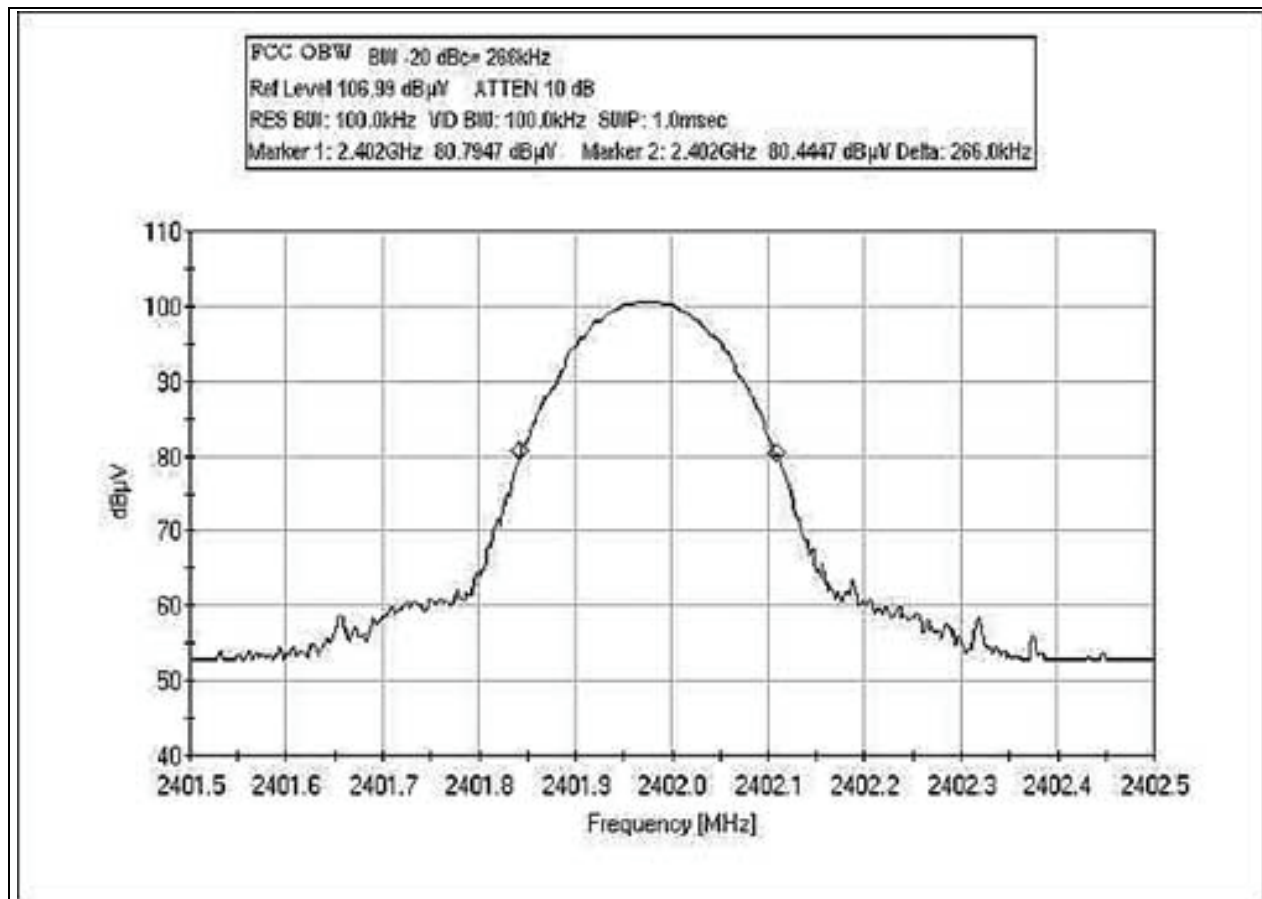
NOTES: H = Horizontal Polarization  
V = Vertical Polarization  
A = Average Reading

COMMENTS: The EUT (receiver) is placed on the wooden table. The RCA jacks are connected to an audio device and the headphone jack is connected to a stereo headphone. Remote Ipad plays MPS file and transmit the bluetooth signal to the EUT. Receiving Frequency: 2402-2480 MHz, Hopping. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz,VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz,VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

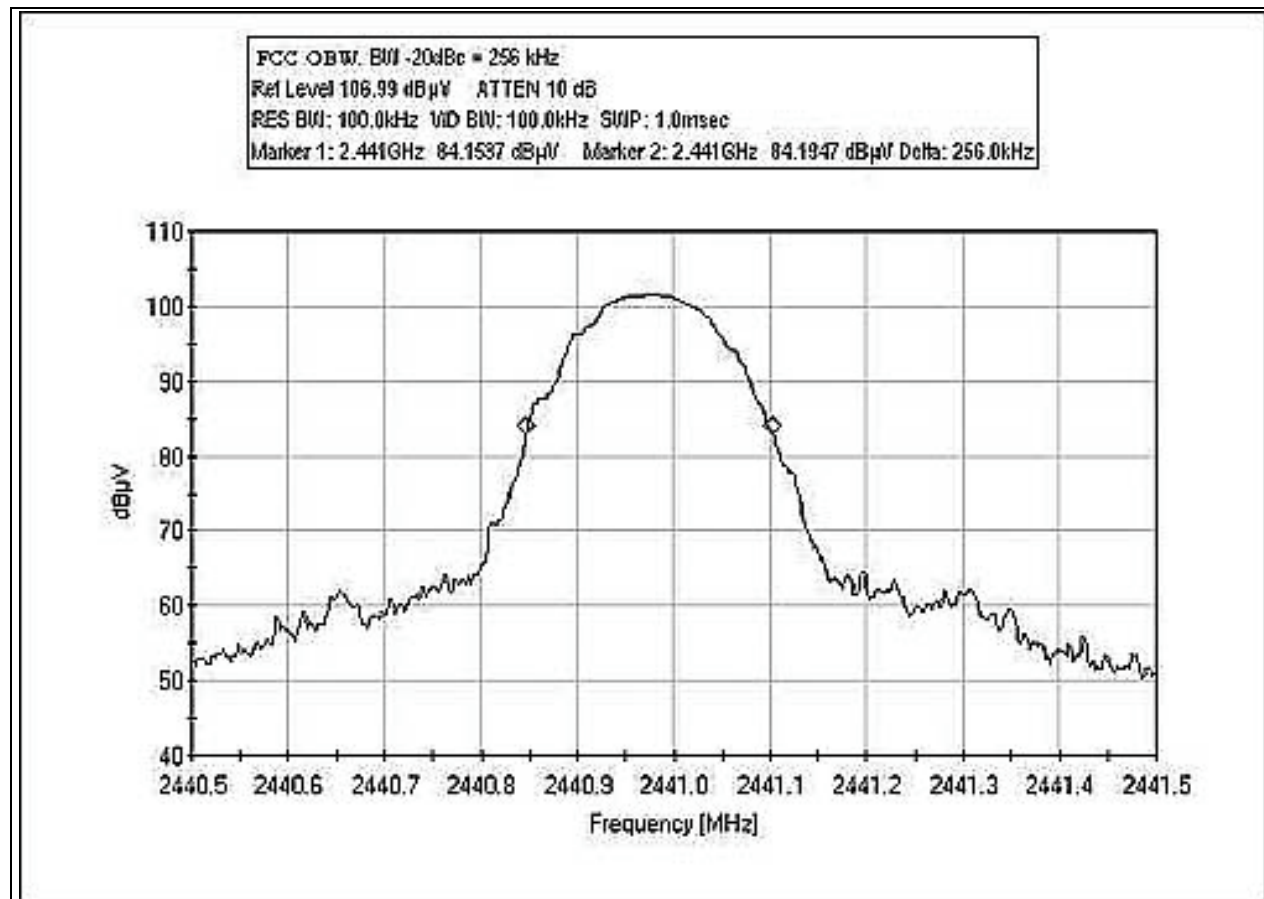
# FCC 15.247(a)(1) OCCUPIED BANDWIDTH -20dBc HIGH



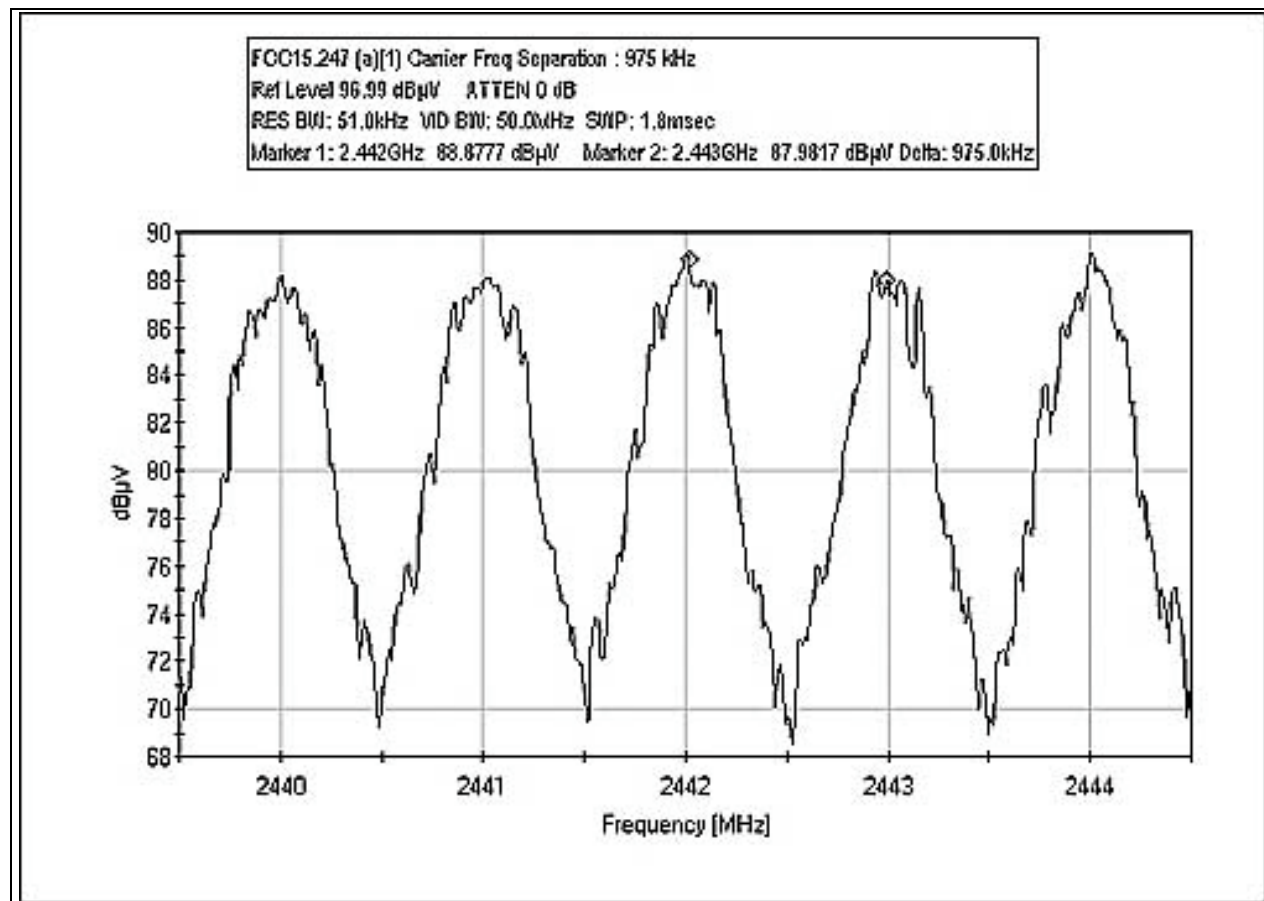
**FCC 15.247(a)(1) OCCUPIED BANDWIDTH -20dBc LOW**



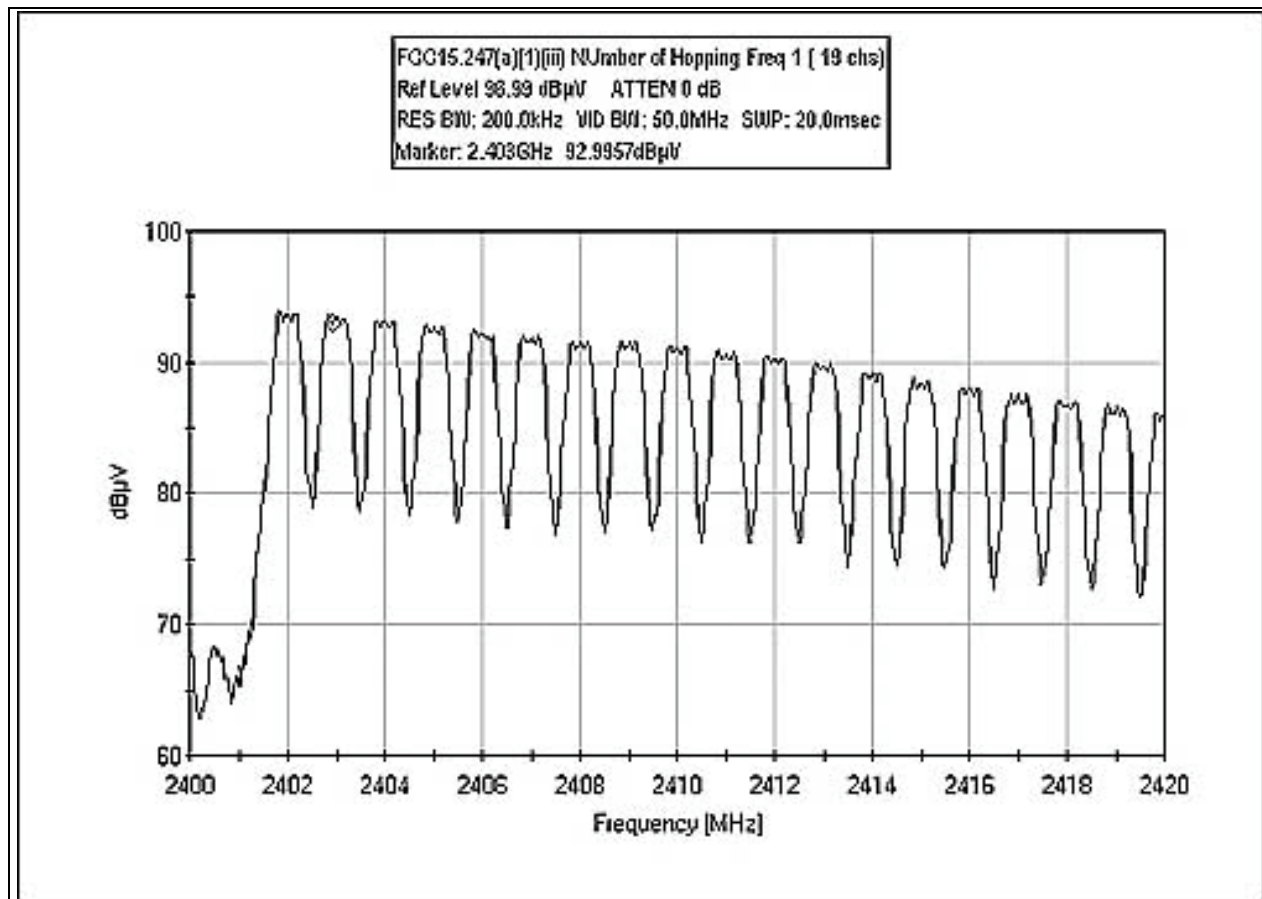
**FCC 15.247(a)(1) OCCUPIED BANDWIDTH -20dBc MID**



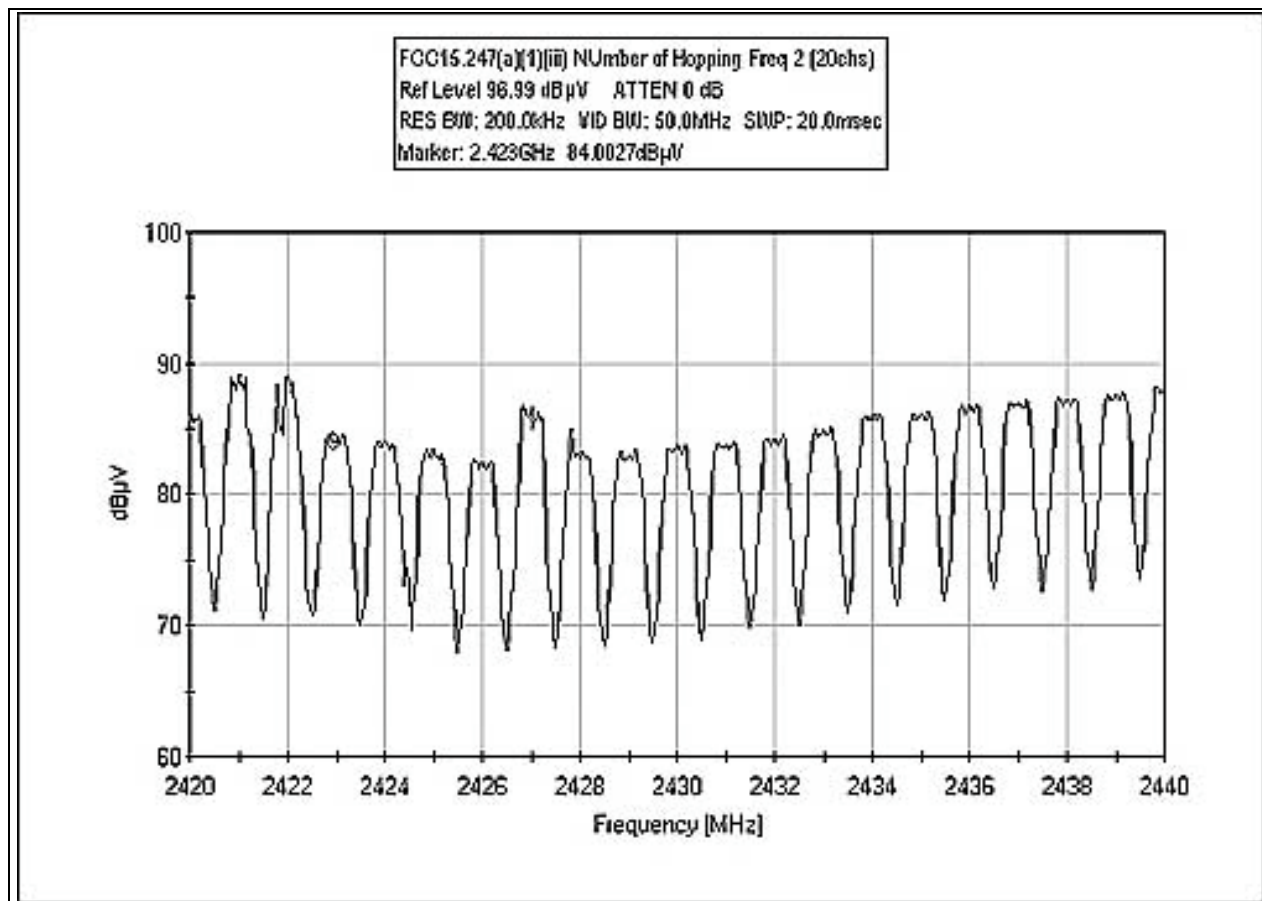
## FCC 15.247(a)(1) CARRIER FREQUENCY SEPARATION



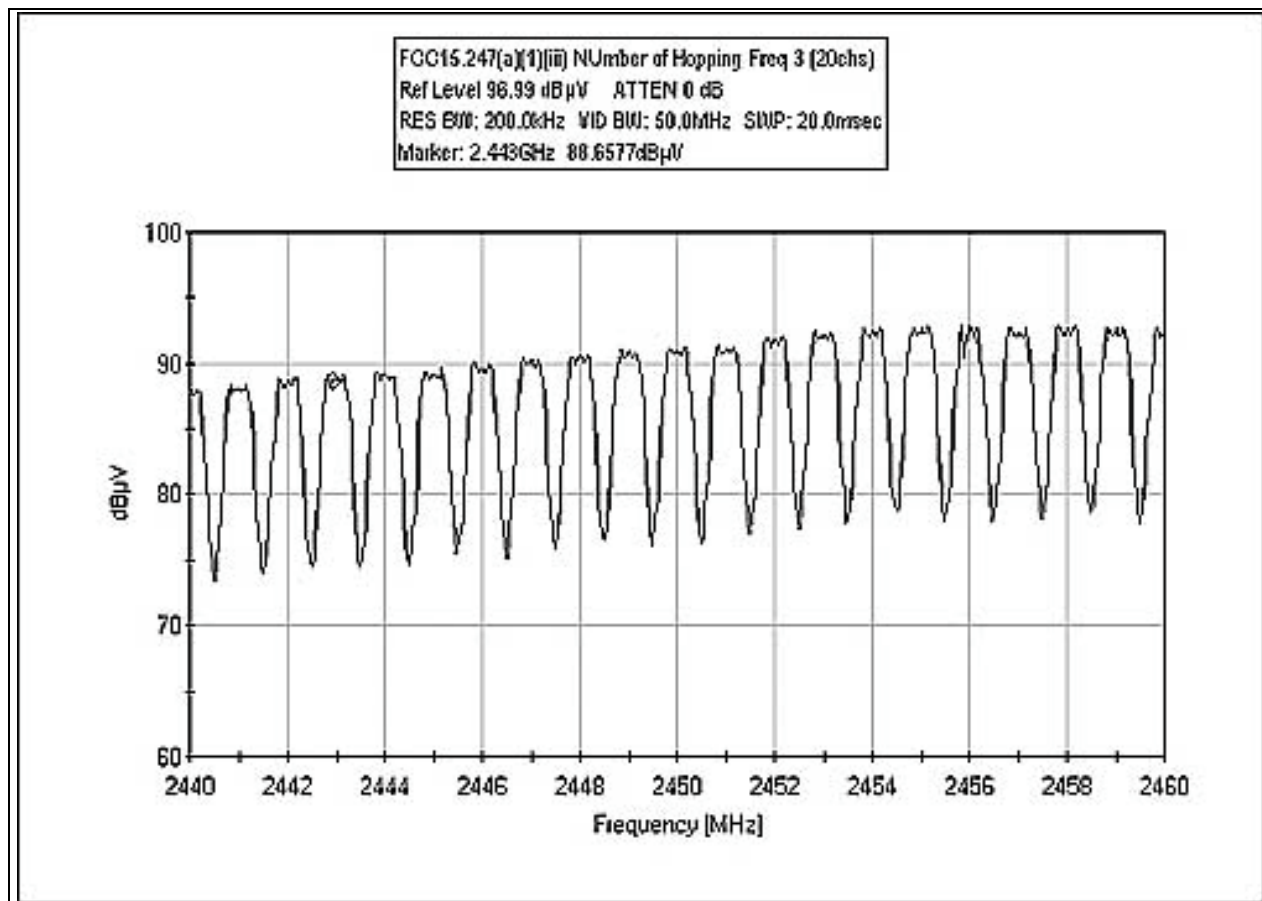
**FCC 15.247(a)(1)(iii) NUMBER OF HOPPING FREQUENCY 1**



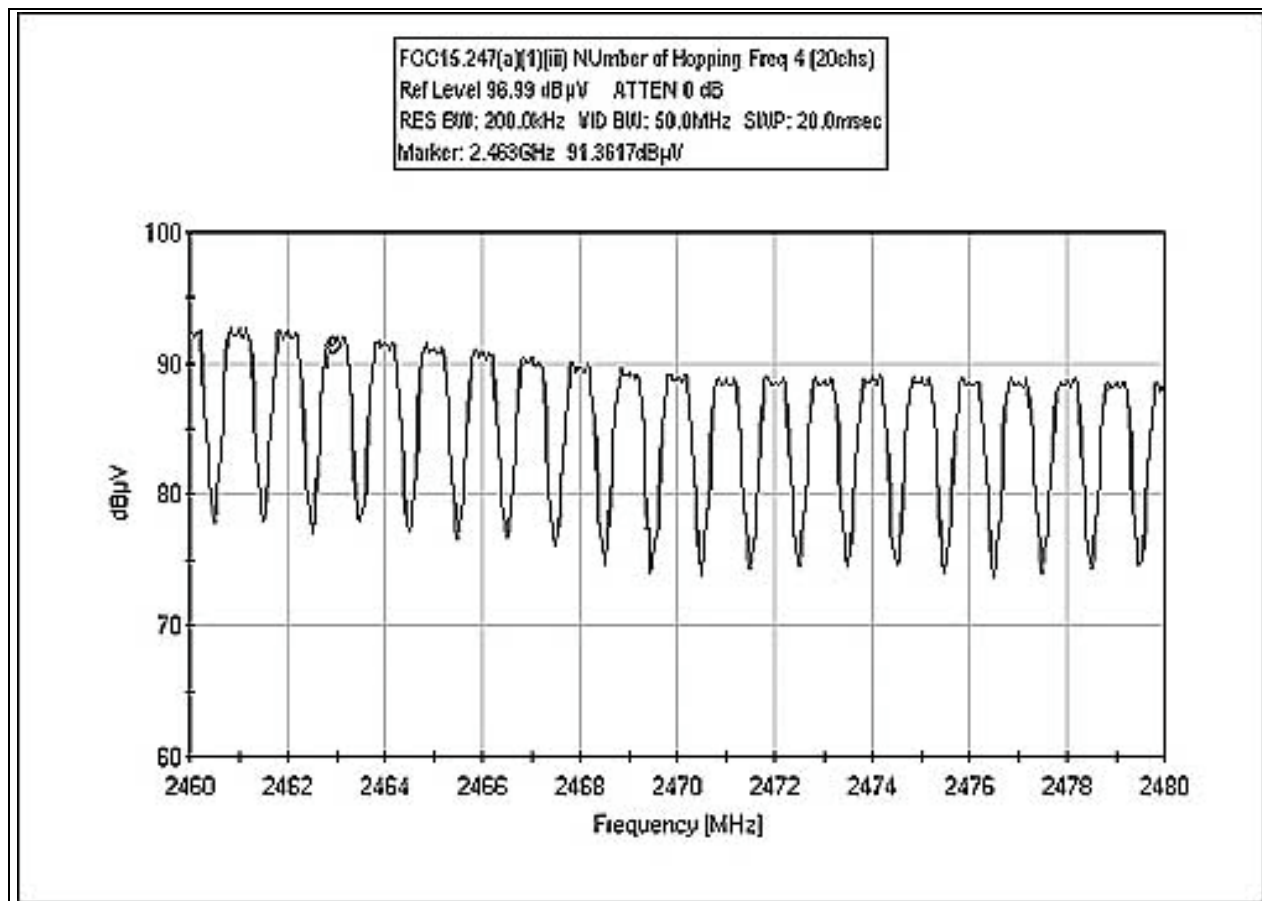
FCC 15.247(a)(1)(iii) NUMBER OF HOPPING FREQUENCY 2



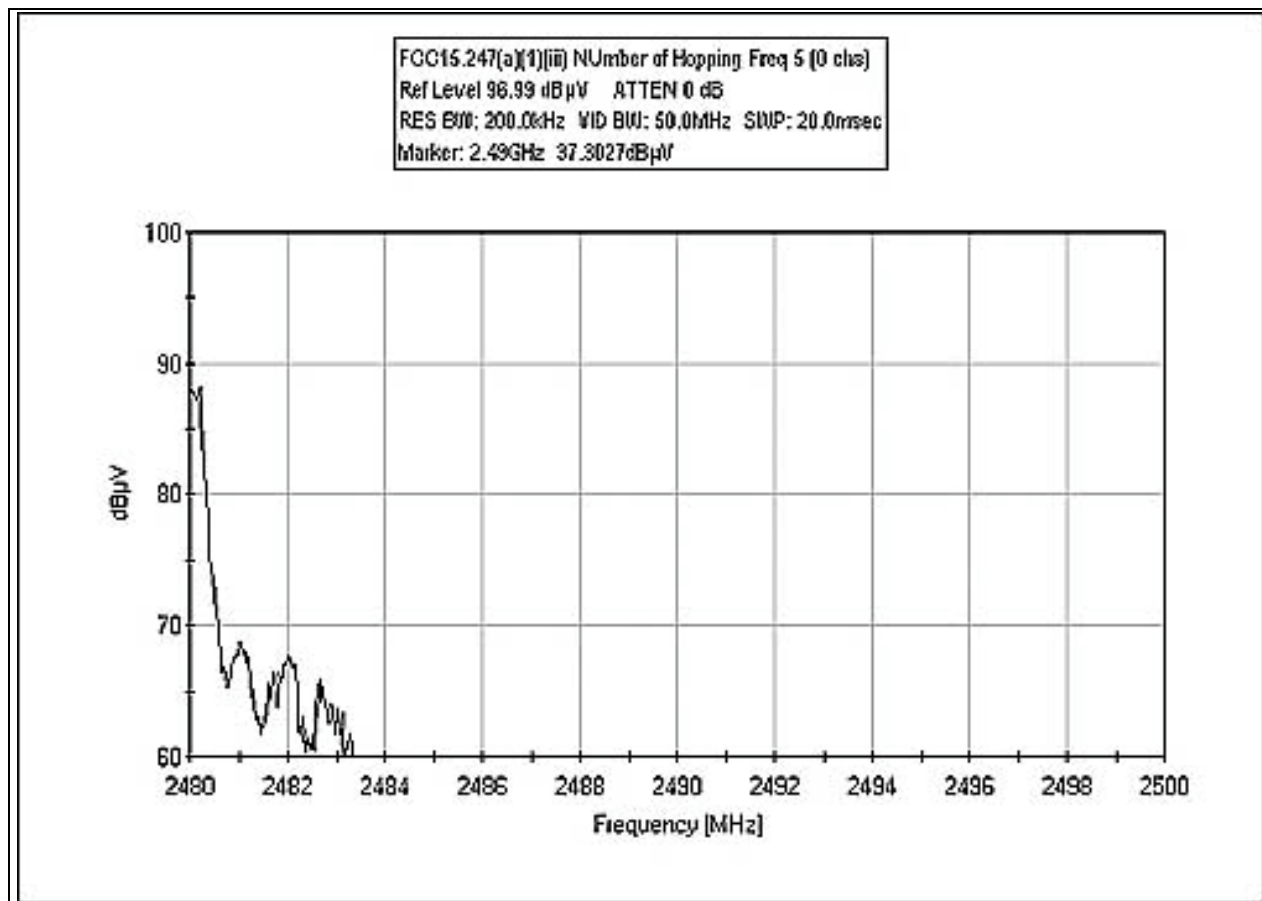
**FCC 15.247(a)(1)(iii) NUMBER OF HOPPING FREQUENCY 3**



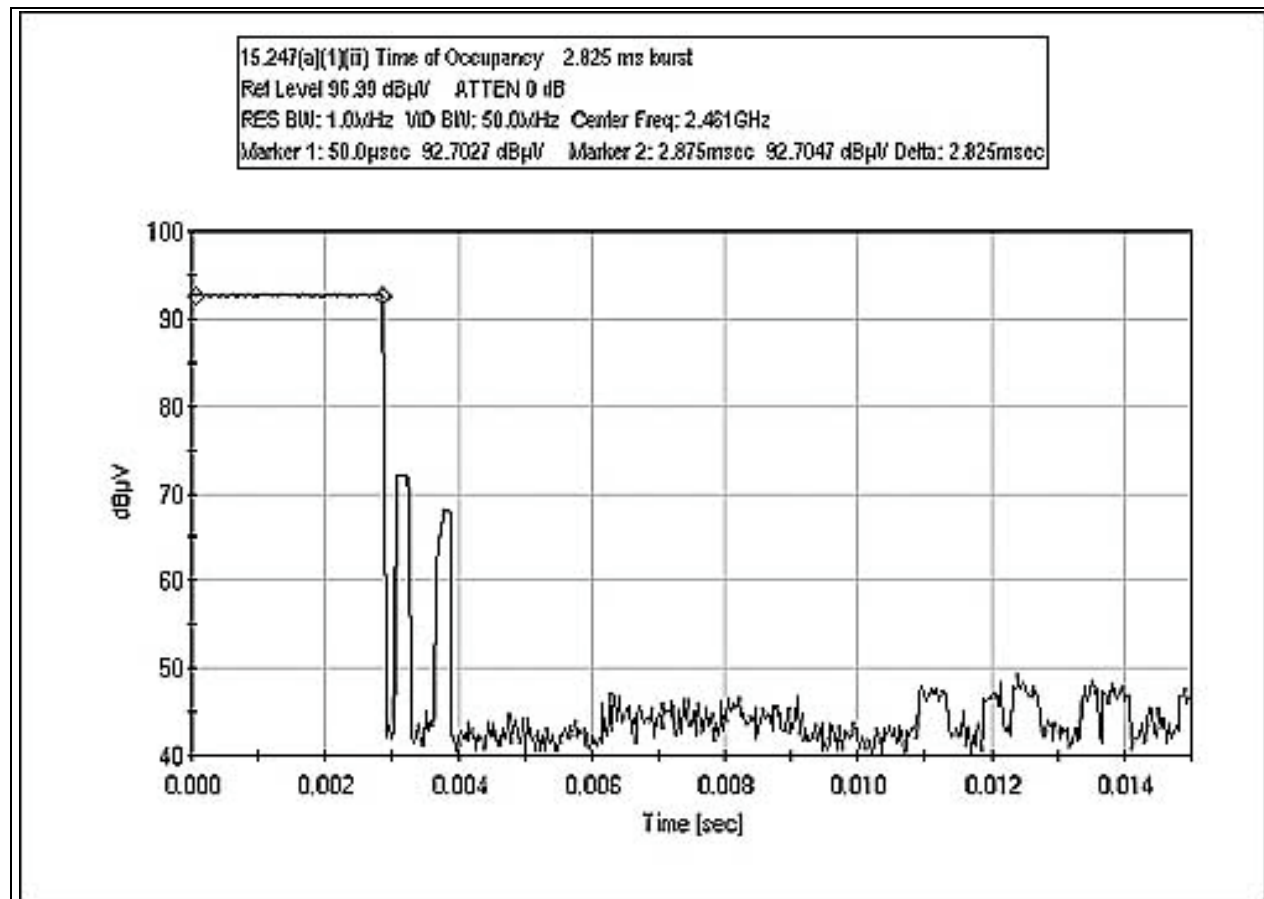
# FCC 15.247(a)(1)(iii) NUMBER OF HOPPING FREQUENCY 4



**FCC 15.247(a)(1)(iii) NUMBER OF HOPPING FREQUENCY 5**



# FCC 15.247(a)(1)(iii) AVERAGE TIME OF OCCUPANCY

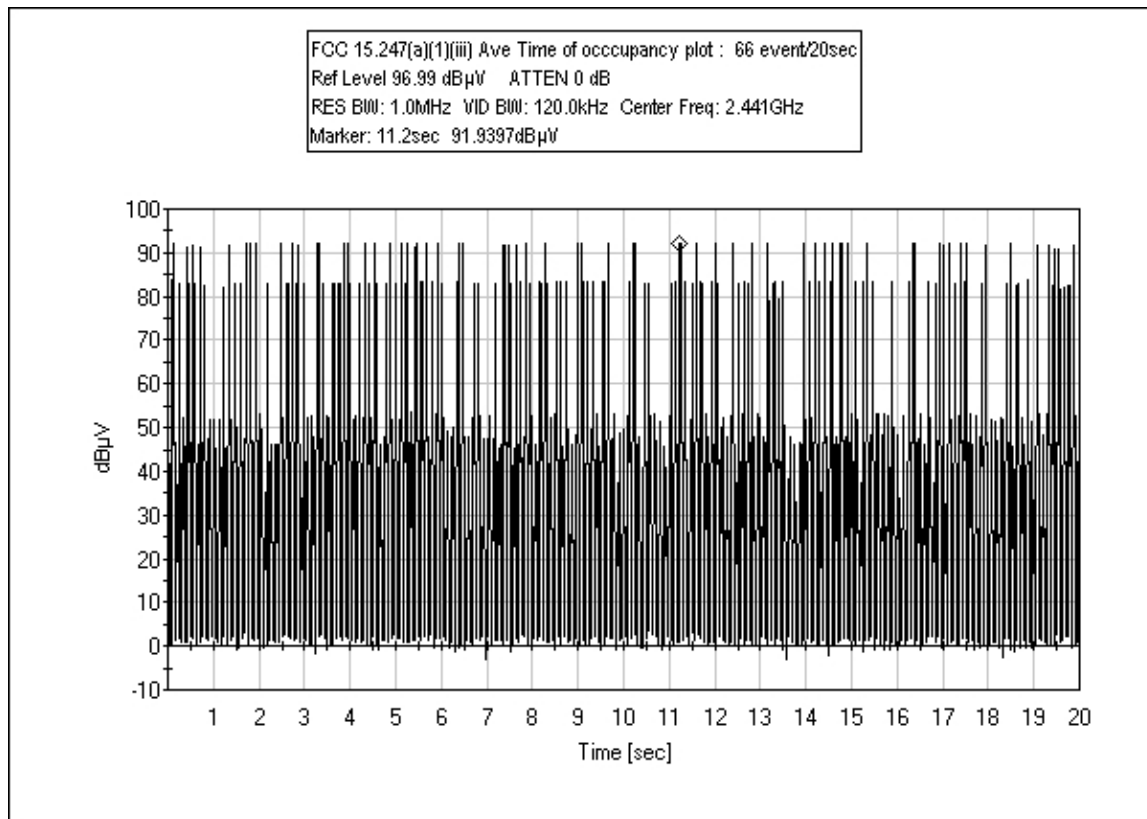


# FCC 15.247(a)(1)(iii) AVERAGE TIME OF OCCUPANCY AVERAGE 1

## Total hopping channel = 79 channels

79 x 0.4 sec = 31.6 sec.

1 burst : FCC15.247(a)(1)(iii) Occu time 1JPG = 2.825 mSec



(A sample plot of 20 sec sweep)

10 sweeps were measure and the average was calculated to be 54.6/ 20 sec  
therefore 2.73 event/sec.

2.73 x 2.825 ms(on time) = 7.7 mSec of on time per sec.

per spec 0.4 sec x 79 channel = 31.6 sec,

Therefore in **31.6 sec** there are 31.6 x 7.7 mSec of on time  
=243.32 mSec = 0.2433 Sec = **0.3 Sec of on time**

Hence fulfilled the **NOT** greater than 0.4 sec within a period of 0.4 sec multiply by the number of hopping channels employed.

## FCC 15.247(b)(1) RF OUTPUT POWER

### F8Z901-TX

The EUT was placed on the wooden table, setup to transmit in LMH channels. The RF field strength was measured with a horn antenna, amplifier and a Spectrum analyzer. The three orthogonal axes were investigated and orientation with maximum emission was recorded.

The EUT was then substituted with a horn antenna. A signal generator is connected to the substitution horn antenna, transmitting a CW signal. The output level of the signal generator was adjusted to match the recorded RF level as recorded earlier.

The RF power at the feed point was then measured and reported as EIRP.

Gain =  $20 \cdot \log(f \text{ MHz}) - 29.77$  - (transducer factor in dB)

Sig Gen reading + Gain of the substitution antenna (dBi) = EIRP Power in watts

| Freq     | EIRP (dBm) | EIRP (W) |
|----------|------------|----------|
| 2402 MHz | 0.9        | 0.0012   |
| 2441 MHz | 1.5        | 0.0014   |
| 2480 MHz | 1.7        | 0.0015   |

## F8Z901-RX

The EUT was placed on the wooden table, setup to transmit in LMH channels. The RF field strength was measured with a horn antenna, amplifier and a Spectrum analyzer. The three orthogonal axes were investigated and orientation with maximum emission was recorded.

The EUT was then substituted with a horn antenna. A signal generator is connected to the substitution horn antenna, transmitting a CW signal. The output level of the signal generator was adjusted to match the recorded RF level as recorded earlier.

The RF power at the feed point was then measured and reported as EIRP.

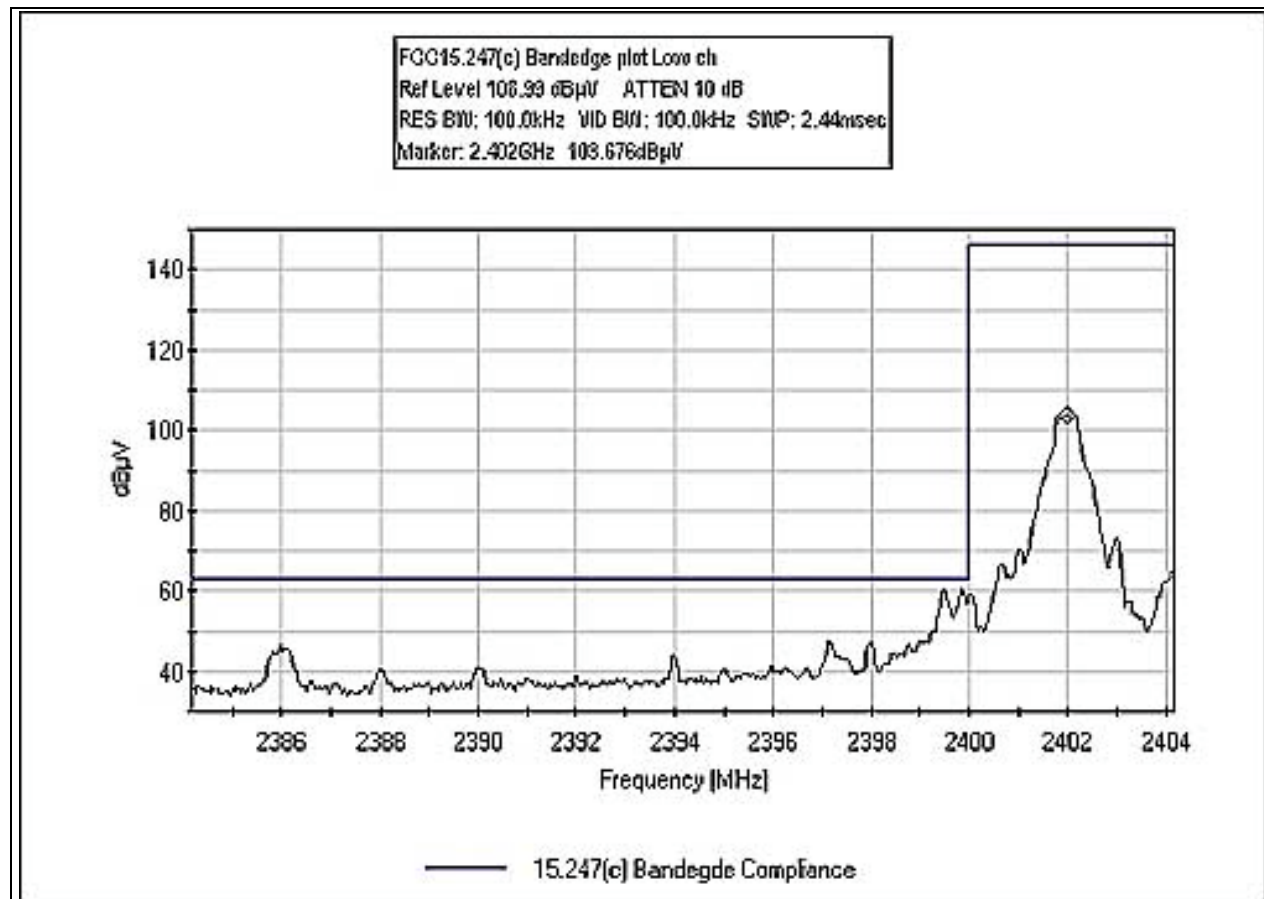
Gain =  $20 \cdot \log(f \text{ MHz}) - 29.77$  - (transducer factor in dB)

Sig Gen reading + Gain of the substitution antenna (dBi) = EIRP Power in watts

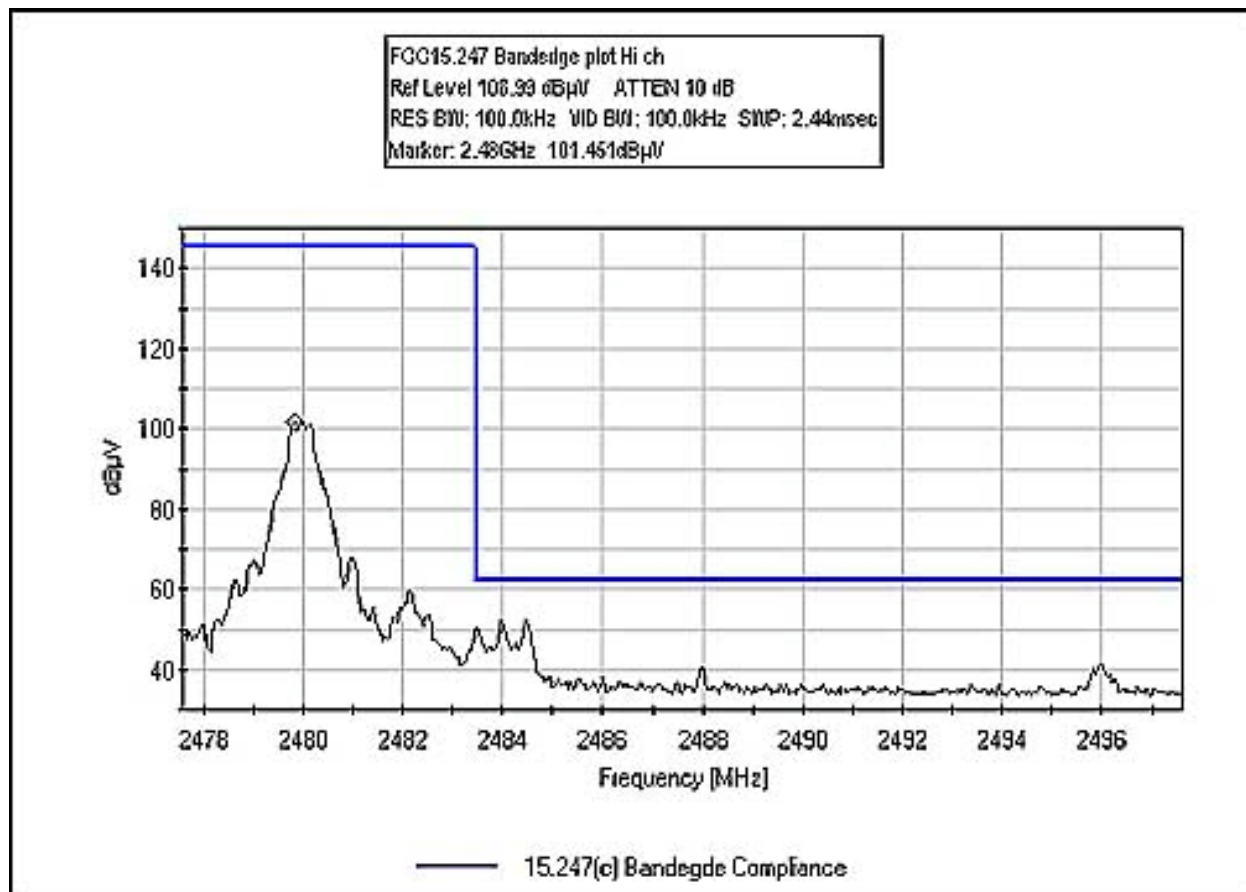
### RX

| Freq     | EIRP(dBm) | EIRP (W) |
|----------|-----------|----------|
| 2402 MHz | 1.0       | 0.0013   |
| 2441 MHz | 2.6       | 0.0018   |
| 2480 MHz | 0.7       | 0.0012   |

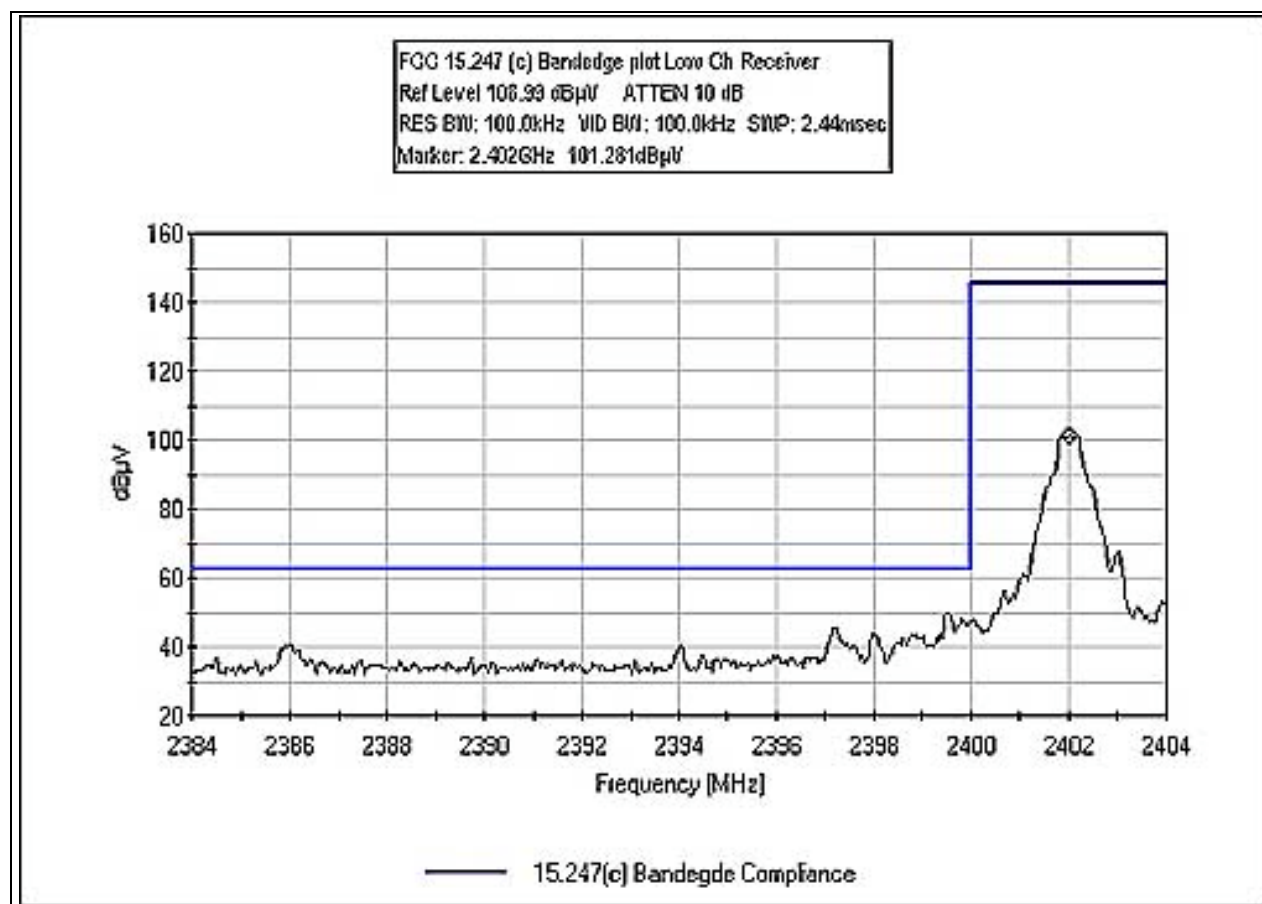
# FCC 15.247(c) BANDEDGE PLOT LOW CHANNEL



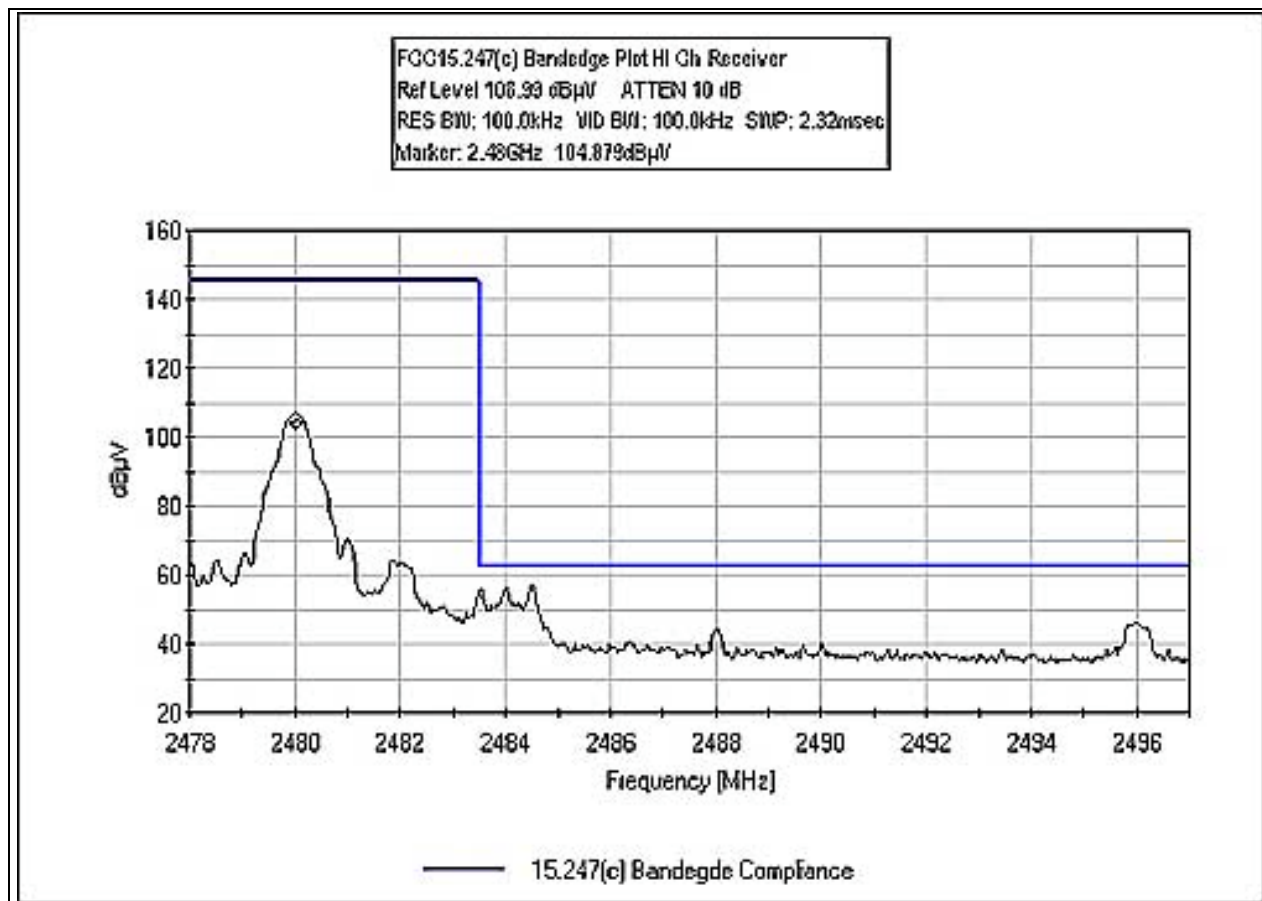
FCC 15.247(c) BANDEDGE PLOT HIGH CHANNEL



## FCC 15.247(c) BANDEDGE PLOT LOW CHANNEL RECEIVER



## FCC 15.247(c) BANDEGE PLOT HIGH CHANNEL RECEIVER



**Table 4: FCC 15.247(d) Six Highest Radiated Emission Levels: F8Z901-TX**

| FREQUENCY<br>MHz | METER<br>READING<br>dB $\mu$ V | CORRECTION FACTORS |           |             |            |              | CORRECTED<br>READING<br>dB $\mu$ V/m | SPEC<br>LIMIT<br>dB $\mu$ V/m | MARGIN<br>dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------|--------------------------------------|-------------------------------|--------------|-------|
|                  |                                | Ant<br>dB          | Amp<br>dB | Cable<br>dB | Corr<br>dB | Filter<br>dB |                                      |                               |              |       |
| 1601.930         | 64.1                           | 24.8               | -38.4     | 3.3         | -20.8      | 0.4          | 33.4                                 | 54.0                          | -20.6        | H-1   |
| 1602.000         | 71.2                           | 24.8               | -38.4     | 3.3         | -20.8      | 0.4          | 40.5                                 | 54.0                          | -13.5        | V-1   |
| 4882.000         | 46.4                           | 31.9               | -37.9     | 5.7         | 0.0        | 0.6          | 46.7                                 | 54.0                          | -7.3         | H-2   |
| 4882.000         | 35.6                           | 31.9               | -37.9     | 5.7         | 0.0        | 0.6          | 35.9                                 | 54.0                          | -18.1        | VA-2  |
| 4959.650         | 33.9                           | 32.0               | -37.8     | 5.8         | 0.0        | 0.6          | 34.5                                 | 54.0                          | -19.5        | HA-3  |
| 4960.000         | 36.1                           | 32.0               | -37.8     | 5.8         | 0.0        | 0.6          | 36.7                                 | 54.0                          | -17.3        | VA-3  |

Test Method: ANSI C63.4 (2003)/FCC-MP5  
Spec Limit: FCC Part 15 Subpart C Section 15.247(d)  
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
V = Vertical Polarization  
A = Average Reading  
1 = 2402 MHz  
2 = 2441 MHz  
3 = 2480 MHz

COMMENTS: The EUT strapped on a support Ipad MP3 Player is placed on the wooden table. The support laptop is connected to the programming port of the transmitter via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2402 MHz, 2441 MHz and 2480 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Table 5: FCC 15.247(d) Six Highest Radiated Emission Levels: F8Z901-RX**

| FREQUENCY<br>MHz | METER<br>READING<br>dBμV | CORRECTION FACTORS |           |             |            |              | CORRECTED<br>READING<br>dBμV/m | SPEC<br>LIMIT<br>dBμV/m | MARGIN<br>dB | NOTES |
|------------------|--------------------------|--------------------|-----------|-------------|------------|--------------|--------------------------------|-------------------------|--------------|-------|
|                  |                          | Ant<br>dB          | Amp<br>dB | Cable<br>dB | Corr<br>dB | Filter<br>dB |                                |                         |              |       |
| 1601.292         | 67.7                     | 4.8                | -38.4     | 3.3         | -20.8      | 0.4          | 37.0                           | 54.0                    | -17.0        | H-1   |
| 1601.355         | 65.2                     | 4.8                | -38.4     | 3.3         | -20.8      | 0.4          | 34.5                           | 54.0                    | -19.5        | V-1   |
| 1627.500         | 63.1                     | 25.6               | -38.7     | 3.3         | 0.0        | 0.4          | 52.9                           | 80.0                    | -27.1        | H-2   |
| 1627.500         | 62.8                     | 25.6               | -38.7     | 3.3         | 0.0        | 0.4          | 52.6                           | 80.0                    | -27.4        | V-2   |
| 1653.330         | 64.3                     | 25.7               | -39.0     | 3.3         | 0.0        | 0.4          | 53.9                           | 80.0                    | -26.1        | H-3   |
| 1653.330         | 63.0                     | 25.7               | -39.0     | 3.3         | 0.0        | 0.4          | 52.6                           | 80.0                    | -27.4        | V-3   |

Test Method: ANSI C63.4 (2003)/FCC-MP5  
Spec Limit: FCC Part 15 Subpart C Section 15.247(d)  
Test Distance: 3 Meters

NOTES: H = Horizontal Polarization  
V = Vertical Polarization  
1 = 2402 MHz  
2 = 2441 MHz  
3 = 2480 MHz

COMMENTS: The EUT is placed on the wooden table. The support laptop is connected to the programming port of the EUT via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2402 MHz, 2441 MHz and 2480 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

## TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.

The relative humidity was between 20% and 75%.

## EUT SETUP

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

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

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

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

## CORRECTION FACTORS

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

| TABLE A: SAMPLE CALCULATIONS |                     |                |
|------------------------------|---------------------|----------------|
|                              | Meter reading       | (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 in Table A were used to collect both the radiated and conducted emissions data for the EUT. For radiated measurements from 9 kHz to 30 MHz, the magnetic loop antenna was used. For radiated measurements from 30 to 1000 MHz, the biconilog antenna was used. The horn antenna was used for frequencies above 1000 MHz. Conducted emissions tests required the use of the FCC type LISNs.

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

## **SPECTRUM ANALYZER DETECTOR FUNCTIONS**

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

### **Peak**

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

### **Quasi-Peak**

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

### **Average**

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

## **EUT TESTING**

### **Mains Conducted Emissions**

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

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

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

### **Antenna Conducted Emissions**

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

### **Radiated Emissions**

The EUT was mounted on a nonconductive, rotating table 80 cm above the conductive grid. The nonconductive table dimensions were 1 meter by 1.5 meters.

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

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

**APPENDIX A**

**TEST SETUP PHOTOGRAPHS**

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions - Front View - F8Z901-TX

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



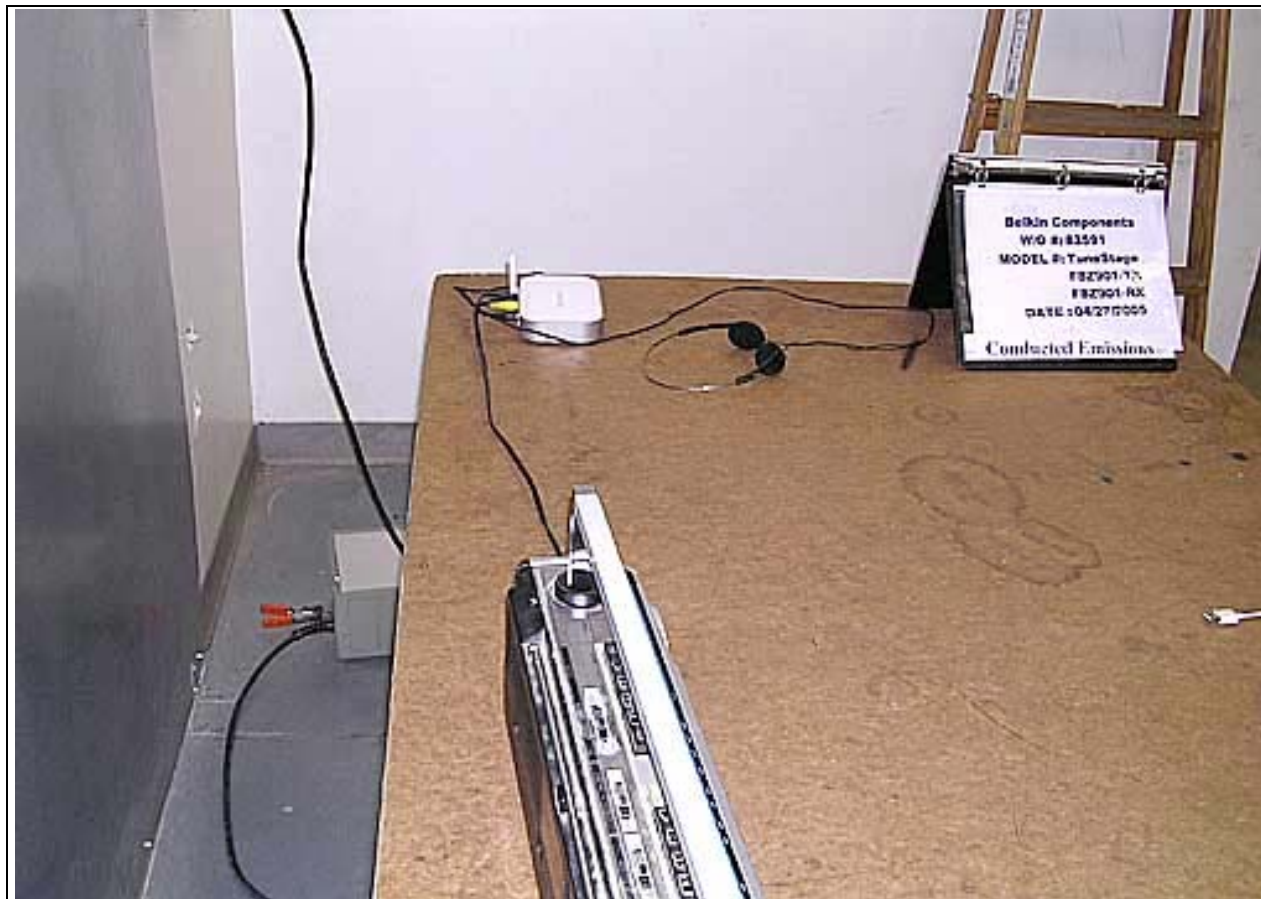
Mains Conducted Emissions - Side View - F8Z901-TX

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



Mains Conducted Emissions - Front View - F8Z901-RX

**PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS**



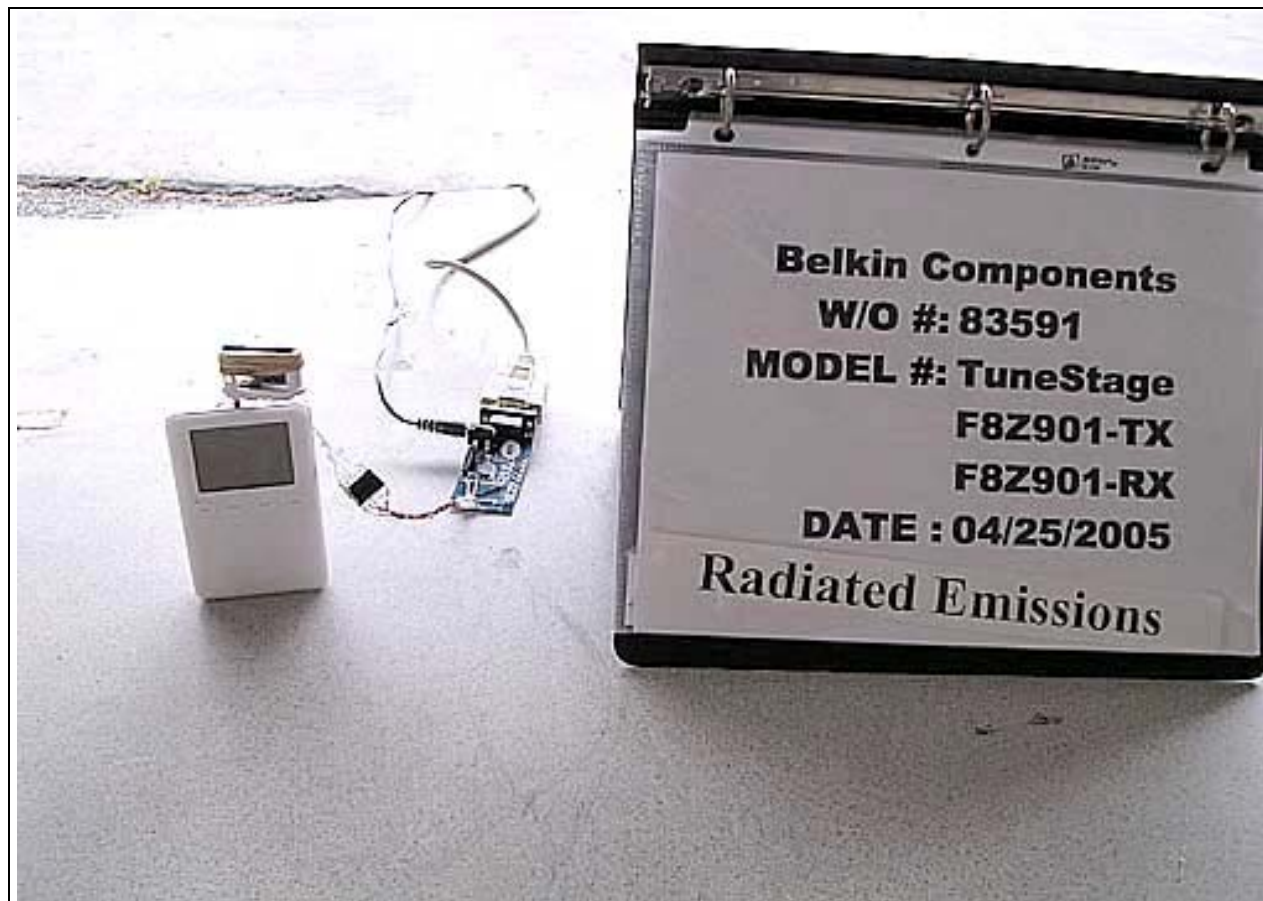
Mains Conducted Emissions - Side View - F8Z901-RX

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



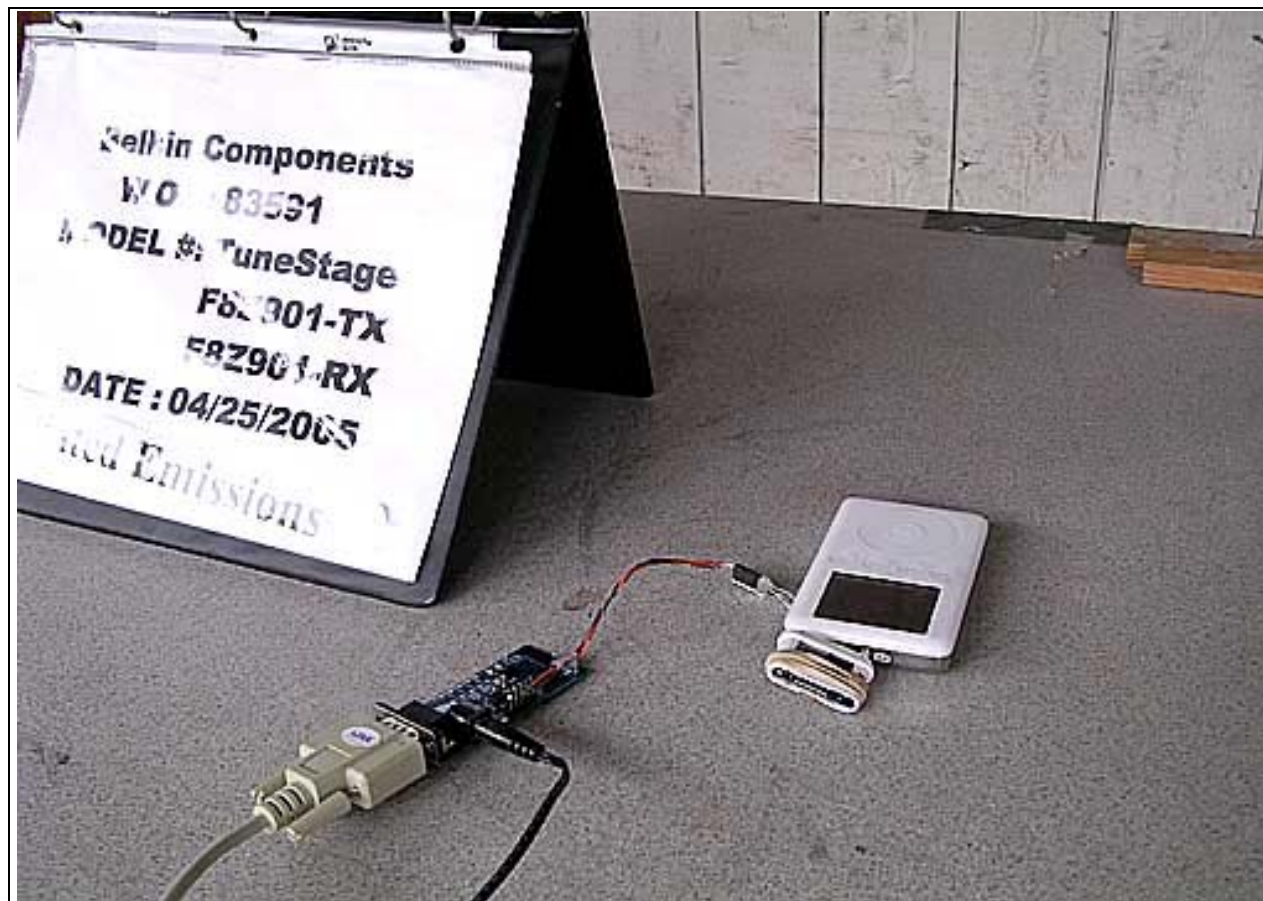
Radiated Emissions - Front View - Loop Antenna

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



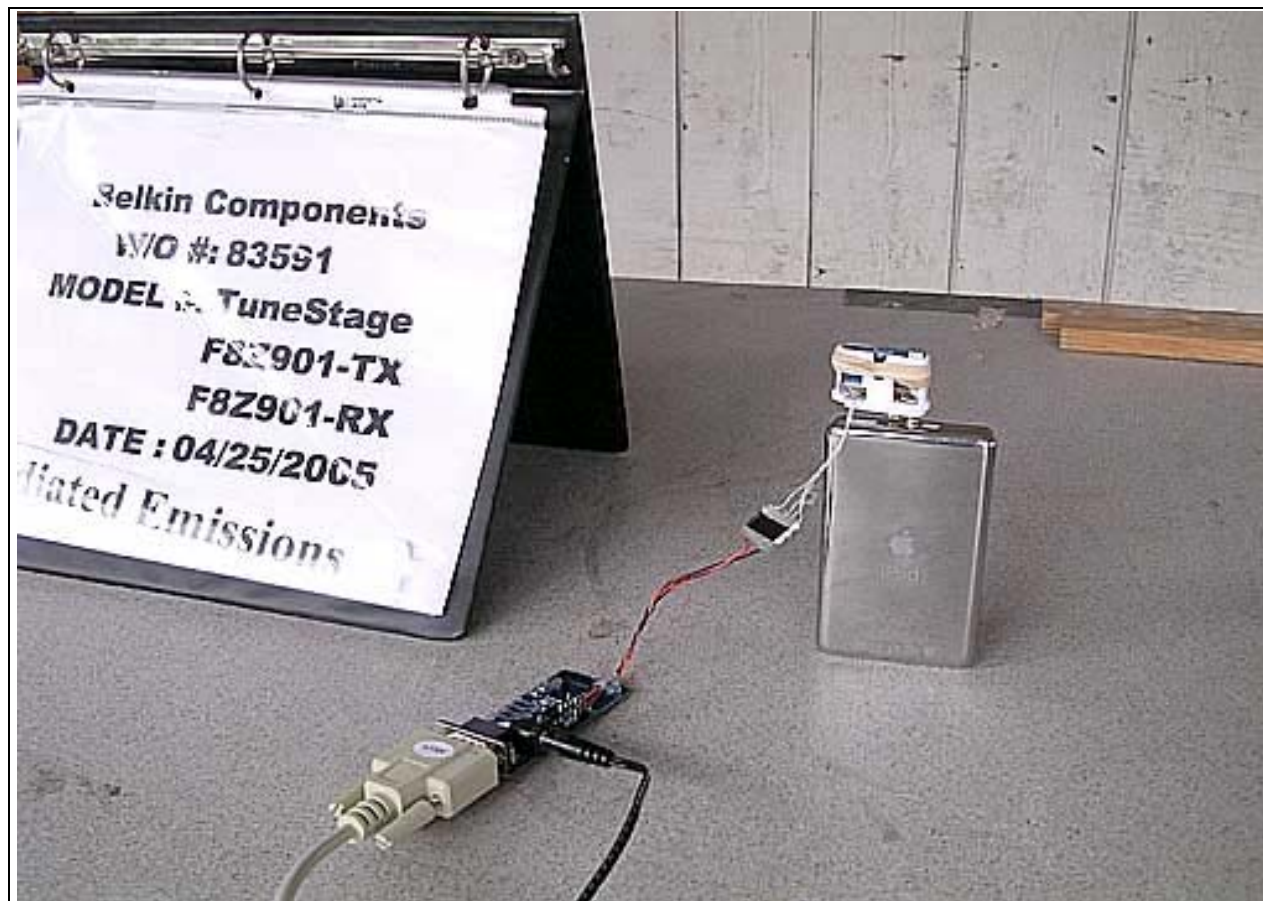
Radiated Emissions - Front View

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



Radiated Emissions - Front View - Horn Antenna

**PHOTOGRAPH SHOWING RADIATED EMISSIONS**



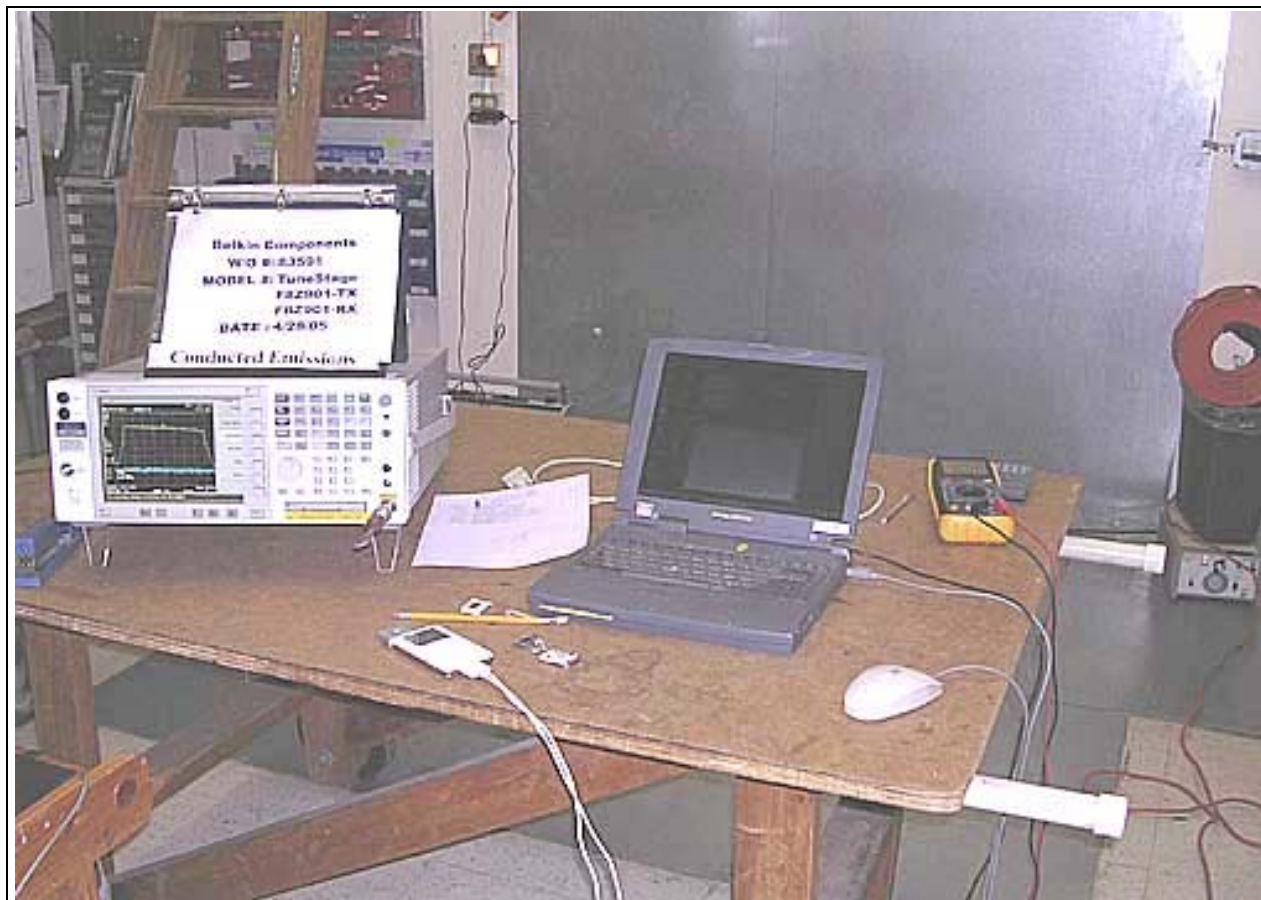
Radiated Emissions - Back View

**PHOTOGRAPH SHOWING RF POWER OUTPUT AND VOLTAGE VARIATION**



RF Power Output and Voltage Variation

**PHOTOGRAPH SHOWING OCCUPIED BANDWIDTH, CARRIER FREQUENCY  
SEPARATION, AVERAGE TIME OF OCCUPANCY AND NUMBER OF HOPPING  
FREQUENCY**



Occupied Bandwidth, Carrier Frequency Separation, Average Time of Occupancy and Number  
of Hopping Frequency

## APPENDIX B

### TEST EQUIPMENT LIST

#### FCC 15.247(d) Radiated Spurious emission

| Equipment                         | Asset # | Manufacturer       | Model #     | Serial #      | Cal Date | Cal Due |
|-----------------------------------|---------|--------------------|-------------|---------------|----------|---------|
| Spectrum Analyzer RF Section      | 02462   | HP                 | 8568B       | 2928A04874    | 100804   | 100806  |
| Spectrum Analyzer Display Section | 02472   | HP                 | 85662A      | 3001A18430    | 100804   | 100806  |
| QP Adapter                        | 01437   | HP                 | 85650A      | 3303A01884    | 100804   | 100806  |
| Spectrum Analyzer                 | 02672   | Agilent            | E4446A      | US44300438    | 011405   | 011407  |
| 30 – 1000MHz                      |         |                    |             |               |          |         |
| Biconilog Antenna                 | 01995   | Chase              | CBL6111C    | 2451          | 040804   | 040806  |
| Pre-amp                           | 00309   | HP                 | 8447D       | 1937A02548    | 071404   | 071406  |
| Antenna cable                     | NA      | NA                 | RG214       | Cable#15      | 010305   | 010306  |
| Pre-amp to SA cable               | NA      | Pasternack         | RG223/U     | Cable#10      | 051304   | 051305  |
| 1 - 18 GHz                        |         |                    |             |               |          |         |
| Horn Antenna                      | 0849    | EMCO               | 3115        | 6246          | 072204   | 072206  |
| Microwave Pre-amp                 | 00786   | HP                 | 83017A      | 3123A00281    | 081204   | 081206  |
| Helix Antenna cable               | NA      | Andrew             | LDF1-50     | Cable#20      | 091604   | 091605  |
| 2.4 GHz HPF                       | 01440   | K&L                | 91H31-3000  | 001           | 042505   | 042507* |
| 2.5 GHz LPF                       | 01439   | K&L                | 10L121-2200 | 001           | 042505   | 042507* |
| 24" SMA Cable                     | 2604    | Argosy             | UFA147A     | 0-0360-200200 | 012304   | 012306  |
| 9kHz- 30 MHz                      |         |                    |             |               |          |         |
| Loop Antenna                      | 00314   | EMCO               | 6502        | 2014          | 062804   | 062806  |
| 18-25 GHz                         |         |                    |             |               |          |         |
| Horn Antenna                      | 00770   | Scientific Atlanta | 12-18       | 22            | 070703   | 070705  |

\*Actual date of testing was 4/27/05 through 4/29/05.

#### FCC 15.31 Voltage Variation

| Equipment                 | Asset #         | Manufacturer  | Model #           | Serial #   | Cal Date | Cal Due |
|---------------------------|-----------------|---------------|-------------------|------------|----------|---------|
| Spectrum Analyzer         | 02672           | Agilent       | E4446A            | US44300438 | 011405   | 011407  |
| Programmable Power Source | 01695/<br>01696 | Pacific Power | 345AMX /<br>UPC32 | 250 / 245  | 052203   | 052205  |

#### RF Output Power

| Equipment             | Asset # | Manufacturer | Model # | Serial #   | Cal Date | Cal Due |
|-----------------------|---------|--------------|---------|------------|----------|---------|
| Spectrum Analyzer     | 02672   | Agilent      | E4446A  | US44300438 | 011405   | 011407  |
| RF Power meter        | 02082   | HP           | 435B    | 2445A11881 | 061704   | 061706  |
| Power Sensor          | 02036   | HP           | 8482A   | 1551A01004 | 061806   | 061806  |
| Signal Generator      | 02551   | HP           | 8673M   | 2534A00477 | 051903   | 051905  |
| Horn Antenna          | 0849    | EMCO         | 3115    | 6246       | 072204   | 072206  |
| Microwave Pre-amp     | 00786   | HP           | 83017A  | 3123A00281 | 081204   | 081206  |
| Heliast Antenna cable | NA      | Andrew       | LDF1-50 | Cable#20   | 091604   | 091605  |

Bandedge,  
OBW,  
RSS210 99% BW plot.  
Carrier Freq separation  
Average time of occupancy  
Number of hopping frequency

| Equipment             | Asset # | Manufacturer | Model # | Serial #   | Cal Date | Cal Due |
|-----------------------|---------|--------------|---------|------------|----------|---------|
| Horn Antenna          | 0849    | EMCO         | 3115    | 6246       | 072204   | 072206  |
| Microwave Pre-amp     | 00786   | HP           | 83017A  | 3123A00281 | 081204   | 081206  |
| Heliast Antenna cable | NA      | Andrew       | LDF1-50 | Cable#20   | 091604   | 091605  |
| Spectrum Analyzer     | 02672   | Agilent      | E4446A  | US44300438 | 011405   | 011407  |

#### Conducted Emissions

| Equipment                         | Asset #             | Manufacturer | Model #            | Serial #   | Cal Date | Cal Due |
|-----------------------------------|---------------------|--------------|--------------------|------------|----------|---------|
| Spectrum Analyzer RF Section      | 02462               | HP           | 8568B              | 2928A04874 | 100804   | 100806  |
| Spectrum Analyzer Display Section | 02472               | HP           | 85662A             | 3001A18430 | 100804   | 100806  |
| QP Adapter                        | 01437               | HP           | 85650A             | 3303A01884 | 100804   | 100806  |
| Conducted Cable                   | NA                  | Harbour Ind  | RG142              | Cable # 21 | 070204   | 070205  |
| 150kHz HPF                        | 02610               | TTE          | HB9615-150k-50-720 | 07766      | 041606   | 041606  |
| LISN                              | 00847               | EMCO         | 3816/2NM           | 1104       | 120804   | 120806  |
| LISN                              | 00276, 00277, 00278 | Solar        | 8028-50-TS-24BNC   | B2         | 101403   | 101405  |

**APPENDIX C**  
**MEASUREMENT DATA SHEETS**

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.207 Class B COND [AVE]**  
 Work Order #: **83591**  
 Test Type: **Conducted Emissions**  
 Equipment: **Bluetooth Transmitter**  
 Manufacturer: Belkin Corporation  
 Model: F8Z901-TX  
 S/N: NA

Date: 04/27/2005  
 Time: 4:07:28 PM  
 Sequence#: 21  
 Tested By: E. Wong  
 110V 60Hz

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

| Function               | Manufacturer | Model #   | S/N |
|------------------------|--------------|-----------|-----|
| Bluetooth Transmitter* | Belkin       | F8Z901-TX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT is connected to an earphone port of a support Ipod MP3 Player that is placed on the wooden table. The EUT transmits digitized audio signal to the receiver. EUT Frequency: 2402-2480 MHz. Frequency tested: 150 kHz – 30 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                      |                                            |
|--------------------------------------|--------------------------------------------|
| T1=Cable #21 Conducted Site A 070205 | T2=(L1) Insertion Loss 00847 EMCO 3816/2NM |
| T3=150kHz HPF 041605                 |                                            |

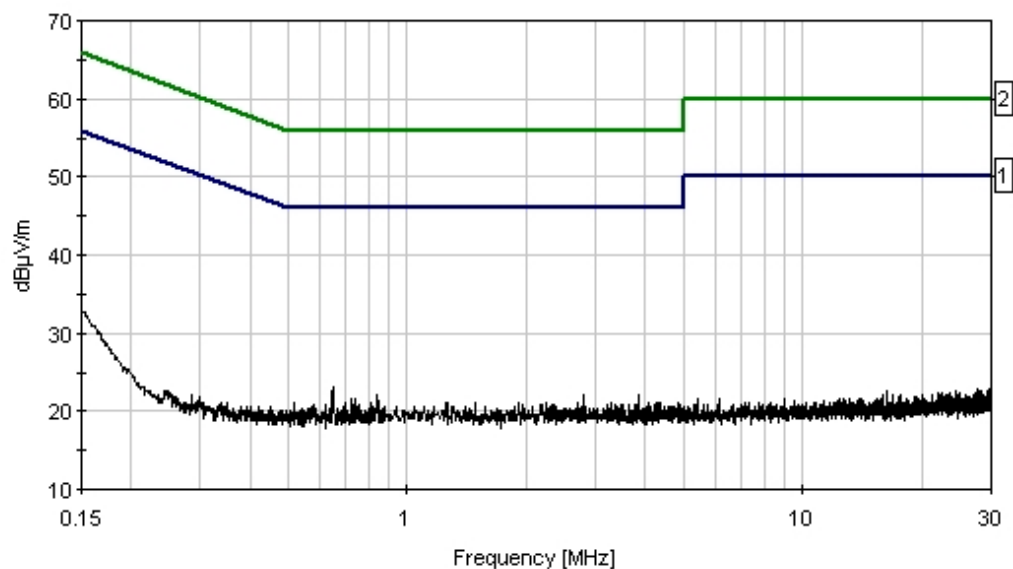
**Measurement Data:** Reading listed by margin.

Test Lead: Black

| # | Freq<br>MHz | Rdng<br>dBμV | T1<br>dB | T2<br>dB | T3<br>dB | dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------|----------|----------|----------|----|---------------|----------------|----------------|--------------|--------------|
| 1 | 150.000k    | 29.8         | +0.0     | +0.1     | +3.1     |    | +0.0          | 33.0           | 56.0           | -23.0        | Black        |
| 2 | 648.859k    | 22.8         | +0.1     | +0.0     | +0.1     |    | +0.0          | 23.0           | 46.0           | -23.0        | Black        |
| 3 | 842.294k    | 21.8         | +0.1     | +0.1     | +0.2     |    | +0.0          | 22.2           | 46.0           | -23.8        | Black        |
| 4 | 2.791M      | 21.6         | +0.2     | +0.1     | +0.1     |    | +0.0          | 22.0           | 46.0           | -24.0        | Black        |
| 5 | 3.833M      | 21.6         | +0.2     | +0.1     | +0.1     |    | +0.0          | 22.0           | 46.0           | -24.0        | Black        |
| 6 | 723.761k    | 21.4         | +0.1     | +0.0     | +0.2     |    | +0.0          | 21.7           | 46.0           | -24.3        | Black        |
| 7 | 741.941k    | 21.4         | +0.1     | +0.0     | +0.2     |    | +0.0          | 21.7           | 46.0           | -24.3        | Black        |
| 8 | 701.218k    | 21.0         | +0.1     | +0.0     | +0.1     |    | +0.0          | 21.2           | 46.0           | -24.8        | Black        |
| 9 | 1.256M      | 20.9         | +0.1     | +0.0     | +0.2     |    | +0.0          | 21.2           | 46.0           | -24.8        | Black        |

|    |        |      |      |      |      |      |      |      |       |       |
|----|--------|------|------|------|------|------|------|------|-------|-------|
| 10 | 2.251M | 20.8 | +0.2 | +0.1 | +0.1 | +0.0 | 21.2 | 46.0 | -24.8 | Black |
| 11 | 4.058M | 20.8 | +0.2 | +0.1 | +0.1 | +0.0 | 21.2 | 46.0 | -24.8 | Black |
| 12 | 1.481M | 20.9 | +0.1 | +0.0 | +0.1 | +0.0 | 21.1 | 46.0 | -24.9 | Black |
| 13 | 1.910M | 20.9 | +0.1 | +0.0 | +0.1 | +0.0 | 21.1 | 46.0 | -24.9 | Black |
| 14 | 4.343M | 20.6 | +0.2 | +0.1 | +0.1 | +0.0 | 21.0 | 46.0 | -25.0 | Black |
| 15 | 4.849M | 20.6 | +0.2 | +0.1 | +0.1 | +0.0 | 21.0 | 46.0 | -25.0 | Black |

CKC Laboratories, Inc. Date: 04/27/2005 Time: 4:07:28 PM Belkin Corporation WWO#: 83591  
FCC 15.207 Class B COND [AVE] Test Lead: Black 110V 60Hz Sequence#: 21



— Sweep Data  
— 1 - FCC 15.207 Class B COND [AVE]  
— 2 - FCC 15.207 Class B COND [QP]

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.207 Class B COND [AVE]**  
 Work Order #: **83591**  
 Test Type: **Conducted Emissions**  
 Equipment: **Bluetooth Transmitter**  
 Manufacturer: Belkin Corporation  
 Model: F8Z901-TX,  
 S/N: NA

Date: 04/27/2005  
 Time: 4:10:36 PM  
 Sequence#: 22  
 Tested By: E. Wong  
 110V 60Hz

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

| Function               | Manufacturer | Model #   | S/N |
|------------------------|--------------|-----------|-----|
| Bluetooth Transmitter* | Belkin       | F8Z901-TX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT is connected to an earphone port of a support Ipod MP3 Player that is placed on the wooden table. The EUT transmits digitized audio signal to the receiver. EUT Frequency: 2402-2480 MHz. Frequency tested: 150 kHz – 30 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                      |                                            |
|--------------------------------------|--------------------------------------------|
| T1=Cable #21 Conducted Site A 070205 | T2=(L1) Insertion Loss 00847 EMCO 3816/2NM |
| T3=150kHz HPF 041605                 |                                            |

**Measurement Data:**

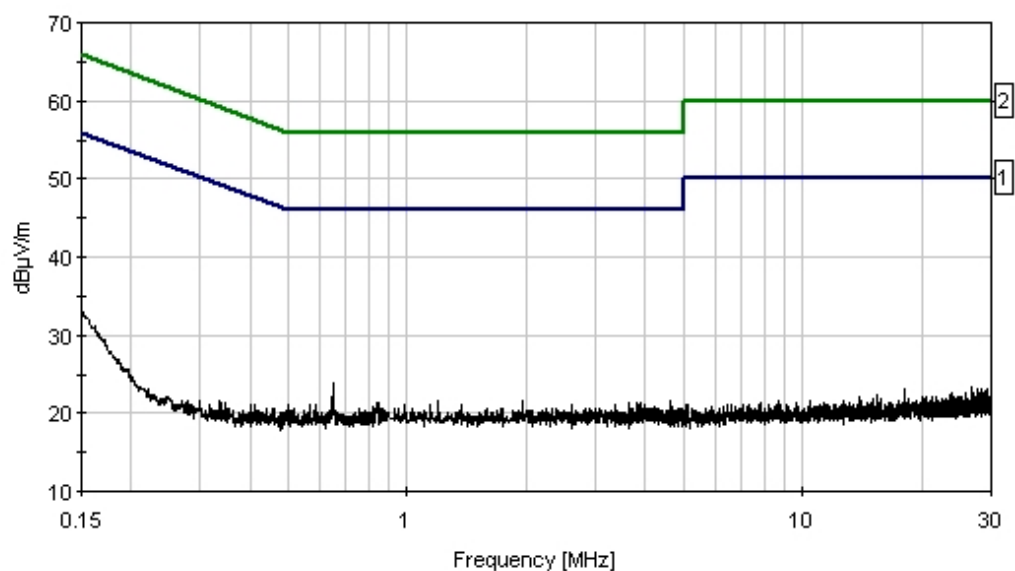
Reading listed by margin.

Test Lead: White

| #  | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Table | Corr<br>dB $\mu$ V/m | Spec<br>dB $\mu$ V/m | Margin<br>dB | Polar<br>Ant |
|----|-------------|--------------------|----------|----------|----------|------------|-------|----------------------|----------------------|--------------|--------------|
| 1  | 651.768k    | 23.6               | +0.1     | +0.0     | +0.1     | +0.0       | +0.0  | 23.8                 | 46.0                 | -22.2        | White        |
| 2  | 150.727k    | 29.9               | +0.0     | +0.1     | +3.1     | +0.0       | +0.0  | 33.1                 | 56.0                 | -22.9        | White        |
| 3  | 1.200M      | 21.4               | +0.1     | +0.0     | +0.2     | +0.0       | +0.0  | 21.7                 | 46.0                 | -24.3        | White        |
| 4  | 4.641M      | 21.3               | +0.2     | +0.1     | +0.1     | +0.0       | +0.0  | 21.7                 | 46.0                 | -24.3        | White        |
| 5  | 1.957M      | 21.3               | +0.1     | +0.0     | +0.1     | +0.0       | +0.0  | 21.5                 | 46.0                 | -24.5        | White        |
| 6  | 843.022k    | 21.0               | +0.1     | +0.1     | +0.2     | +0.0       | +0.0  | 21.4                 | 46.0                 | -24.6        | White        |
| 7  | 3.637M      | 21.0               | +0.2     | +0.1     | +0.1     | +0.0       | +0.0  | 21.4                 | 46.0                 | -24.6        | White        |
| 8  | 3.812M      | 21.0               | +0.2     | +0.1     | +0.1     | +0.0       | +0.0  | 21.4                 | 46.0                 | -24.6        | White        |
| 9  | 3.901M      | 20.9               | +0.2     | +0.1     | +0.1     | +0.0       | +0.0  | 21.3                 | 46.0                 | -24.7        | White        |
| 10 | 499.783k    | 21.1               | +0.0     | +0.0     | +0.1     | +0.0       | +0.0  | 21.2                 | 46.0                 | -24.8        | White        |

|    |          |      |      |      |      |      |      |      |       |       |
|----|----------|------|------|------|------|------|------|------|-------|-------|
| 11 | 588.502k | 21.0 | +0.1 | +0.0 | +0.1 | +0.0 | 21.2 | 46.0 | -24.8 | White |
| 12 | 2.595M   | 20.8 | +0.2 | +0.1 | +0.1 | +0.0 | 21.2 | 46.0 | -24.8 | White |
| 13 | 987.578k | 20.8 | +0.1 | +0.0 | +0.2 | +0.0 | 21.1 | 46.0 | -24.9 | White |
| 14 | 1.141M   | 20.8 | +0.1 | +0.0 | +0.2 | +0.0 | 21.1 | 46.0 | -24.9 | White |
| 15 | 3.858M   | 20.6 | +0.2 | +0.1 | +0.1 | +0.0 | 21.0 | 46.0 | -25.0 | White |

CKC Laboratories, Inc. Date: 04/27/2005 Time: 4:10:36 PM Belkin Corporation WO#: 83591  
FCC 15.207 Class B COND [AVE] Test Lead: White 110V 60Hz Sequence#: 22



— Sweep Data  
— 1 - FCC 15.207 Class B COND [AVE]  
— 2 - FCC 15.207 Class B COND [QP]

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.207 Class B COND [AVE]**  
 Work Order #: **83591**  
 Test Type: **Conducted Emissions**  
 Equipment: **Bluetooth Transmitter**  
 Manufacturer: Belkin Corporation  
 Model: F8Z901-RX  
 S/N: NA

Date: 04/27/2005  
 Time: 16:50:48  
 Sequence#: 28  
 Tested By: E. Wong  
 110V 60Hz

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

| Function           | Manufacturer | Model #   | S/N |
|--------------------|--------------|-----------|-----|
| Bluetooth Receiver | Belkin       | F8Z901-RX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT is placed on the wooden table. RCA ports are connected to support audio system; earphone port is connected to a pair of earphone. The EUT receives digitized audio signal from a remote transmitter and converts to audio signal. EUT Frequency: 2402-2480 MHz. Frequency tested: 150 kHz – 30 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                      |                                            |
|--------------------------------------|--------------------------------------------|
| T1=Cable #21 Conducted Site A 070205 | T2=(L1) Insertion Loss 00847 EMCO 3816/2NM |
| T3=150kHz HPF 041605                 |                                            |

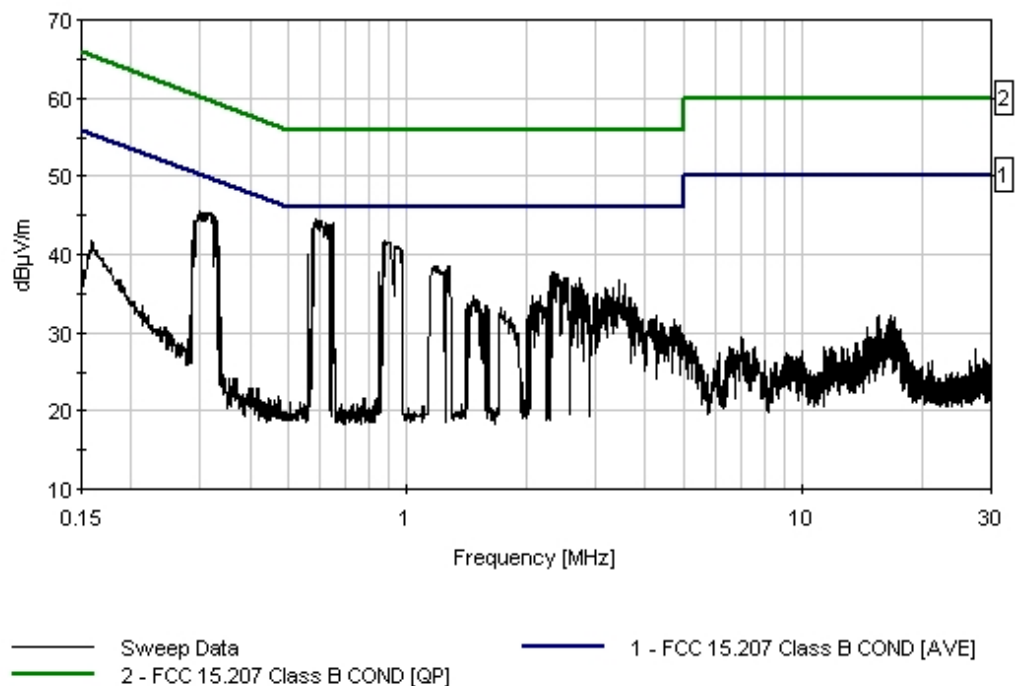
**Measurement Data:** Reading listed by margin.

Test Lead: Black

| # | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Table | Corr<br>dB $\mu$ V/m | Spec<br>dB $\mu$ V/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------------|----------|----------|----------|------------|-------|----------------------|----------------------|--------------|--------------|
| 1 | 652.495k    | 43.8               | +0.1     | +0.0     | +0.1     | +0.0       |       | 44.0                 | 46.0                 | -2.0         | Black        |
| 2 | 643.042k    | 43.5               | +0.1     | +0.0     | +0.1     | +0.0       |       | 43.7                 | 46.0                 | -2.3         | Black        |
| 3 | 647.405k    | 43.5               | +0.1     | +0.0     | +0.1     | +0.0       |       | 43.7                 | 46.0                 | -2.3         | Black        |
| 4 | 641.587k    | 43.4               | +0.1     | +0.0     | +0.1     | +0.0       |       | 43.6                 | 46.0                 | -2.4         | Black        |
| 5 | 576.139k    | 43.0               | +0.1     | +0.0     | +0.1     | +0.0       |       | 43.2                 | 46.0                 | -2.8         | Black        |
| 6 | 650.314k    | 42.9               | +0.1     | +0.0     | +0.1     | +0.0       |       | 43.1                 | 46.0                 | -2.9         | Black        |
| 7 | 876.473k    | 41.3               | +0.1     | +0.1     | +0.2     | +0.0       |       | 41.7                 | 46.0                 | -4.3         | Black        |
| 8 | 889.759k    | 41.2               | +0.1     | +0.1     | +0.2     | +0.0       |       | 41.6                 | 46.0                 | -4.4         | Black        |
| 9 | 315.074k    | 45.0               | +0.0     | +0.1     | +0.2     | +0.0       |       | 45.3                 | 49.8                 | -4.5         | Black        |

|     |          |      |      |      |      |      |      |      |       |       |
|-----|----------|------|------|------|------|------|------|------|-------|-------|
| 10  | 572.503k | 41.3 | +0.1 | +0.0 | +0.1 | +0.0 | 41.5 | 46.0 | -4.5  | Black |
| 11  | 868.474k | 41.0 | +0.1 | +0.1 | +0.2 | +0.0 | 41.4 | 46.0 | -4.6  | Black |
| 12  | 870.655k | 40.9 | +0.1 | +0.1 | +0.2 | +0.0 | 41.3 | 46.0 | -4.7  | Black |
| 13  | 325.255k | 44.6 | +0.0 | +0.1 | +0.1 | +0.0 | 44.8 | 49.6 | -4.8  | Black |
| 14  | 932.289k | 40.7 | +0.1 | +0.1 | +0.2 | +0.0 | 41.1 | 46.0 | -4.9  | Black |
| 15  | 586.000k | 15.7 | +0.1 | +0.0 | +0.1 | +0.0 | 15.9 | 46.0 | -30.1 | Black |
| Ave |          |      |      |      |      |      |      |      |       |       |
| ^   | 586.320k | 44.3 | +0.1 | +0.0 | +0.1 | +0.0 | 44.5 | 46.0 | -1.5  | Black |

CKC Laboratories, Inc. Date: 04/27/2005 Time: 16:50:48 Belkin Corporation WVO#: 83591  
FCC 15.207 Class B COND [AVE] Test Lead: Black 110V 60Hz Sequence#: 28



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.207 Class B COND [AVE]**  
 Work Order #: **83591**  
 Test Type: **Conducted Emissions**  
 Equipment: **Bluetooth Transmitter**  
 Manufacturer: Belkin Corporation  
 Model: F8Z901-RX  
 S/N: NA

Date: 04/27/2005  
 Time: 16:46:34  
 Sequence#: 27  
 Tested By: E. Wong  
 110V 60Hz

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

| Function           | Manufacturer | Model #   | S/N |
|--------------------|--------------|-----------|-----|
| Bluetooth Receiver | Belkin       | F8Z901-RX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT is placed on the wooden table. RCA ports are connected to support audio system; earphone port is connected to a pair of earphones. The EUT receives digitized audio signal from a remote transmitter and converts to audio signal. EUT Frequency: 2402-2480 MHz. Frequency tested: 150 kHz – 30 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                      |                                            |
|--------------------------------------|--------------------------------------------|
| T1=Cable #21 Conducted Site A 070205 | T2=(L1) Insertion Loss 00847 EMCO 3816/2NM |
| T3=150kHz HPF 041605                 |                                            |

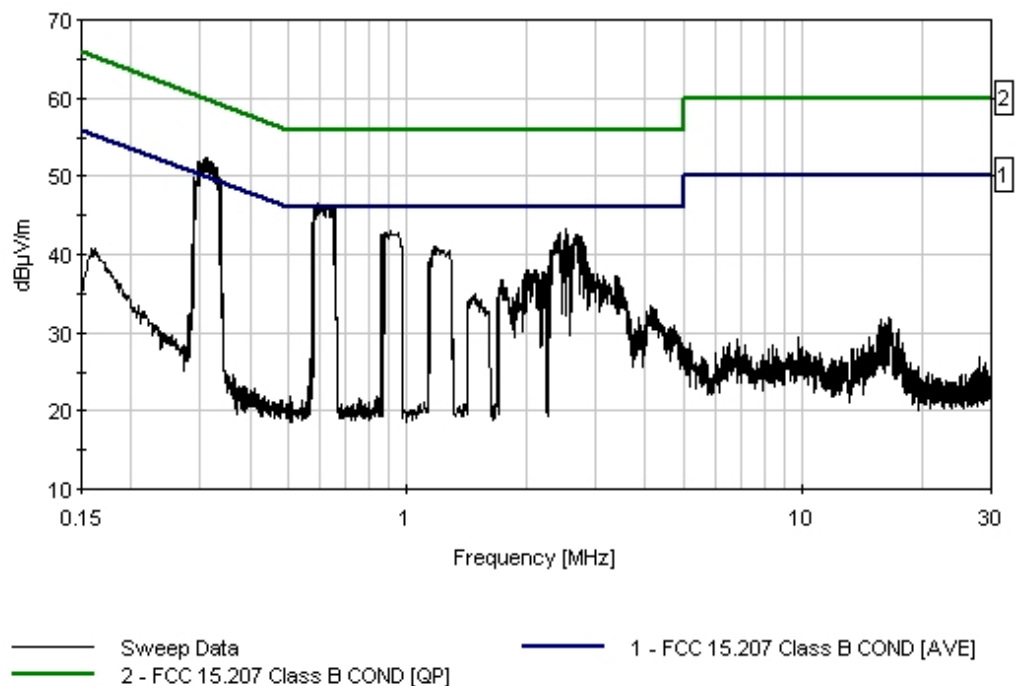
**Measurement Data:** Reading listed by margin.

Test Lead: White

| # | Freq<br>MHz | Rdng<br>dB $\mu$ V | T1<br>dB | T2<br>dB | T3<br>dB | Dist<br>dB | Table | Corr<br>dB $\mu$ V/m | Spec<br>dB $\mu$ V/m | Margin<br>dB | Polar<br>Ant |
|---|-------------|--------------------|----------|----------|----------|------------|-------|----------------------|----------------------|--------------|--------------|
| 1 | 289.622k    | 49.5               | +0.0     | +0.1     | +0.2     | +0.0       |       | 49.8                 | 50.5                 | -0.7         | White        |
| 2 | 579.048k    | 44.2               | +0.1     | +0.0     | +0.1     | +0.0       |       | 44.4                 | 46.0                 | -1.6         | White        |
| 3 | 574.685k    | 43.8               | +0.1     | +0.0     | +0.1     | +0.0       |       | 44.0                 | 46.0                 | -2.0         | White        |
| 4 | 580.502k    | 43.8               | +0.1     | +0.0     | +0.1     | +0.0       |       | 44.0                 | 46.0                 | -2.0         | White        |
| 5 | 2.527M      | 42.8               | +0.2     | +0.1     | +0.1     | +0.0       |       | 43.2                 | 46.0                 | -2.8         | White        |
| 6 | 911.024k    | 42.6               | +0.1     | +0.1     | +0.2     | +0.0       |       | 43.0                 | 46.0                 | -3.0         | White        |
| 7 | 2.425M      | 42.4               | +0.2     | +0.1     | +0.1     | +0.0       |       | 42.8                 | 46.0                 | -3.2         | White        |
| 8 | 2.412M      | 42.2               | +0.2     | +0.1     | +0.1     | +0.0       |       | 42.6                 | 46.0                 | -3.4         | White        |
| 9 | 2.544M      | 42.2               | +0.2     | +0.1     | +0.1     | +0.0       |       | 42.6                 | 46.0                 | -3.4         | White        |

|    |          |      |      |      |      |      |      |      |       |       |
|----|----------|------|------|------|------|------|------|------|-------|-------|
| 10 | 2.676M   | 42.2 | +0.2 | +0.1 | +0.1 | +0.0 | 42.6 | 46.0 | -3.4  | White |
| 11 | 297.000k | 41.6 | +0.0 | +0.1 | +0.2 | +0.0 | 41.9 | 50.3 | -8.4  | White |
|    | Ave      |      |      |      |      |      |      |      |       |       |
| ^  | 296.167k | 51.5 | +0.0 | +0.1 | +0.2 | +0.0 | 51.8 | 50.3 | +1.5  | White |
| 13 | 308.000k | 39.3 | +0.0 | +0.1 | +0.2 | +0.0 | 39.6 | 50.0 | -10.4 | White |
|    | Ave      |      |      |      |      |      |      |      |       |       |
| ^  | 311.438k | 52.0 | +0.0 | +0.1 | +0.2 | +0.0 | 52.3 | 49.9 | +2.4  | White |
| 15 | 592.000k | 32.9 | +0.1 | +0.0 | +0.1 | +0.0 | 33.1 | 46.0 | -12.9 | White |
|    | Ave      |      |      |      |      |      |      |      |       |       |
| ^  | 592.138k | 46.3 | +0.1 | +0.0 | +0.1 | +0.0 | 46.5 | 46.0 | +0.5  | White |

CKC Laboratories, Inc. Date: 04/27/2005 Time: 16:46:34 Belkin Corporation WVO#: 83591  
FCC 15.207 Class B COND [AVE] Test Lead: White 110V 60Hz Sequence#: 27



Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**

Specification: **FCC 15.209**

Work Order #: **83591**

Date: 04/26/2005

Test Type: **Radiated Scan**

Time: 09:50:59

Equipment: **Bluetooth Transmitter**

Sequence#: 4

Manufacturer: Belkin Corporation

Tested By: E. Wong

Model: F8Z901-RX

S/N: NA

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

| Function           | Manufacturer | Model #   | S/N |
|--------------------|--------------|-----------|-----|
| Bluetooth Receiver | Belkin       | F8Z901-RX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT (receiver) is placed on the wooden table. The RCA jacks are connected to an audio device and the headphone jack is connected to a stereo headphone. Remote Ipod plays MPS file and transmits the bluetooth signal to the EUT. Receiving Frequency: 2402-2480 MHz, Hopping. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                        |                                    |
|----------------------------------------|------------------------------------|
| T1=Biconalog, SN 2451 040806           | T2=Cable #15, Site A, 010306       |
| T3=Cable #10 051305                    | T4=Preamp 8447D 071406             |
| T5=Horn 6246_072206                    | T6=SMA Cable 1-40GHz AN2604_012306 |
| T7=HP 83017A 071606                    | T8=Cable #20 48ft Helix 091605     |
| T9=HPF 3.0 GHz High Pass Filter 042507 | T10=LPF 2.2 GHz Low Pass 042507    |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq      | Rdng | T1    | T2   | T3    | T4    | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|-------|------|-------|-------|-------|--------|--------|--------|-------|
|   |           |      | T5    | T6   | T7    | T8    |       |        |        |        |       |
|   | MHz       | dBμV | T9    | T10  |       |       | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 1601.000M | 53.1 | +0.0  | +0.0 | +0.0  | +0.0  | +0.0  | 43.2   | 54.0   | -10.8  | Vert  |
|   | Ave       |      | +24.8 | +0.4 | -38.4 | +2.9  |       |        |        |        |       |
|   |           |      | +0.0  | +0.4 |       |       |       |        |        |        |       |
| ^ | 1601.000M | 69.5 | +0.0  | +0.0 | +0.0  | +0.0  | +0.0  | 59.6   | 54.0   | +5.6   | Vert  |
|   |           |      | +24.8 | +0.4 | -38.4 | +2.9  |       |        |        |        |       |
|   |           |      | +0.0  | +0.4 |       |       |       |        |        |        |       |
| 3 | 383.971M  | 37.2 | +16.1 | +3.7 | +0.4  | -27.5 | +0.0  | 29.9   | 46.0   | -16.1  | Horiz |
|   |           |      | +0.0  | +0.0 | +0.0  | +0.0  |       |        |        |        |       |
| 4 | 303.935M  | 39.6 | +14.1 | +3.2 | +0.3  | -27.5 | +0.0  | 29.7   | 46.0   | -16.3  | Horiz |
|   |           |      | +0.0  | +0.0 | +0.0  | +0.0  |       |        |        |        |       |

|    |                  |      |                       |                      |                       |               |      |      |      |       |       |
|----|------------------|------|-----------------------|----------------------|-----------------------|---------------|------|------|------|-------|-------|
| 5  | 351.945M         | 36.8 | +15.4<br>+0.0         | +3.6<br>+0.0         | +0.4<br>+0.0          | -27.6<br>+0.0 | +0.0 | 28.6 | 46.0 | -17.4 | Horiz |
| 6  | 367.953M         | 35.4 | +15.8<br>+0.0         | +3.6<br>+0.0         | +0.4<br>+0.0          | -27.5<br>+0.0 | +0.0 | 27.7 | 46.0 | -18.3 | Horiz |
| 7  | 124.945M         | 38.2 | +12.1<br>+0.0         | +2.0<br>+0.0         | +0.2<br>+0.0          | -27.6<br>+0.0 | +0.0 | 24.9 | 43.5 | -18.6 | Vert  |
| 8  | 1649.500M<br>Ave | 42.6 | +0.0<br>+24.9<br>+0.0 | +0.0<br>+0.4<br>+0.4 | +0.0<br>-39.0<br>+2.9 | +0.0<br>+2.9  | +0.0 | 32.2 | 54.0 | -21.8 | Horiz |
| ^  | 1649.500M        | 67.3 | +0.0<br>+24.9<br>+0.0 | +0.0<br>+0.4<br>+0.4 | +0.0<br>-39.0<br>+2.9 | +0.0<br>+2.9  | +0.0 | 56.9 | 54.0 | +2.9  | Horiz |
| 10 | 690.240M         | 23.9 | +20.9<br>+0.0         | +5.2<br>+0.0         | +0.6<br>+0.0          | -26.9<br>+0.0 | +0.0 | 23.7 | 46.0 | -22.3 | Horiz |
| 11 | 540.240M         | 25.6 | +20.1<br>+0.0         | +4.5<br>+0.0         | +0.4<br>+0.0          | -27.8<br>+0.0 | +0.0 | 22.8 | 46.0 | -23.2 | Horiz |
| 12 | 592.740M         | 21.6 | +19.7<br>+0.0         | +4.8<br>+0.0         | +0.5<br>+0.0          | -27.2<br>+0.0 | +0.0 | 19.4 | 46.0 | -26.6 | Horiz |
| 13 | 109.905M         | 30.5 | +11.5<br>+0.0         | +1.9<br>+0.0         | +0.2<br>+0.0          | -27.6<br>+0.0 | +0.0 | 16.5 | 43.5 | -27.0 | Vert  |
| 14 | 480.163M         | 23.1 | +18.7<br>+0.0         | +4.2<br>+0.0         | +0.4<br>+0.0          | -27.7<br>+0.0 | +0.0 | 18.7 | 46.0 | -27.3 | Vert  |

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.247 (d) (FCC 15.205) 25- 40000 MHz**  
 Work Order #: **83591** Date: 04/27/2005  
 Test Type: **Radiated Scan** Time: 11:13:07  
 Equipment: **Bluetooth Transmitter** Sequence#: 1  
 Manufacturer: Belkin Corporation Tested By: E. Wong  
 Model: F8Z901-TX  
 S/N: NA

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

| Function               | Manufacturer | Model #   | S/N |
|------------------------|--------------|-----------|-----|
| Bluetooth Transmitter* | Belkin       | F8Z901-TX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT strapped on a support Ipod MP3 Player is placed on the wooden table. The support laptop is connected to the programming port of the transmitter via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2402 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                           |                                           |
|-------------------------------------------|-------------------------------------------|
| T1=Biconalog, SN 2451 040806              | T2=Cable #15, Site A, 010306              |
| T3=Cable #10 051305                       | T4=Preamp 8447D 071406                    |
| T5=Horn 6246_072206                       | T6=SMA Cable 1-40GHz AN2604_012306        |
| T7=HP 83017A 071606                       | T8=Cable #20 48ft Helix 091605            |
| T9=HPF 3.0 GHz High Pass Filter 042507    | T10=LPF 2.2 GHz Low Pass 042507           |
| T11=-20.8 dB Duty cycle correction factor | T12=-20.8 dB Duty cycle correction factor |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq      | Rdng | T1    | T2   | T3    | T4    | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|-------|------|-------|-------|-------|--------|--------|--------|-------|
|   |           |      | T5    | T6   | T7    | T8    |       |        |        |        |       |
|   | MHz       | dBμV | T9    | T10  | T11   | T12   | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 1602.000M | 71.2 | +0.0  | +0.0 | +0.0  | +0.0  | +0.0  | 40.5   | 54.0   | -13.5  | Vert  |
|   |           |      | +24.8 | +0.4 | -38.4 | +2.9  |       |        |        |        |       |
|   |           |      | +0.0  | +0.4 | +0.0  | -20.8 |       |        |        |        |       |
| 2 | 1601.930M | 64.1 | +0.0  | +0.0 | +0.0  | +0.0  | +0.0  | 33.4   | 54.0   | -20.6  | Horiz |
|   |           |      | +24.8 | +0.4 | -38.4 | +2.9  |       |        |        |        |       |
|   |           |      | +0.0  | +0.4 | +0.0  | -20.8 |       |        |        |        |       |
| 3 | 4804.000M | 49.1 | +0.0  | +0.0 | +0.0  | +0.0  | +0.0  | 28.3   | 54.0   | -25.7  | Vert  |
|   |           |      | +31.8 | +0.8 | -37.9 | +4.7  |       |        |        |        |       |
|   |           |      | +0.6  | +0.0 | +0.0  | -20.8 |       |        |        |        |       |

|   |           |      |                       |                      |                       |                       |      |      |      |       |       |
|---|-----------|------|-----------------------|----------------------|-----------------------|-----------------------|------|------|------|-------|-------|
| 4 | 4804.000M | 46.9 | +0.0<br>+31.8<br>+0.6 | +0.0<br>+0.8<br>+0.0 | +0.0<br>-37.9<br>+0.0 | +0.0<br>+4.7<br>-20.8 | +0.0 | 26.1 | 54.0 | -27.9 | Horiz |
| 5 | 415.961M  | 33.8 | +17.0<br>+0.0         | +3.8<br>+0.0         | +0.4<br>+0.0          | -27.5<br>+0.0         | +0.0 | 27.5 | 80.0 | -52.5 | Horiz |
| 6 | 207.950M  | 38.0 | +10.4<br>+0.0         | +2.6<br>+0.0         | +0.2<br>+0.0          | -27.6<br>+0.0         | +0.0 | 23.6 | 80.0 | -56.4 | Vert  |

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.247 (d) (FCC 15.205) 25- 40000 MHz**  
 Work Order #: **83591** Date: 04/27/2005  
 Test Type: **Radiated Scan** Time: 09:28:16  
 Equipment: **Bluetooth Transmitter** Sequence#: 2  
 Manufacturer: Belkin Corporation Tested By: E. Wong  
 Model: F8Z901-TX  
 S/N: NA

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

| Function               | Manufacturer | Model #   | S/N |
|------------------------|--------------|-----------|-----|
| Bluetooth Transmitter* | Belkin       | F8Z901-TX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT strapped on a support Ipod MP3 Player is placed on the wooden table. The support laptop is connected to the programming port of the transmitter via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2441 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                          |                                        |
|------------------------------------------|----------------------------------------|
| T1=Horn 6246_072206                      | T2=SMA Cable 1-40GHz AN2604_012306     |
| T3=HP 83017A 071606                      | T4=Cable #20 48ft Helix 091605         |
| T5=-20.8 dB Duty cycle correction factor | T6=HPF 3.0 GHz High Pass Filter 042507 |
| T7=LPF 2.2 GHz Low Pass 042507           |                                        |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq      | Rdng | T1    | T2   | T3    | T4   | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|-------|------|-------|------|-------|--------|--------|--------|-------|
|   | MHz       | dBμV | T5    | T6   | T7    |      | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 4882.000M | 46.4 | +31.9 | +0.8 | -37.9 | +4.9 | +0.0  | 46.7   | 54.0   | -7.3   | Horiz |
|   |           |      | +0.0  | +0.6 | +0.0  |      |       |        |        |        |       |
| 2 | 4882.000M | 35.6 | +31.9 | +0.8 | -37.9 | +4.9 | +0.0  | 35.9   | 54.0   | -18.1  | Vert  |
|   | Ave       |      | +0.0  | +0.6 | +0.0  |      |       |        |        |        |       |
| ^ | 4882.000M | 51.7 | +31.9 | +0.8 | -37.9 | +4.9 | +0.0  | 52.0   | 54.0   | -2.0   | Vert  |
|   |           |      | +0.0  | +0.6 | +0.0  |      |       |        |        |        |       |
| 4 | 1628.030M | 67.1 | +24.8 | +0.4 | -38.7 | +2.9 | +0.0  | 36.1   | 80.0   | -43.9  | Vert  |
|   |           |      | -20.8 | +0.0 | +0.4  |      |       |        |        |        |       |
| 5 | 1627.992M | 64.8 | +24.8 | +0.4 | -38.7 | +2.9 | +0.0  | 33.8   | 80.0   | -46.2  | Horiz |
|   |           |      | -20.8 | +0.0 | +0.4  |      |       |        |        |        |       |

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112  
 Customer: **Belkin Corporation**  
 Specification: **FCC 15.247 (d) (FCC 15.205) 25- 40000 MHz**  
 Work Order #: **83591** Date: 04/29/2005  
 Test Type: **Radiated Scan** Time: 16:02:42  
 Equipment: **Bluetooth Transmitter** Sequence#: 3  
 Manufacturer: Belkin Corporation Tested By: E. Wong  
 Model: F8Z901-TX  
 S/N: NA

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

| Function               | Manufacturer | Model #   | S/N |
|------------------------|--------------|-----------|-----|
| Bluetooth Transmitter* | Belkin       | F8Z901-TX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT strapped on a support Ipod MP3 Player is placed on the wooden table. The support laptop is connected to the programming port of the transmitter via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2480 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                          |                                        |
|------------------------------------------|----------------------------------------|
| T1=Horn 6246_072206                      | T2=SMA Cable 1-40GHz AN2604_012306     |
| T3=HP 83017A 071606                      | T4=Cable #20 48ft Helix 091605         |
| T5=LPF 2.2 GHz Low Pass 042507           | T6=HPF 3.0 GHz High Pass Filter 042507 |
| T7=-20.8 dB Duty cycle correction factor |                                        |

**Measurement Data:**

Reading listed by margin.

Test Distance: 3 Meters

| #   | Freq<br>MHz | Rdng<br>dBμV | T1<br>T5<br>dB | T2<br>T6<br>dB | T3<br>T7<br>dB | T4<br>dB | Dist<br>Table | Corr<br>dBμV/m | Spec<br>dBμV/m | Margin<br>dB | Polar<br>Ant |
|-----|-------------|--------------|----------------|----------------|----------------|----------|---------------|----------------|----------------|--------------|--------------|
| 1   | 4960.000M   | 36.1         | +32.0          | +0.8           | -37.8          | +5.0     | +0.0          | 36.7           | 54.0           | -17.3        | Vert         |
| Ave |             |              | +0.0           | +0.6           | +0.0           |          |               |                |                |              |              |
| ^   | 4960.000M   | 52.4         | +32.0          | +0.8           | -37.8          | +5.0     | +0.0          | 53.0           | 54.0           | -1.0         | Vert         |
|     |             |              | +0.0           | +0.6           | +0.0           |          |               |                |                |              |              |
| 3   | 4959.650M   | 33.9         | +32.0          | +0.8           | -37.8          | +5.0     | +0.0          | 34.5           | 54.0           | -19.5        | Horiz        |
| Ave |             |              | +0.0           | +0.6           | +0.0           |          |               |                |                |              |              |
| ^   | 4959.650M   | 49.5         | +32.0          | +0.8           | -37.8          | +5.0     | +0.0          | 50.1           | 54.0           | -3.9         | Horiz        |
|     |             |              | +0.0           | +0.6           | +0.0           |          |               |                |                |              |              |
| 5   | 1635.950M   | 55.9         | +24.9          | +0.4           | -38.8          | +2.9     | +0.0          | 45.3           | 80.0           | -34.7        | Horiz        |
|     |             |              | +0.0           | +0.0           | +0.0           |          |               |                |                |              |              |
| 6   | 1653.980M   | 68.5         | +24.9          | +0.4           | -39.1          | +2.9     | +0.0          | 37.2           | 80.0           | -42.8        | Vert         |
|     |             |              | +0.4           | +0.0           | -20.8          |          |               |                |                |              |              |
| 7   | 1653.980M   | 65.8         | +24.9          | +0.4           | -39.1          | +2.9     | +0.0          | 34.5           | 80.0           | -45.5        | Horiz        |
|     |             |              | +0.4           | +0.0           | -20.8          |          |               |                |                |              |              |
| 8   | 1649.000M   | 33.9         | +24.9          | +0.4           | -39.0          | +2.9     | +0.0          | 23.1           | 80.0           | -56.9        | Horiz        |
|     |             |              | +0.0           | +0.0           | +0.0           |          |               |                |                |              |              |

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.247 (d) (FCC 15.205) 25- 40000 MHz**  
 Work Order #: **83591** Date: 04/29/2005  
 Test Type: **Radiated Scan** Time: 11:34:14  
 Equipment: **Bluetooth Transmitter** Sequence#: 51  
 Manufacturer: Belkin Corporation Tested By: E. Wong  
 Model: F8Z901-RX  
 S/N: NA

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

| Function           | Manufacturer | Model #   | S/N |
|--------------------|--------------|-----------|-----|
| Bluetooth Receiver | Belkin       | F8Z901-RX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT is placed on the wooden table. The support laptop is connected to the programming port of the EUT via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2480 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                |                                    |
|--------------------------------|------------------------------------|
| T1=Horn 6246_072206            | T2=SMA Cable 1-40GHz AN2604_012306 |
| T3=HP 83017A 071606            | T4=Cable #20 48ft Helix 091605     |
| T5=LPF 2.2 GHz Low Pass 042507 |                                    |

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

| # | Freq      | Rdng | T1            | T2   | T3    | T4   | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|---------------|------|-------|------|-------|--------|--------|--------|-------|
|   | MHz       | dBμV | T5<br>dB      | dB   | dB    | dB   | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 1653.330M | 64.3 | +24.9<br>+0.4 | +0.4 | -39.0 | +2.9 | +0.0  | 53.9   | 80.0   | -26.1  | Horiz |
| 2 | 1653.330M | 63.0 | +24.9<br>+0.4 | +0.4 | -39.0 | +2.9 | +0.0  | 52.6   | 80.0   | -27.4  | Vert  |

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.247 (d) (FCC 15.205) 25- 40000 MHz**  
 Work Order #: **83591** Date: 04/29/2005  
 Test Type: **Radiated Scan** Time: 11:55:40  
 Equipment: **Bluetooth Transmitter** Sequence#: 52  
 Manufacturer: Belkin Corporation Tested By: E. Wong  
 Model: F8Z901-RX  
 S/N: NA

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

| Function           | Manufacturer | Model #   | S/N |
|--------------------|--------------|-----------|-----|
| Bluetooth Receiver | Belkin       | F8Z901-RX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT is placed on the wooden table. The support laptop is connected to the programming port of the EUT via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2441 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                |                                    |
|--------------------------------|------------------------------------|
| T1=Horn 6246_072206            | T2=SMA Cable 1-40GHz AN2604_012306 |
| T3=HP 83017A 071606            | T4=Cable #20 48ft Helix 091605     |
| T5=LPF 2.2 GHz Low Pass 042507 |                                    |

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

| # | Freq      | Rdng | T1            | T2   | T3    | T4   | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|---------------|------|-------|------|-------|--------|--------|--------|-------|
|   | MHz       | dBμV | T5<br>dB      | dB   | dB    | dB   | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 1627.500M | 63.1 | +24.8<br>+0.4 | +0.4 | -38.7 | +2.9 | +0.0  | 52.9   | 80.0   | -27.1  | Horiz |
| 2 | 1627.500M | 62.8 | +24.8<br>+0.4 | +0.4 | -38.7 | +2.9 | +0.0  | 52.6   | 80.0   | -27.4  | Vert  |

Test Location: CKC Laboratories, Inc. • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Belkin Corporation**  
 Specification: **FCC 15.247 (d) (FCC 15.205) 25- 40000 MHz**  
 Work Order #: **83591** Date: 04/29/2005  
 Test Type: **Radiated Scan** Time: 14:23:56  
 Equipment: **Bluetooth Transmitter** Sequence#: 53  
 Manufacturer: Belkin Corporation Tested By: E. Wong  
 Model: F8Z901-RX  
 S/N: NA

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

| Function           | Manufacturer | Model #   | S/N |
|--------------------|--------------|-----------|-----|
| Bluetooth Receiver | Belkin       | F8Z901-RX | NA  |

**Support Devices:**

| Function      | Manufacturer | Model #   | S/N         |
|---------------|--------------|-----------|-------------|
| Laptop        | Gateway      | Solo 5150 | BC599030987 |
| Power Adapter | Ipod         | A1070     | NA          |
| MP3 Player    | Ipod         | A1040     | U23211J3NRH |
| Power Supply  | Topward      | 6306D     | NA          |

**Test Conditions / Notes:**

The EUT is placed on the wooden table. The support laptop is connected to the programming port of the EUT via a controller. The EUT is set to operate in non-hopping mode. Frequency: 2402 MHz. Frequency range of measurement = 9 kHz - 25 GHz. 9 kHz - 150 kHz; RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz; RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz; RBW=120 kHz, VBW=120 kHz, 1000 MHz - 25000 MHz; RBW=1 MHz, VBW=1 MHz. 21°C, 43% relative humidity.

**Transducer Legend:**

|                                |                                          |
|--------------------------------|------------------------------------------|
| T1=Horn 6246_072206            | T2=SMA Cable 1-40GHz AN2604_012306       |
| T3=HP 83017A 071606            | T4=Cable #20 48ft Helix 091605           |
| T5=LPF 2.2 GHz Low Pass 042507 | T6=-20.8 dB Duty cycle correction factor |

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

| # | Freq      | Rdng | T1    | T2    | T3    | T4   | Dist  | Corr   | Spec   | Margin | Polar |
|---|-----------|------|-------|-------|-------|------|-------|--------|--------|--------|-------|
|   | MHz       | dBμV | T5    | T6    |       |      |       |        |        |        |       |
|   |           |      | dB    | dB    | dB    | dB   | Table | dBμV/m | dBμV/m | dB     | Ant   |
| 1 | 1601.292M | 67.7 | +24.8 | +0.4  | -38.4 | +2.9 | +0.0  | 37.0   | 54.0   | -17.0  | Horiz |
|   |           |      | +0.4  | -20.8 |       |      |       |        |        |        |       |
| 2 | 1601.355M | 65.2 | +24.8 | +0.4  | -38.4 | +2.9 | +0.0  | 34.5   | 54.0   | -19.5  | Vert  |
|   |           |      | +0.4  | -20.8 |       |      |       |        |        |        |       |