



ADDENDUM TO CROSSBOW TECHNOLOGY INC. TEST REPORT FC06-050

FOR THE

BU2400

**FCC PART 15 SUBPART C SECTIONS 15.207, 15.209 & 15.247, SUBPART B
SECTIONS 15.107 & 15.109, CLASS B AND RSS-210 ISSUE 6 (2005)**

COMPLIANCE

DATE OF ISSUE: OCTOBER 11, 2006

PREPARED FOR:

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Date of test: August 28 - September 8, 2006

Report No.: FC06-050A

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ADMINISTRATIVE INFORMATION

DATE OF TEST:

August 28 - September 8, 2006

DATE OF RECEIPT:

August 28, 2006

MANUFACTURER:

Crossbow Technology Inc.
4145 North First Street
San Jose, CA 95134

REPRESENTATIVE:

Afshin Afzali

TEST LOCATION:

CKC Laboratories, Inc.
1120 Fulton Place
Fremont, CA 94539

TEST METHOD:

ANSI C63.4 (2003), RSS-201 (2005) and
RSS GEN (2005)

PURPOSE OF TEST:

Original Report: To demonstrate the compliance of the BU2400 with the requirements for FCC Part 15 Subpart C Sections 15.207, 15.209 & 15.247, Subpart B Sections 15.107 & 15.109, Class B and RSS-210 devices.

Addendum A is to remove a photograph which was of preliminary testing only and to add a comment on the 15.209 9 kHz-30 MHz data sheet.

FCC TO CANADA STANDARD CORRELATION MATRIX

| Canadian Standard | Canadian Section | FCC Standard | FCC Section | Test Description |
|-------------------|------------------|--------------|-------------------|--|
| RSS GEN | 7.1.4 | 47CFR | 15.203 | Antenna Connector Requirements |
| RSS GEN | 7.2.1 | 47CFR | 15.35(c) | Pulsed Operation |
| RSS GEN | 7.2.2 | 47CFR | 15.207 | AC Mains Conducted Emissions Requirement |
| RSS 210 | 2.1 | 47CFR | 15.215(c) | Frequency Stability Recommendation |
| RSS 210 | 2.2 | 47CFR | 15.205 | Restricted Bands of Operation |
| RSS 210 | 2.6 | 47CFR | 15.209 | General Radiated Emissions Requirement |
| RSS 210 | A8.1 | 47CFR | 15.247(a)(1) | Definition of FHSS |
| RSS 210 | A8.1 | 47CFR | 15.247(h) | Incorporation of Intelligence |
| RSS 210 | A8.1(1) | 47CFR | 15.247(a)(1) | Minimum Channel Bandwidth |
| RSS 210 | A8.1(1) | 47CFR | 15.247(g) | Hopping Sequence |
| RSS 210 | A8.1(2) | 47CFR | 15.247(a)(1) | Carrier Separation |
| RSS 210 | A8.1(2) | 47CFR | 15.247(a)(1) | Carrier Separation 2400 Alternative |
| RSS 210 | A8.1(3) | 47CFR | 15.247(a)(1)(i) | Carrier Separation |
| RSS 210 | A8.1(3) | 47CFR | 15.247(a)(1)(i) | Average Time of Occupancy |
| RSS 210 | A8.1(3) | 47CFR | 15.247(a)(1)(i) | Number of Hopping Channels |
| RSS 210 | A8.1(4) | 47CFR | 15.247(a)(1)(iii) | Average Time of Occupancy |
| RSS 210 | A8.1(4) | 47CFR | 15.247(a)(1)(iii) | Number of Hopping Channels |
| RSS 210 | A8.1(5) | 47CFR | 15.247(a)(1)(ii) | Max 20dB Bandwidth |
| RSS 210 | A8.1(5) | 47CFR | 15.247(a)(1)(ii) | Average Time of Occupancy |
| RSS 210 | A8.1(5) | 47CFR | 15.247(a)(1)(ii) | Number of Hopping Channels |
| RSS 210 | A8.2(1) | 47CFR | 15.247(a)(2) | Minimum 6dB Bandwidth |
| RSS 210 | A8.2(2) | 47CFR | 15.247(e) | Peak Power Spectral Density |
| RSS 210 | A8.3(1) | 47CFR | 15.247(f) | Hybrid Systems - Time of Occupancy |
| RSS 210 | A8.3(1) | 47CFR | 15.247(f) | Hybrid Systems - Power Spectral Density |
| RSS 210 | A8.4(1) | 47CFR | 15.247(b)(2) | RF Power Output |
| RSS 210 | A8.4(2) | 47CFR | 15.247(b)(1) | RF Power Output |
| RSS 210 | A8.4(3) | 47CFR | 15.247(b)(1) | RF Power Output |
| RSS 210 | A8.4(4) | 47CFR | 15.247(b)(3) | RF Power Output |
| RSS 210 | A8.4(5) | 47CFR | 15.247(c)(1) | Directional Gain Requirements |
| RSS 210 | A8.4(6) | 47CFR | 15.247(c)(2) | Beam Steering Antennas |
| RSS 210 | A8.5 | 47CFR | 15.247(d) | Spurious Emissions |
| | 5933 | | 958979 | Site File No. |

Notes: Rule Sections for RSS 210 are taken from RSS 210 Issue 6

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:



Joyce Walker
Quality Assurance Administrative Manager

TEST PERSONNEL:



Art Rice
EMC Engineer



Amrinder Brar
EMC Engineer/Lab Manager

FCC 15.31(e) Voltage Variations

| FREQUENCY MHz | CORRECTED READING dBm | CORRECTED READING dBm | CORRECTED READING dBm | SPEC LIMIT dBm |
|--------------------------------|--|--|--|-------------------------------------|
| | 85% | 100% | 115% | |
| 2480 | -8.75 | -8.3 | -9.17 | 30 |

Test Method: ANSI C63.4 (1992)

Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(1)/15.31(e)

Test Distance: No Distance

Tested By: Art Rice

FCC 15.31(m) Number Of Channels

This device was tested on three channels.

FCC 15.33(a) Frequency Ranges Tested

15.107 Conducted Emissions: 150 kHz – 30 MHz

15.109 Radiated Emissions: 30 kHz – 12.4 GHz

15.207 Conducted Emissions: 150 kHz – 30 MHz

15.209 Radiated Emissions: 9 kHz – 26 GHz

15.247(b) RF Power Output: 1-12.4 GHz

15.247(d) Antenna Conducted Emissions: 30 MHz – 26 GHz

15.247(d) Radiated Spurious Emissions: 1-26 GHz

| FCC SECTION 15.35: 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 | 26 GHz | 1 MHz |

FCC 15.203 Antenna Requirements

The antenna port is a reverse-polarity SMA (male) connector that is not accessible by the end user and it complies with FCC 15.203.

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 in the 2400 MHz to 2483.5 MHz range.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

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

The following model has been tested by CKC Laboratories: **Base Station USB**

Since the time of testing the manufacturer has chosen to use the following model name in its place. Any differences between the names does not affect their EMC characteristics and therefore complies to the level of testing equivalent to the tested model name shown on the data sheets: **BU2400**

EQUIPMENT UNDER TEST

Base Station USB (2 each)

Manuf: Crossbow Technology Inc.
Model: BU2400
Serial: 001 & 002
FCC ID: SHU003BU2400 (pending)

RF Module (2 each)

Manuf: Crossbow Technology Inc.
Model: MPR2400, P/N 8350-334-2
Serial: NA

USB Module (2 each)

Manuf: Crossbow Technology Inc.
Model: MIB520*, P/N 8350-0347-02
Serial: NA

*This model number was not recorded at the time of testing, but the customer declares that is the model number associated with P/N 8350-0347-02.

PERIPHERAL DEVICES

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

Laptop PC

Manuf: Dell
Model: PP11L
Serial: DGZV9B1

USB Mouse

Manuf: Logitech
Model: M-UV94
Serial: LZB42151642

AC Adapter for PC

Manuf: Dell
Model: NADP-90KBA
Serial: CN-0C2894-48661-57S-FZJT

Print/Scan/Copy

Manuf: HP
Model: C5316A
Serial: MY8C4C207Y

Monitor

Manuf: ACER
Model: 7277e
Serial: 9170602001

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 15.107 Six Highest Conducted Emission Levels | | | | | | | | | |
|--|--------------------------------|--------------------|-----------|-----------|-------------|------------------------------------|-----------------------------|--------------|-------|
| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V | SPEC LIMIT dB μ V | MARGIN dB | NOTES |
| | | Lisn dB | Att dB | HPF dB | Cable dB | | | | |
| 0.153000 | 36.7 | 0.4 | 9.8 | 3.7 | 0.1 | 50.7 | 55.8 | -5.1 | BA |
| 0.156000 | 35.3 | 0.4 | 9.8 | 0.0 | 0.1 | 49.1 | 55.7 | -6.6 | WA |
| 0.303000 | 34.9 | 0.3 | 9.8 | 0.0 | 0.1 | 45.4 | 50.2 | -4.8 | WA |
| 0.461000 | 35.2 | 0.3 | 9.7 | 0.0 | 0.1 | 45.3 | 46.7 | -1.4 | WA |
| 0.464000 | 33.5 | 0.3 | 9.7 | 0.0 | 0.1 | 43.6 | 46.6 | -3.0 | WA |
| 1.770000 | 28.3 | 0.3 | 9.7 | 0.1 | 0.2 | 38.6 | 46.0 | -7.4 | BA |

Test Method:

ANSI C63.4 (2003)

NOTES:

A = Average Reading

Spec Limit:

FCC Part 15 Subpart B Section 15.107 Class B

B = Black Lead

W = White Lead

COMMENTS: Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Conducted emissions 0.15-30 MHz.

Table 2: FCC 15.109 Six Highest Radiated Emission Levels

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Ant dB | Amp dB | Cable dB | Dist dB | | | | |
| 119.986 | 48.9 | 11.2 | -25.8 | 1.1 | | 35.4 | 43.5 | -8.1 | HQ |
| 151.512 | 48.8 | 10.6 | -25.7 | 1.2 | | 34.9 | 43.5 | -8.6 | HQ |
| 151.512 | 48.8 | 10.6 | -25.7 | 1.2 | | 34.9 | 43.5 | -8.6 | HQ |
| 174.140 | 47.0 | 9.0 | -25.6 | 1.2 | | 31.6 | 43.5 | -11.9 | VQ |
| 186.323 | 50.7 | 8.6 | -25.6 | 1.2 | | 34.9 | 43.5 | -8.6 | H |
| 233.372 | 48.9 | 11.2 | -25.4 | 1.3 | | 36.0 | 46.0 | -10.0 | H |

Test Method: ANSI C63.4 (2003)
 Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
 V = Vertical Polarization
 Q = Quasi Peak Reading

COMMENTS: Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Radiated emissions 30-1000 MHz.

Table 3: FCC 15.109 Six Highest Radiated Emission Levels: >1 GHz

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Ant dB | Amp dB | Cable dB | Dist dB | | | | |
| 1064.000 | 55.6 | 24.0 | -40.3 | 2.8 | | 42.1 | 54.0 | -11.9 | V |
| 1592.000 | 52.5 | 26.0 | -38.5 | 3.4 | | 43.4 | 54.0 | -10.6 | V |
| 4806.107 | 48.7 | 32.3 | -37.1 | 5.8 | | 49.7 | 54.0 | -4.3 | H |
| 4806.116 | 47.9 | 32.3 | -37.1 | 5.8 | | 48.9 | 54.0 | -5.1 | V |
| 4806.140 | 51.1 | 32.3 | -37.1 | 5.8 | | 52.1 | 54.0 | -1.9 | H |
| 4806.281 | 50.3 | 32.3 | -37.1 | 5.8 | | 51.3 | 54.0 | -2.7 | V |

Test Method: ANSI C63.4 (2003)
 Spec Limit: FCC Part 15 Subpart B Section 15.109 Class B
 Test Distance: 3 Meters

NOTES: H = Horizontal Polarization
 V = Vertical Polarization

COMMENTS: Located at center of test table 80 cm above ground. Continuous operation.
 Receiving on Ch 11=low, RBW=1 MHz. Radiated emissions 1-12.4 GHz.

Table 4: FCC 15.207 Six Highest Conducted Emission Levels

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V | SPEC LIMIT dB μ V | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-----------|-------------|------------------------------------|-----------------------------|--------------|-------|
| | | Lisn dB | Att dB | HPF dB | Cable dB | | | | |
| 0.173270 | 40.1 | 0.4 | 9.8 | 0.0 | 0.1 | 52.4 | 54.8 | -2.4 | W |
| 0.461000 | 34.5 | 0.3 | 9.7 | 0.0 | 0.1 | 44.6 | 46.7 | -2.1 | WA |
| 2.352791 | 33.6 | 0.3 | 9.7 | 0.1 | 0.2 | 43.9 | 46.0 | -2.1 | W |
| 3.675474 | 33.5 | 0.4 | 9.8 | 0.1 | 0.1 | 43.9 | 46.0 | -2.1 | W |
| 4.232617 | 33.1 | 0.4 | 9.8 | 0.1 | 0.1 | 43.5 | 46.0 | -2.5 | W |
| 4.585616 | 33.0 | 0.4 | 9.8 | 0.1 | 0.2 | 43.5 | 46.0 | -2.5 | W |

Test Method:

ANSI C63.4 (2003)

NOTES:

W = White Lead

Spec Limit:

FCC Part 15 Subpart C Section 15.207

A = Average Reading

COMMENTS: Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Note 1) For this test, only the Base Station USB in the continuous transmit mode is connected to the PC. Conducted emissions 0.15-30 MHz.

Table 5: FCC 15.209 Radiated Emission Levels: 9 kHz - 30 MHz

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Ant dB | Amp dB | Cable dB | Dist dB | | | | |
| 0.061 | 59.7 | 9.8 | | 0.2 | | 69.7 | 71.9 | -2.2 | H |
| 0.061 | 59.7 | 9.8 | | 0.2 | | 69.7 | 71.9 | -2.2 | Horiz |

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

NOTES: H = Horizontal Polarization

COMMENTS: Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Note: AC adapter, monitor, print/scan/copy were unplugged during this test to prevent unwanted magnetic fields. Radiated emissions 9 kHz-30 MHz. **No emissions were found from the EUT at this frequency range.**

Table 6: FCC 15.209 Six Highest Radiated Emission Levels: 30-1000 MHz

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Ant dB | Amp dB | Cable dB | Dist dB | | | | |
| 119.986 | 48.9 | 11.2 | -25.8 | 1.1 | | 35.4 | 43.5 | -8.1 | HQ |
| 151.512 | 48.8 | 10.6 | -25.7 | 1.2 | | 34.9 | 43.5 | -8.6 | HQ |
| 151.512 | 48.8 | 10.6 | -25.7 | 1.2 | | 34.9 | 43.5 | -8.6 | HQ |
| 174.140 | 47.0 | 9.0 | -25.6 | 1.2 | | 31.6 | 43.5 | -11.9 | VQ |
| 186.323 | 50.7 | 8.6 | -25.6 | 1.2 | | 34.9 | 43.5 | -8.6 | H |
| 233.372 | 48.9 | 11.2 | -25.4 | 1.3 | | 36.0 | 46.0 | -10.0 | H |

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

NOTES:
 H = Horizontal Polarization
 V = Vertical Polarization
 Q = Quasi Peak Reading

COMMENTS: Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Radiated emissions 30-1000 MHz.

Table 7: FCC 15.209/15.247(d) Six Highest Radiated Emission Levels: 1-26 GHz

| FREQUENCY MHz | METER READING dB μ V | CORRECTION FACTORS | | | | CORRECTED READING dB μ V/m | SPEC LIMIT dB μ V/m | MARGIN dB | NOTES |
|------------------|--------------------------------|--------------------|-----------|-------------|------------|--------------------------------------|-------------------------------|--------------|-------|
| | | Ant dB | Amp dB | Cable dB | Dist dB | | | | |
| 4810.100 | 46.6 | 32.3 | -37.1 | 5.8 | | 47.6 | 54.0 | -6.4 | VA |
| 7215.000 | 35.1 | 36.7 | -36.8 | 8.0 | | 43.0 | 54.0 | -11.0 | V |
| 4880.114 | 51.7 | 32.5 | -37.1 | 5.8 | | 52.9 | 54.0 | -1.1 | VA |
| 4880.202 | 51.6 | 32.5 | -37.1 | 5.8 | | 52.8 | 54.0 | -1.2 | HA |
| 4960.075 | 46.9 | 32.7 | -37.0 | 5.7 | | 48.3 | 54.0 | -5.7 | V |
| 9620.015 | 34.0 | 38.1 | -36.3 | 8.9 | | 44.7 | 54.0 | -9.3 | V |

Test Method: ANSI C63.4 (2003)

Spec Limit: FCC Part 15 Subpart C Sections 15.209/15.247(d)

Test Distance: 3 Meters

NOTES: H = Horizontal Polarization

V = Vertical Polarization

A = Average Reading

COMMENTS: Located at center of test table 80 cm above ground. Continuous operation. Transmitting on channel as noted. Ch 11=low, Ch 18=mid, Ch 26=hi. CW transmit mode. RBW=1 MHz. Fundamentals not recorded. Radiated emissions 1-26 GHz.

Table 8: FCC 15.247(b)(3) RF Power Output Emission Levels

| FREQUENCY MHz | METER READING dBm | CORRECTION FACTORS | | | CORRECTED READING dBm | SPEC LIMIT dBm | MARGIN dB | NOTES |
|------------------|-------------------------|--------------------|----|-------------|-----------------------------|----------------------|--------------|-------|
| | | Lisn dB | dB | Cable dB | | | | |
| 2405.15000 | -7.1 | 0.0 | | | -7.1 | 30.0 | -37.1 | N |
| 2439.70000 | -7.0 | 0.0 | | | -7.0 | 30.0 | -37.0 | N |
| 2480.31000 | -7.6 | 0.0 | | | -7.6 | 30.0 | -37.6 | N |

Test Method: ANSI C63.4 (2003)

Spec Limit: FCC Part 15 Subpart C Section 15.247(b)(3)

NOTES:

N = No Polarization

COMMENTS: MODE 1. Located on wireless bench. Continuous operation. Transmitting on channel as noted. Ch 11=low, Ch 18=mid, Ch 26=hi. EUT antenna output port is directly connected to spectrum analyzer. CW transmit mode. RBW=3 MHz. Fundamentals.

Table 9: FCC 15.247(d) Antenna Conducted Spurious Emission Levels: 30 MHz – 26 GHz

| FREQUENCY MHz | METER READING dBm | CORRECTION FACTORS | | | CORRECTED READING dBm | SPEC LIMIT dBm | MARGIN dB | NOTES |
|------------------|-------------------------|--------------------|----|-------------|-----------------------------|----------------------|--------------|-------|
| | | Lisn dB | dB | Cable dB | | | | |
| 376.800000 | -63.8 | 0.0 | | | -63.8 | -28.3 | -35.5 | N |
| 2180.00000 | -63.6 | 0.0 | | | -63.6 | -28.3 | -35.3 | N |
| 2633.30000 | -64.0 | 0.0 | | | -64.0 | -28.3 | -35.7 | N |
| 4809.00000 | -49.3 | 0.0 | | | -49.3 | -28.3 | -21.0 | N |
| 4878.00000 | -50.2 | 0.0 | | | -50.2 | -28.3 | -21.9 | N |
| 4958.00000 | -53.8 | 0.0 | | | -53.8 | -28.3 | -25.5 | N |

Test Method: ANSI C63.4 (2003)

Spec Limit: FCC Part 15 Subpart C Section 15.247(d)

NOTES:

Q = Quasi Peak Reading

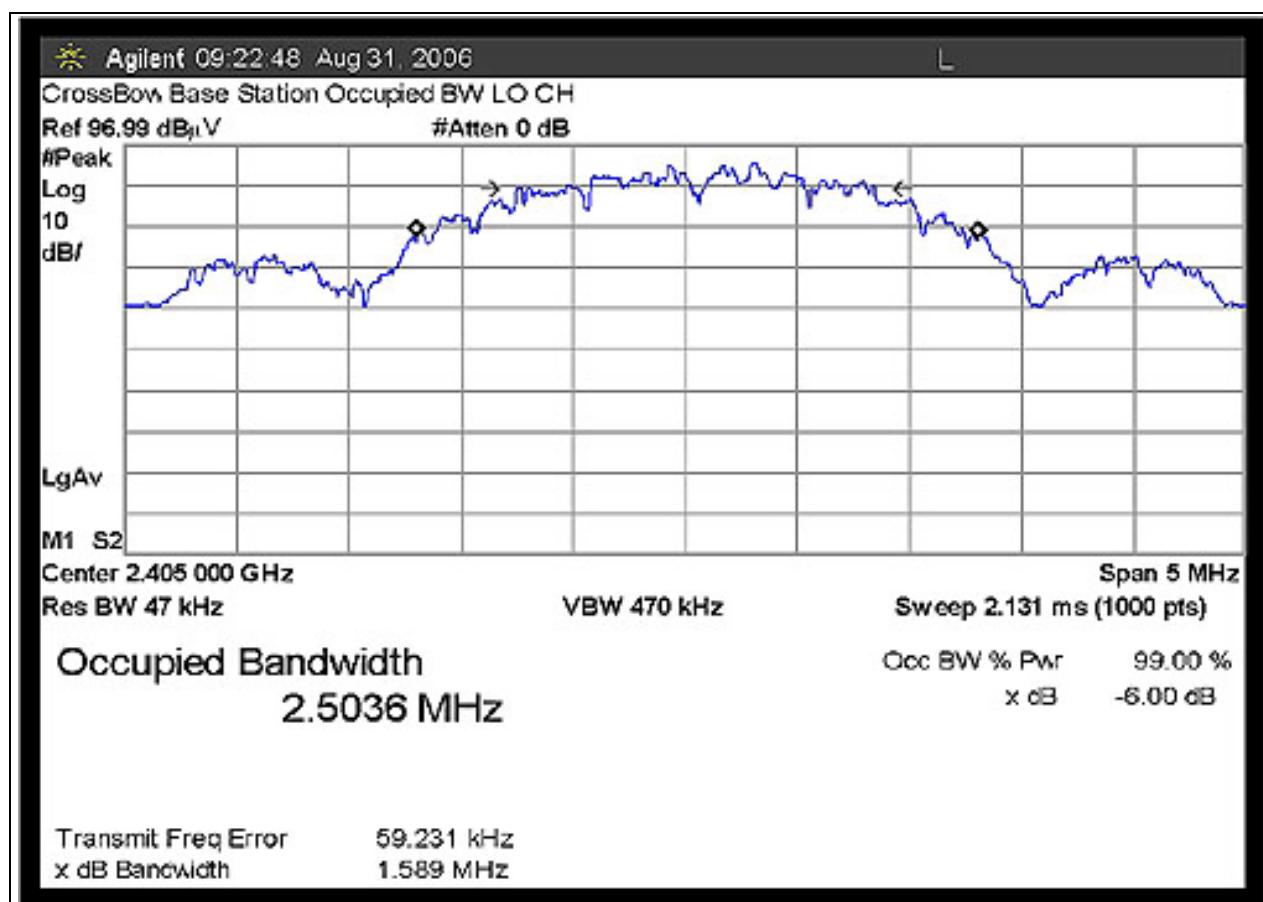
A = Average Reading

B = Black Lead

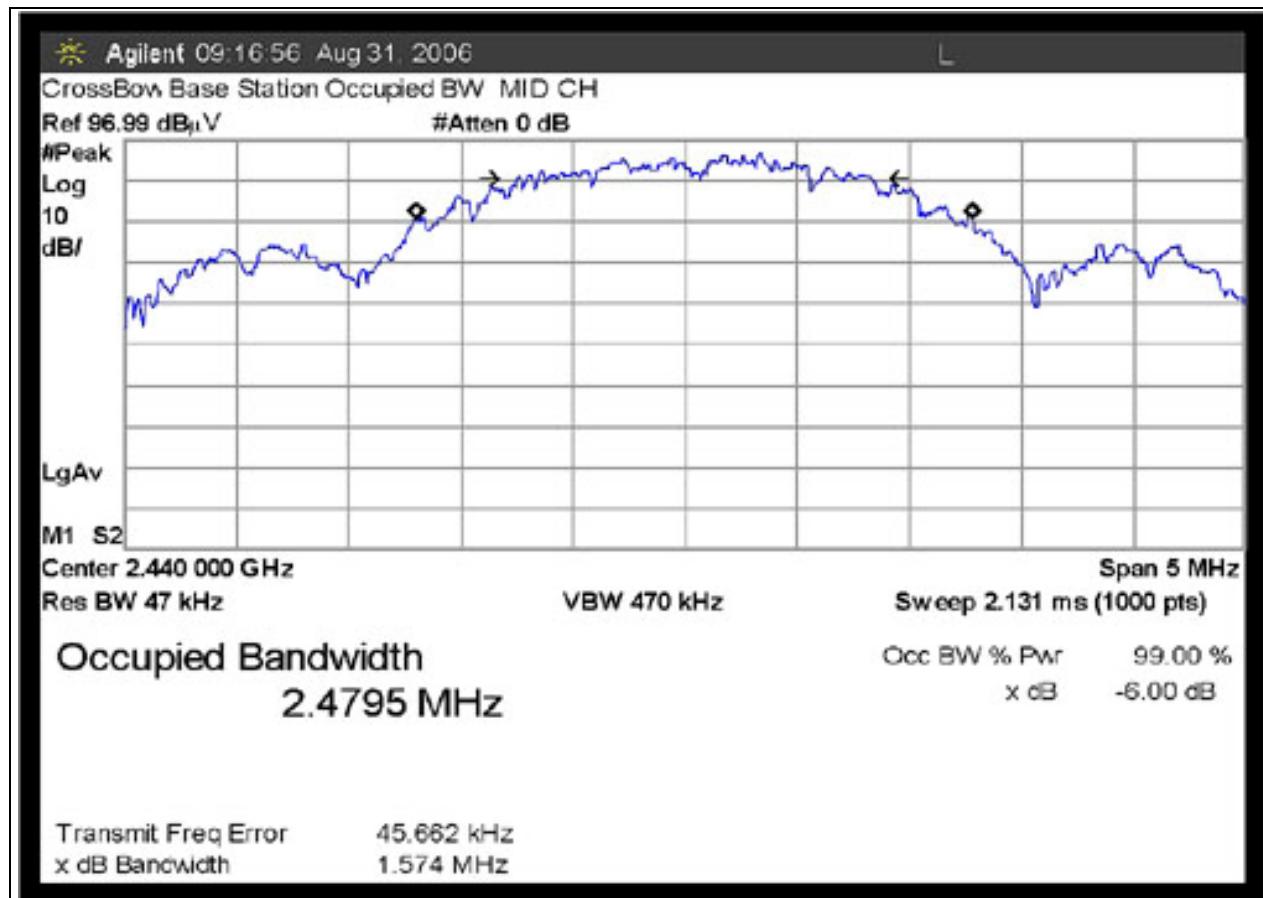
W = White Lead

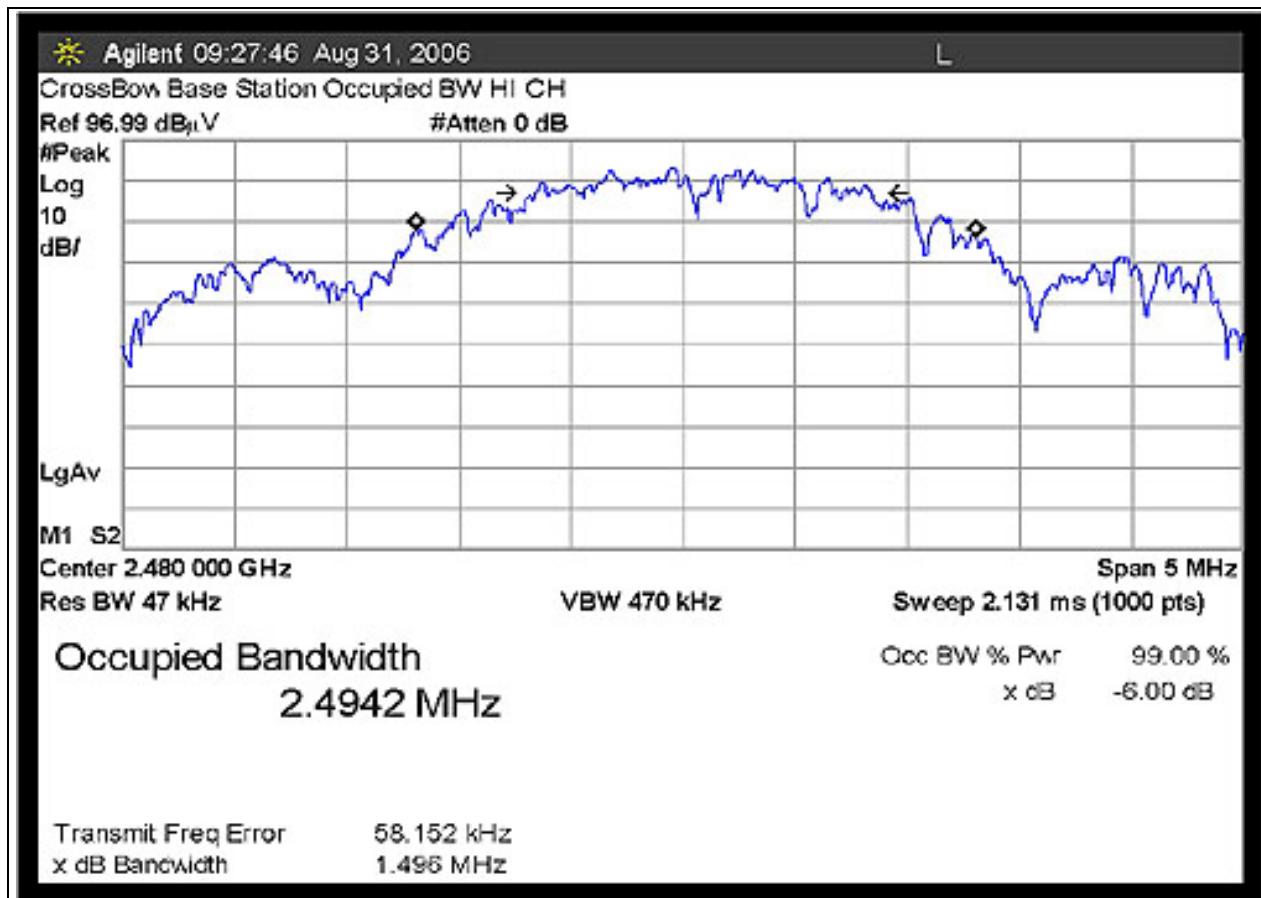
COMMENTS: MODE 1. Located on wireless bench. Continuous operation. For the 15.247(d) spurious limit, 20 dB was subtracted from the strongest antenna conducted level of the fundamental, -8.3 dBm. Transmitting on channel as noted. Ch 11=low, Ch 18=mid, Ch 26=hi. EUT antenna output port is directly connected to spectrum analyzer. CW transmit mode. RBW=100 kHz. Spurious. Radiated emissions 30 MHz-26 GHz.

OCCUPIED BANDWIDTH LOW CHANNEL

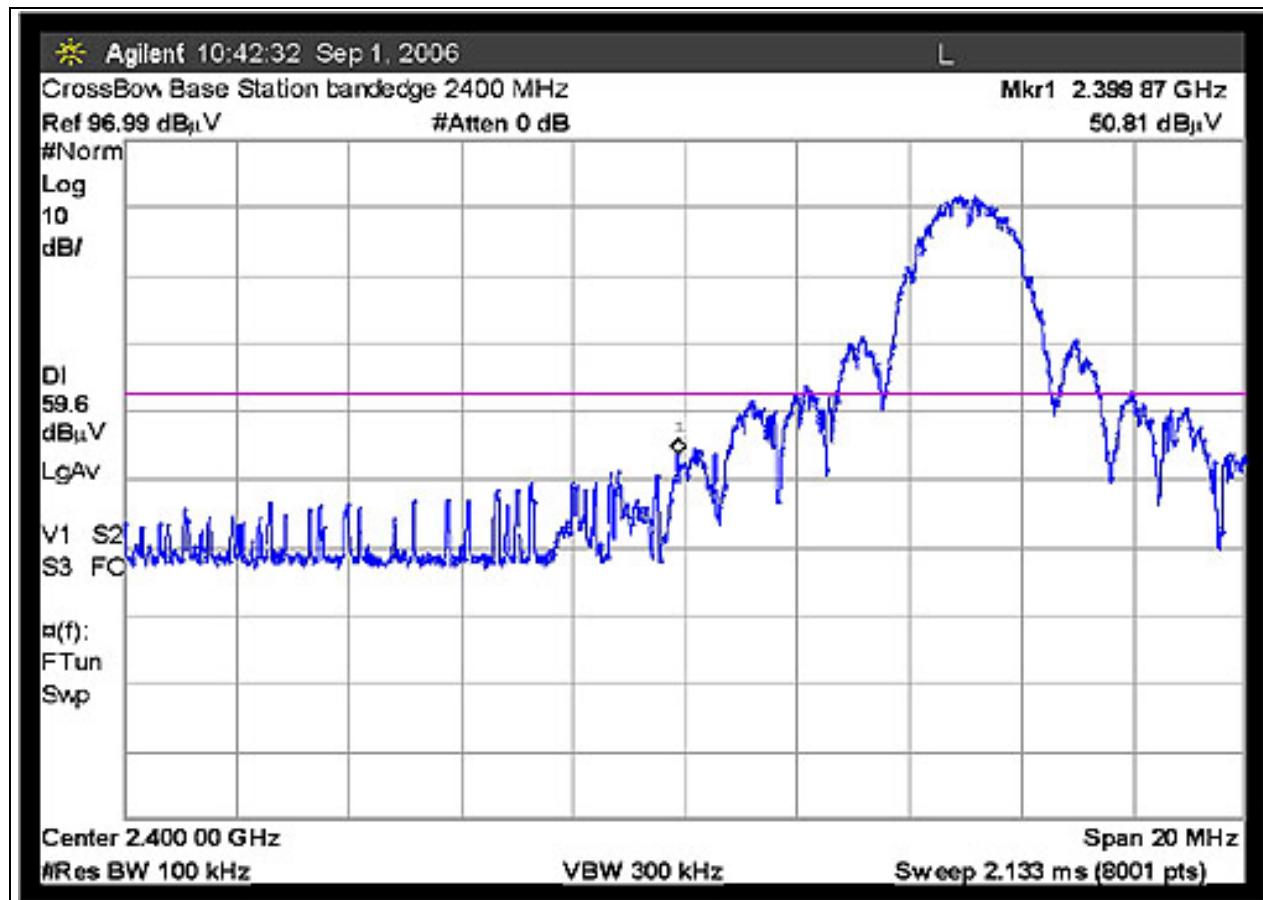


OCCUPIED BANDWIDTH MID CHANNEL

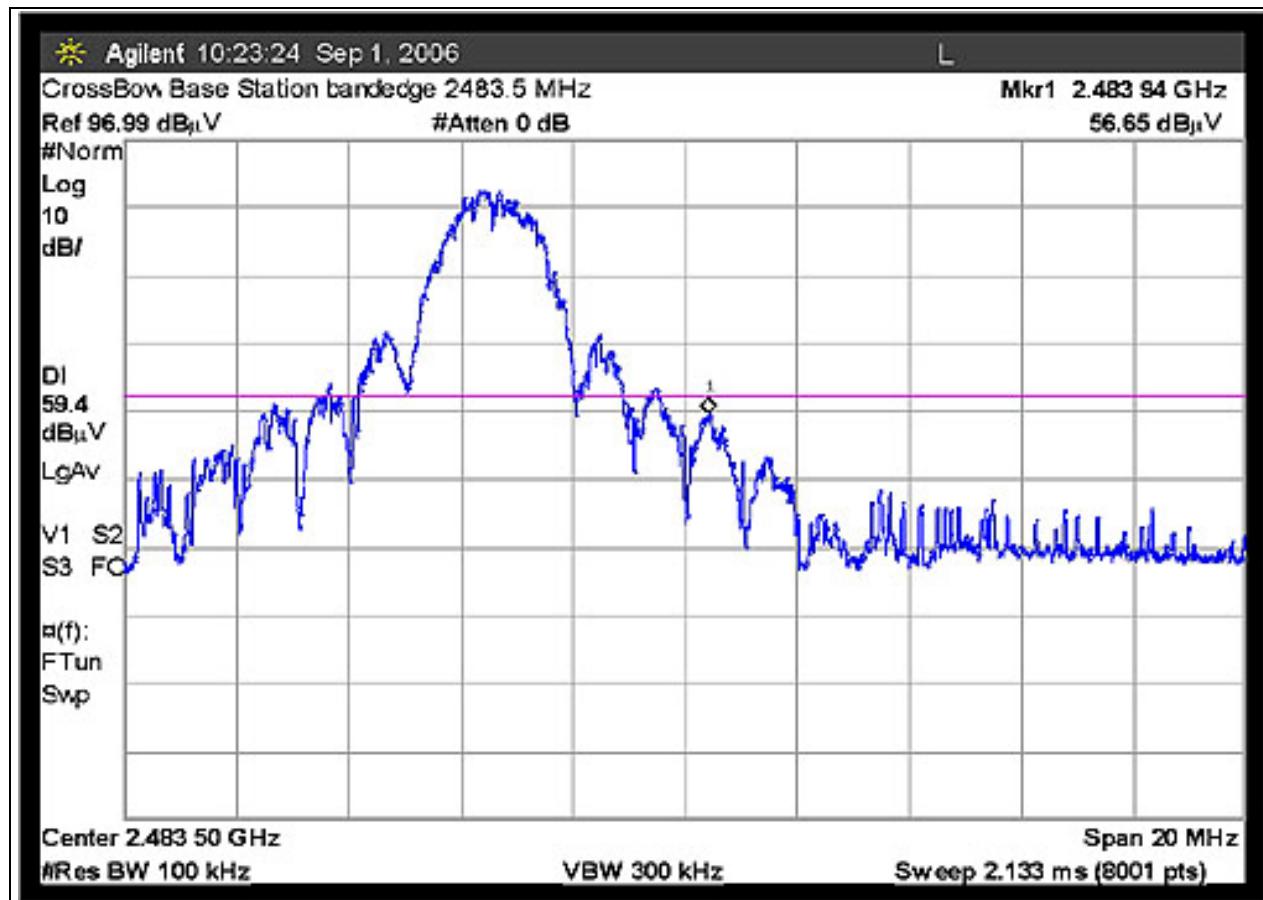


OCCUPIED BANDWIDTH HIGH CHANNEL


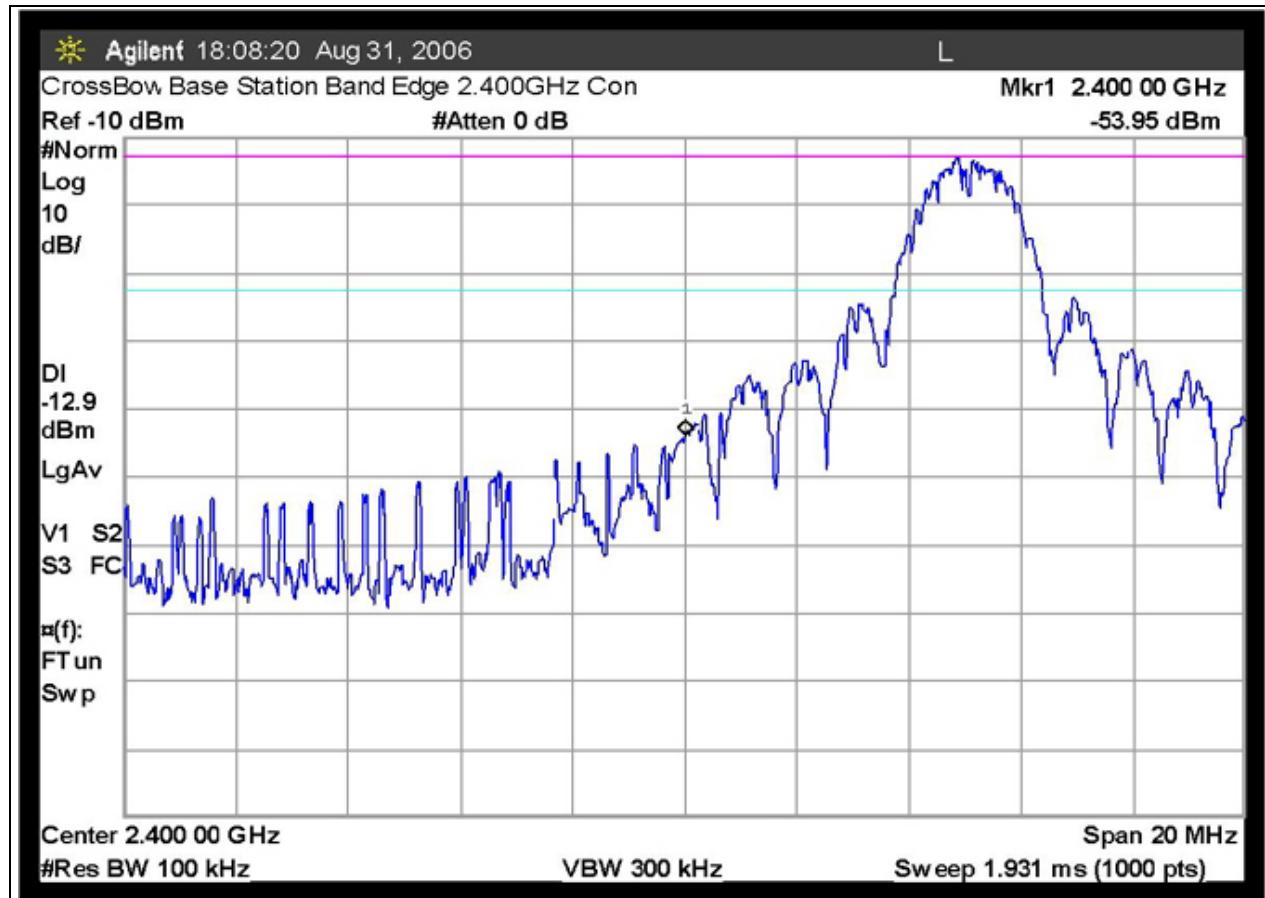
BAND EDGE RADIATED 2400 MHz



BAND EDGE RADIATED 2483.5 MHz



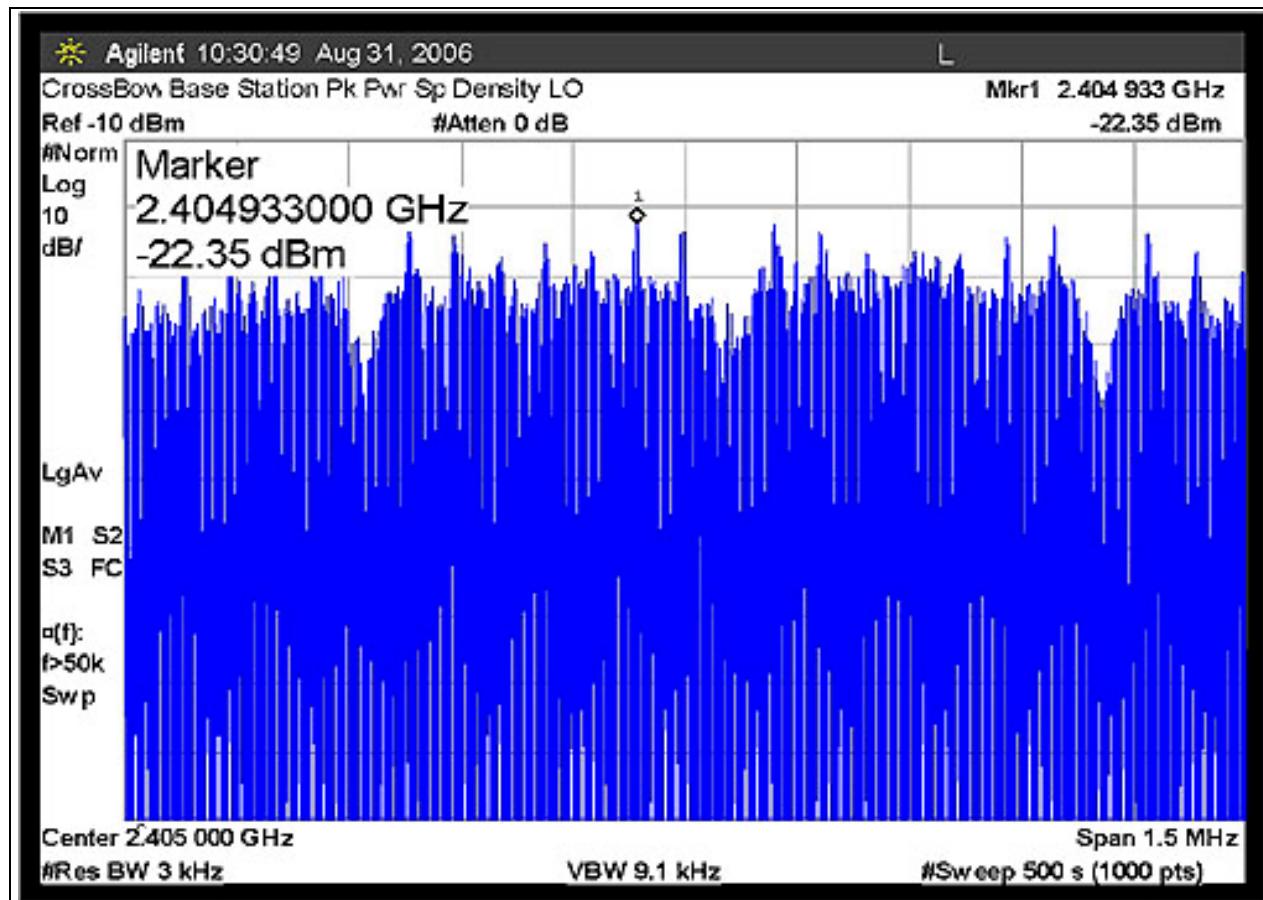
BAND EDGE LOW CONDUCTED



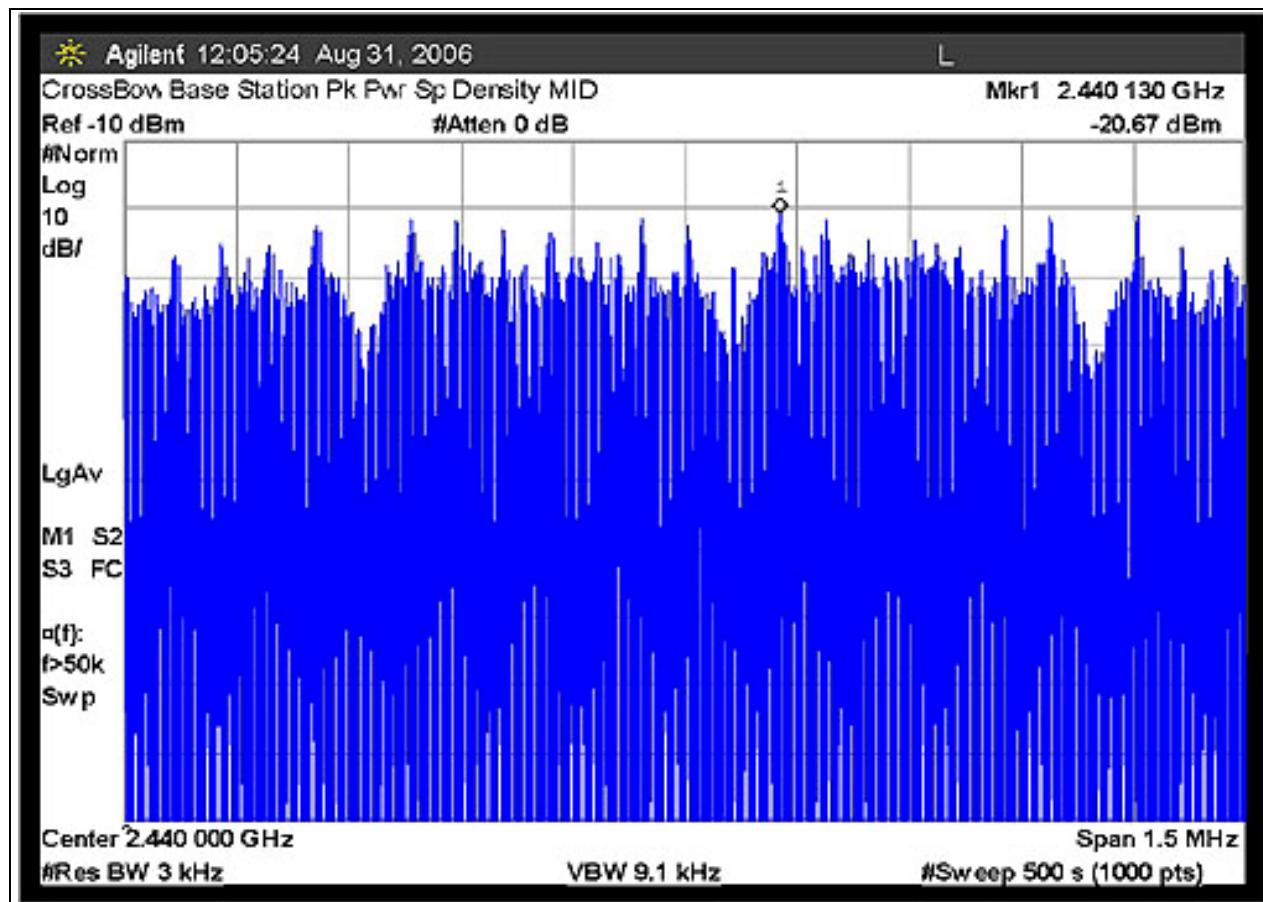
BAND EDGE HIGH CONDUCTED



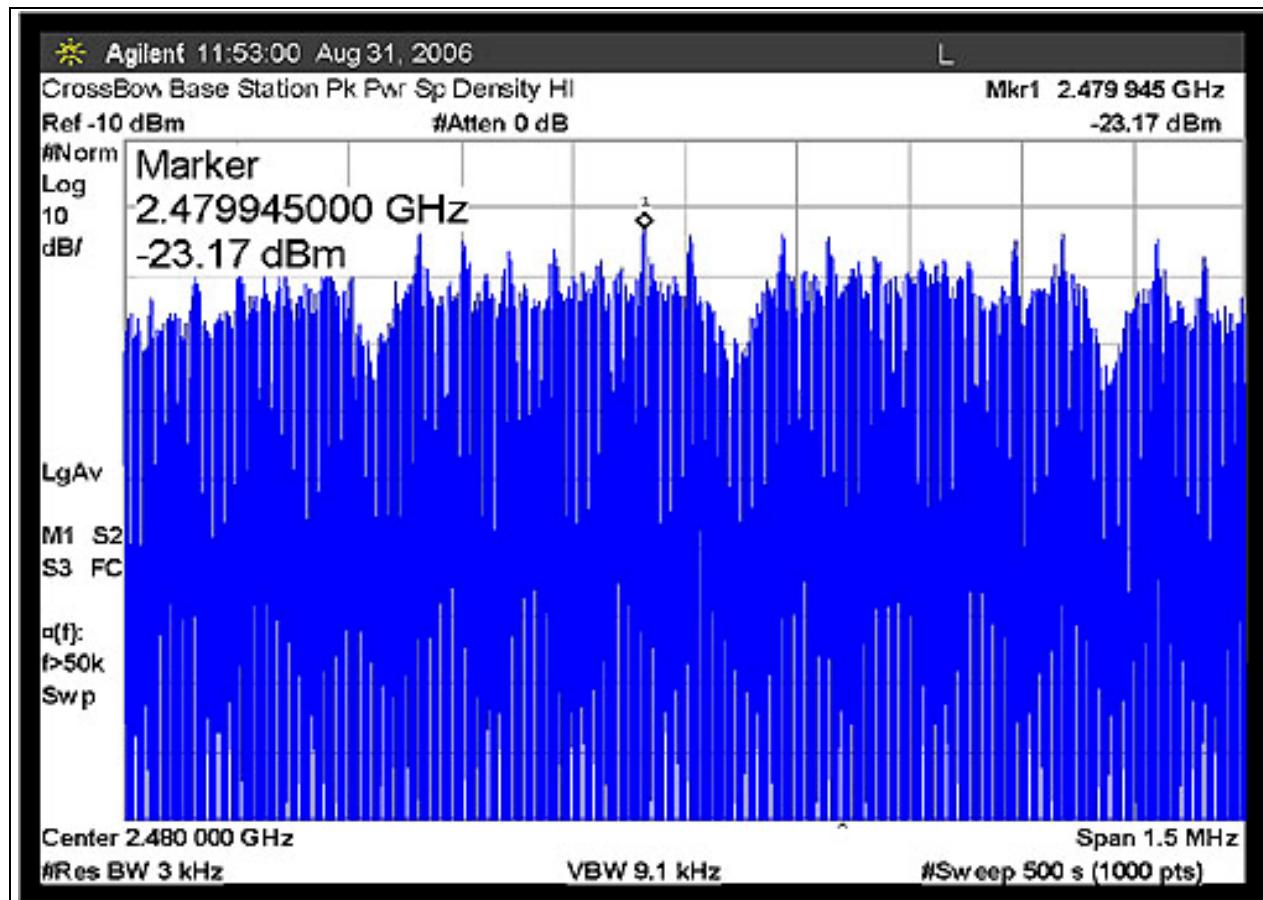
PEAK POWER SPECTRAL DENSITY LOW CHANNEL



PEAK POWER SPECTRAL DENSITY MID CHANNEL



PEAK POWER SPECTRAL DENSITY HIGH CHANNEL



TEMPERATURE AND HUMIDITY DURING TESTING

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

EUT SETUP

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

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

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

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

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in dB μ V/m, the spectrum analyzer reading in dB μ 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 μ V) |
| + Antenna Factor | (dB) |
| + Cable Loss | (dB) |
| - Distance Correction | (dB) |
| - Preamplifier Gain | (dB) |
| = Corrected Reading | (dB μ 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 μ 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 μ H-/+50 ohms. 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.

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

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Side View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Transmitting, Wall Mount Position

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View

APPENDIX B

TEST EQUIPMENT LIST

FCC 15.107 & 15.207

| Function | S/N | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|----------|
| S.A., Display HP-85662A | 2542A12169 | 11/28/2005 | 11/28/2007 | 02662 |
| S.A., RF Section HP-8568B | 2601A02492 | 11/28/2005 | 11/28/2007 | 02663 |
| QP Adapter HP-85650A | 2043A00188 | 10/23/2004 | 10/23/2006 | 01508 |
| Cable | | 06/13/2006 | 06/13/2008 | AN 00880 |
| Attenuator | none | 10/20/2005 | 10/20/2007 | 02223 |
| LISN | 9408-1006 | 05/23/2005 | 05/23/2007 | 00493 |
| TTE High Pass Filter | H4120 | 04/20/2005 | 04/20/2007 | 05258 |

FCC 15.109 & 15.209 30-1000 MHz

| Function | S/N | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|---------|
| S.A., Display HP-85662A | 2542A12169 | 11/28/2005 | 11/28/2007 | 02662 |
| S.A., RF Section HP-8568B | 2601A02492 | 11/28/2005 | 11/28/2007 | 02663 |
| HP8447F opt H64 preamp | 2944A03850 | 03/05/2005 | 03/05/2007 | 00501 |
| QP Adapter HP-85650A | 2043A00188 | 10/23/2004 | 10/23/2006 | 01508 |
| Cable | None | 06/21/2005 | 06/21/2007 | P05299 |
| Cable | None | 06/21/2005 | 06/21/2007 | P05300 |
| Cable | None | 06/21/2005 | 06/21/2007 | P05296 |
| Chase Bilog CBL6111C | 2630 | 01/24/2005 | 01/24/2007 | 00852 |

FCC 15.109 >1 GHz

| Function | S/N | Calibration Date | Cal Due Date | Asset # |
|--------------------------|------------|------------------|--------------|---------|
| Cable, 6' | n/a | 06/07/2006 | 06/07/2008 | P04241 |
| HF-Cable FSJ1P-50A-4A | | 02/20/2006 | 02/20/2008 | P05138 |
| Antenna, Horn 1-18 GHz | 1064 | 03/08/2005 | 03/08/2007 | 02061 |
| Cable, HF 36" | n/a | 02/08/2005 | 02/08/2007 | P05200 |
| Preamplifier, HP83017A | 3123A00283 | 05/09/2005 | 05/09/2007 | 00785 |
| E4446A Spectrum Analyzer | US44300408 | 01/13/2005 | 01/13/2007 | 02668 |
| S.A. HP 8593EM | 3624A00159 | 10/31/2004 | 10/31/2006 | 02111 |

FCC 15.209 9 kHz - 30 MHz

| Function | S/N | Calibration Date | Cal Due Date | Asset # |
|---------------------------|------------|------------------|--------------|---------|
| S.A., Display HP-85662A | 2542A12169 | 11/28/2005 | 11/28/2007 | 02662 |
| S.A., RF Section HP-8568B | 2601A02492 | 11/28/2005 | 11/28/2007 | 02663 |
| QP Adapter HP-85650A | 2043A00188 | 10/23/2004 | 10/23/2006 | 01508 |
| Cable | None | 06/21/2005 | 06/21/2007 | P05299 |
| Cable | None | 06/21/2005 | 06/21/2007 | P05300 |
| Cable | None | 06/21/2005 | 06/21/2007 | P05296 |
| Mag Loop - 6502 | 2078 | 05/13/2005 | 05/13/2007 | 00432 |

FCC 15.209 & 15.247(d) >1 GHz Radiated Emissions

| Function | S/N | Calibration Date | Cal Due Date | Asset # |
|--------------------------|------------|------------------|--------------|---------|
| Cable, 6' | n/a | 06/07/2006 | 06/07/2008 | P04241 |
| HF-Cable FSJ1P-50A-4A | | 02/20/2006 | 02/20/2008 | P05138 |
| Antenna, Horn 1-18 GHz | 1064 | 03/08/2005 | 03/08/2007 | 02061 |
| Cable, HF 36" | n/a | 02/08/2005 | 02/08/2007 | P05200 |
| Preamp, HP83017A | 3123A00283 | 05/09/2005 | 05/09/2007 | 00785 |
| E4446A Spectrum Analyzer | US44300408 | 01/13/2005 | 01/13/2007 | 02668 |
| S.A. HP 8593EM | 3624A00159 | 10/31/2004 | 10/31/2006 | 02111 |
| Cable, HF | n/a | 07/12/2005 | 07/12/2007 | P05314 |
| Active Horn 18-26GHz | 1087835 | 10/25/2005 | 10/25/2007 | 02694 |

FCC 15.247(b)(3) & 15.247(d) Antenna Conducted Emissions

| Function | S/N | Calibration Date | Cal Due Date | Asset # |
|----------------|------------|------------------|--------------|---------|
| S.A. HP 8593EM | 3624A00159 | 10/31/2004 | 10/31/2006 | 02111 |

APPENDIX C
MEASUREMENT DATA SHEETS

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.107 B COND [AVE]**
 Work Order #: **85583** Date: **9/7/2006**
 Test Type: **Conducted Emissions** Time: **23:28:56**
 Equipment: **Base Station USB** Sequence #: **26**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB **120V 60Hz**
 S/N: 001, 002

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| Base Station USB | Crossbow Technology Inc. | Base Station USB | 002 |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|------------|--------------------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | NADP-90KBA | CN-0C2894-48661-57S-FZJT |
| USB Mouse | Logitech | M-UV94 | LZB42151642 |
| Monitor | ACER | 7277e | 9170602001 |
| Print/Scan/Copy | HP | C5316A | MY8C4C207Y |

Test Conditions / Notes:

Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Conducted emissions 0.15-30 MHz.

Transducer Legend:

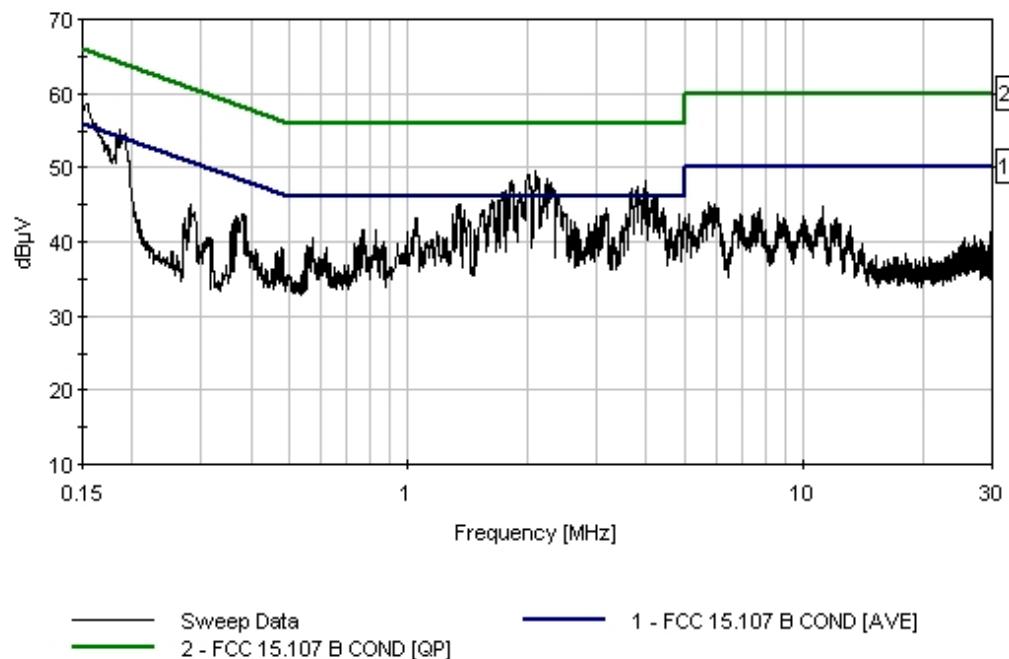
| | |
|---------------------------------------|-----------------------------|
| T1=LISN - AN00493 - Black - ELC "OUT" | T2=ANP02223 10dB Attenuator |
| T3=TTE HP Filter P05258 | T4=Cable P00880 |

| Measurement Data: | | Reading listed by margin. | | | | | | Test Lead: Black | | | |
|--------------------------|----------|---------------------------|------|------|------|------|-------|------------------|------------|--------|-------|
| # | Freq | Rdng | T1 | T2 | T3 | T4 | Dist | Corr | Spec | Margin | Polar |
| | MHz | dB μ V | dB | dB | dB | dB | Table | dB μ V | dB μ V | dB | Ant |
| 1 | 153.000k | 36.7 | +0.4 | +9.8 | +3.7 | +0.1 | +0.0 | 50.7 | 55.8 | -5.1 | Black |
| | Ave | | | | | | | | | | |
| ^ | 152.909k | 44.7 | +0.4 | +9.8 | +3.7 | +0.1 | +0.0 | 58.7 | 55.8 | +2.9 | Black |
| | | | | | | | | | | | |
| 3 | 1.770M | 28.3 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 38.6 | 46.0 | -7.4 | Black |
| | Ave | | | | | | | | | | |
| ^ | 1.770M | 36.5 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 46.8 | 46.0 | +0.8 | Black |
| | | | | | | | | | | | |

| | | | | | | | | | | | |
|-----|--------|------|------|------|------|------|------|------|------|-------|-------|
| 5 | 1.832M | 23.2 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 33.5 | 46.0 | -12.5 | Black |
| Ave | | | | | | | | | | | |
| ^ | 1.830M | 38.0 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 48.3 | 46.0 | +2.3 | Black |
| 7 | 3.667M | 22.9 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 33.2 | 46.0 | -12.8 | Black |
| Ave | | | | | | | | | | | |
| ^ | 3.667M | 36.9 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 47.2 | 46.0 | +1.2 | Black |
| 9 | 2.013M | 21.6 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 31.9 | 46.0 | -14.1 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.013M | 38.7 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 49.0 | 46.0 | +3.0 | Black |
| 11 | 2.289M | 21.3 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 31.6 | 46.0 | -14.4 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.289M | 37.6 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 47.9 | 46.0 | +1.9 | Black |
| 13 | 3.786M | 21.1 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 31.4 | 46.0 | -14.6 | Black |
| Ave | | | | | | | | | | | |
| ^ | 3.786M | 37.1 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 47.4 | 46.0 | +1.4 | Black |
| 15 | 2.242M | 20.4 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 30.7 | 46.0 | -15.3 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.242M | 38.3 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 48.6 | 46.0 | +2.6 | Black |
| 17 | 3.820M | 20.3 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 30.6 | 46.0 | -15.4 | Black |
| Ave | | | | | | | | | | | |
| ^ | 3.820M | 36.4 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 46.7 | 46.0 | +0.7 | Black |
| 19 | 2.098M | 20.2 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 30.5 | 46.0 | -15.5 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.098M | 39.2 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 49.5 | 46.0 | +3.5 | Black |
| 21 | 3.973M | 19.4 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 29.7 | 46.0 | -16.3 | Black |
| Ave | | | | | | | | | | | |
| ^ | 3.973M | 37.9 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 48.2 | 46.0 | +2.2 | Black |
| 23 | 4.262M | 18.6 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 28.9 | 46.0 | -17.1 | Black |
| Ave | | | | | | | | | | | |
| ^ | 4.262M | 35.8 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 46.1 | 46.0 | +0.1 | Black |
| 25 | 4.024M | 18.6 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 28.9 | 46.0 | -17.1 | Black |
| Ave | | | | | | | | | | | |
| ^ | 4.024M | 36.3 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 46.6 | 46.0 | +0.6 | Black |

| | | | | | | | | | | | |
|-----|--------|------|------|------|------|------|------|------|------|-------|-------|
| 27 | 2.400M | 16.7 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 27.0 | 46.0 | -19.0 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.400M | 36.1 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 46.4 | 46.0 | +0.4 | Black |
| 29 | 1.732M | 16.7 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 27.0 | 46.0 | -19.0 | Black |
| Ave | | | | | | | | | | | |
| ^ | 1.732M | 36.4 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 46.7 | 46.0 | +0.7 | Black |

CKC Laboratories, Inc. Date: 9/7/2006 Time: 23:28:56 CrossBow WO#: 85583
 FCC 15.107 B COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 26
 AC adapter for Host PC is connected to LISN.



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.107 B COND [AVE]**
 Work Order #: **85583** Date: **9/7/2006**
 Test Type: **Conducted Emissions** Time: **23:49:17**
 Equipment: **Base Station USB** Sequence #: **27**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB **120V 60Hz**
 S/N: 001, 002

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| Base Station USB | Crossbow Technology Inc. | Base Station USB | 002 |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|------------|--------------------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | NADP-90KBA | CN-0C2894-48661-57S-FZJT |
| USB Mouse | Logitech | M-UV94 | LZB42151642 |
| Monitor | ACER | 7277e | 9170602001 |
| Print/Scan/Copy | HP | C5316A | MY8C4C207Y |

Test Conditions / Notes:

Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Conducted emissions 0.15-30 MHz.

Transducer Legend:

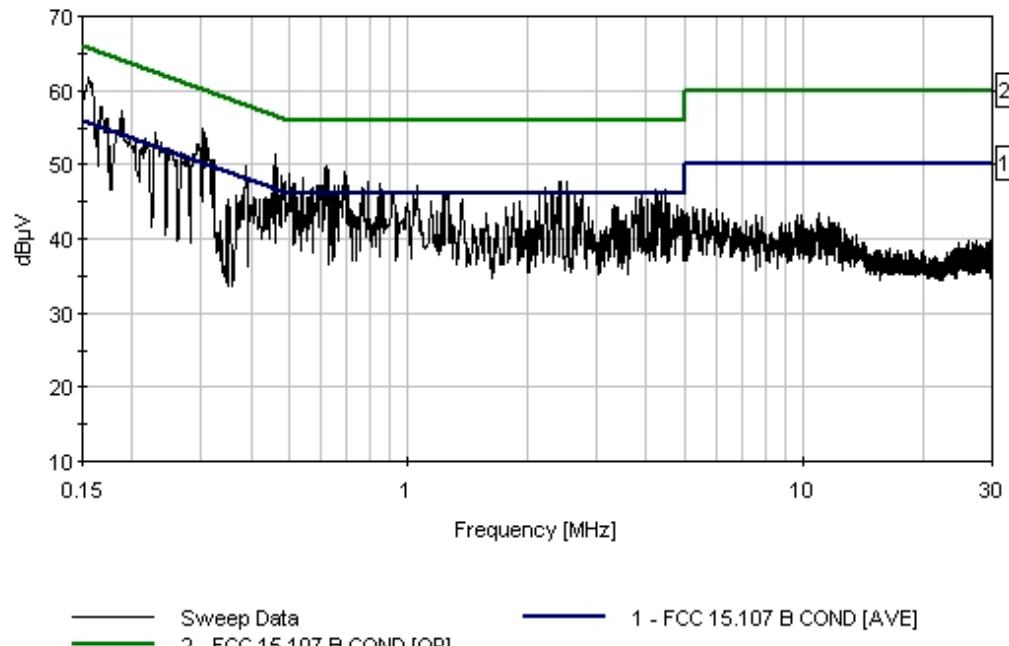
| | |
|---------------------------------------|-----------------------------|
| T1=LISN - AN00493 - White - ELC "OUT" | T2=ANP02223 10dB Attenuator |
| T3=TTE HP Filter P05258 | T4=Cable P00880 |

| <i>Measurement Data:</i> | | Reading listed by margin. | | | | | | Test Lead: White | | | |
|---------------------------------|-----------------|---------------------------|----------|----------|----------|----------|---------------|--------------------|--------------------|--------------|--------------|
| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | T4 dB | Dist Table | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
| 1 | 461.000k Ave | 35.2 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 45.3 | 46.7 | -1.4 | White |
| ^ | 456.878k | 37.8 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 47.9 | 46.7 | +1.2 | White |
| 3 | 464.000k Ave | 33.5 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 43.6 | 46.6 | -3.0 | White |
| ^ | 460.514k | 41.2 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 51.3 | 46.7 | +4.6 | White |
| ^ | 466.332k | 39.5 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 49.6 | 46.6 | +3.0 | White |

| | | | | | | | | | | | |
|-----|----------|------|------|------|------|------|------|------|------|-------|-------|
| 6 | 303.000k | 34.9 | +0.3 | +9.8 | +0.3 | +0.1 | +0.0 | 45.4 | 50.2 | -4.8 | White |
| ^ | 302.712k | 44.3 | +0.3 | +9.8 | +0.3 | +0.1 | +0.0 | 54.8 | 50.2 | +4.6 | White |
| ^ | 301.258k | 44.0 | +0.3 | +9.8 | +0.3 | +0.1 | +0.0 | 54.5 | 50.2 | +4.3 | White |
| 9 | 156.000k | 35.3 | +0.4 | +9.8 | +3.5 | +0.1 | +0.0 | 49.1 | 55.7 | -6.6 | White |
| Ave | | | | | | | | | | | |
| ^ | 155.818k | 48.0 | +0.4 | +9.8 | +3.5 | +0.1 | +0.0 | 61.8 | 55.7 | +6.1 | White |
| 11 | 201.000k | 34.7 | +0.4 | +9.8 | +0.1 | +0.1 | +0.0 | 45.1 | 53.6 | -8.5 | White |
| Ave | | | | | | | | | | | |
| ^ | 196.900k | 46.2 | +0.4 | +9.8 | +0.8 | +0.1 | +0.0 | 57.3 | 54.1 | +3.2 | White |
| 13 | 619.000k | 26.9 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 37.0 | 46.0 | -9.0 | White |
| Ave | | | | | | | | | | | |
| ^ | 623.407k | 39.8 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 49.9 | 46.0 | +3.9 | White |
| ^ | 620.498k | 39.6 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 49.7 | 46.0 | +3.7 | White |
| ^ | 620.679k | 38.2 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 48.3 | 46.0 | +2.3 | White |
| 17 | 620.000k | 26.5 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 36.6 | 46.0 | -9.4 | White |
| Ave | | | | | | | | | | | |
| 18 | 2.384M | 25.1 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 35.4 | 46.0 | -10.6 | White |
| Ave | | | | | | | | | | | |
| ^ | 2.384M | 37.5 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 47.8 | 46.0 | +1.8 | White |
| 20 | 540.000k | 25.2 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 35.3 | 46.0 | -10.7 | White |
| Ave | | | | | | | | | | | |
| ^ | 539.779k | 38.1 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 48.2 | 46.0 | +2.2 | White |
| 22 | 692.000k | 24.6 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 34.7 | 46.0 | -11.3 | White |
| Ave | | | | | | | | | | | |
| ^ | 692.491k | 39.0 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 49.1 | 46.0 | +3.1 | White |
| 24 | 293.000k | 28.5 | +0.3 | +9.8 | +0.3 | +0.1 | +0.0 | 39.0 | 50.4 | -11.4 | White |
| Ave | | | | | | | | | | | |
| ^ | 293.258k | 42.2 | +0.3 | +9.8 | +0.3 | +0.1 | +0.0 | 52.7 | 50.4 | +2.3 | White |
| 26 | 385.000k | 25.5 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 35.7 | 48.2 | -12.5 | White |
| Ave | | | | | | | | | | | |
| ^ | 385.794k | 39.5 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 49.7 | 48.1 | +1.6 | White |
| 28 | 700.000k | 23.1 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 33.2 | 46.0 | -12.8 | White |
| Ave | | | | | | | | | | | |
| ^ | 700.490k | 38.1 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 48.2 | 46.0 | +2.2 | White |

| | | | | | | | | | | | |
|-----|----------|------|------|------|------|------|------|------|------|-------|-------|
| 30 | 498.000k | 22.2 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 32.3 | 46.0 | -13.7 | White |
| Ave | | | | | | | | | | | |
| ^ | 498.329k | 38.7 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 48.8 | 46.0 | +2.8 | White |
| | | | | | | | | | | | |
| 32 | 230.000k | 27.8 | +0.4 | +9.8 | +0.2 | +0.1 | +0.0 | 38.3 | 52.4 | -14.1 | White |
| Ave | | | | | | | | | | | |
| ^ | 229.992k | 43.8 | +0.4 | +9.8 | +0.2 | +0.1 | +0.0 | 54.3 | 52.5 | +1.8 | White |
| | | | | | | | | | | | |
| 34 | 167.000k | 27.8 | +0.4 | +9.8 | +2.5 | +0.1 | +0.0 | 40.6 | 55.1 | -14.5 | White |
| Ave | | | | | | | | | | | |
| ^ | 166.726k | 44.9 | +0.4 | +9.8 | +2.6 | +0.1 | +0.0 | 57.8 | 55.1 | +2.7 | White |
| | | | | | | | | | | | |
| 36 | 479.000k | 17.3 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 27.4 | 46.4 | -19.0 | White |
| Ave | | | | | | | | | | | |
| ^ | 479.422k | 38.3 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 48.4 | 46.3 | +2.1 | White |

CKC Laboratories, Inc. Date: 9/7/2006 Time: 23:49:17 CrossBow WO#: 85583
 FCC 15.107 B COND [AVE] Test Lead: White 120V 60Hz Sequence#: 27
 AC adapter for Host PC is connected to LISN.



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.109 Class B Radiated**
 Work Order #: **85583** Date: **9/7/2006**
 Test Type: **Maximized Emissions** Time: **21:56:08**
 Equipment: **Base Station USB** Sequence #: **24**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB
 S/N: 001, 002

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| Base Station USB | Crossbow Technology Inc. | Base Station USB | 002 |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|------------|--------------------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | NADP-90KBA | CN-0C2894-48661-57S-FZJT |
| USB Mouse | Logitech | M-UV94 | LZB42151642 |
| Monitor | ACER | 7277e | 9170602001 |
| Print/Scan/Copy | HP | C5316A | MY8C4C207Y |

Test Conditions / Notes:

Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Radiated emissions 30-1000 MHz.

Transducer Legend:

| | |
|---------------------------------------|-------------------------------|
| T1=0852-Bi-Log Antenna | T2=Cable P05296 25' RG214 N-N |
| T3=Cable P05299 2' RG214 N-N | T4=Cable P05300 12' RG214 N-N |
| T5=Amp Cal.HP-8447F OPT H64- AN 00501 | |

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

| # | Freq | Rdng | T1 T5 | T2 | T3 | T4 | Dist | Corr | Spec | Margin | Polar |
|---|----------|------------|----------|------|------|------|-------|--------------|--------------|--------|-------|
| | MHz | dB μ V | dB | dB | dB | dB | Table | dB μ V/m | dB μ V/m | dB | Ant |
| 1 | 433.027M | 54.0 | +16.4 | +1.1 | +0.1 | +0.5 | +0.0 | 45.7 | 46.0 | -0.3 | Vert |
| | QP | | -26.4 | | | | 357 | | Host PC | | 116 |
| ^ | 433.042M | 56.1 | +16.4 | +1.1 | +0.1 | +0.5 | +0.0 | 47.8 | 46.0 | +1.8 | Vert |
| | | | -26.4 | | | | 357 | | | | 116 |
| 3 | 431.418M | 53.9 | +16.3 | +1.1 | +0.1 | +0.5 | +0.0 | 45.4 | 46.0 | -0.6 | Vert |
| | QP | | -26.5 | | | | 350 | | Host PC | | 99 |
| ^ | 431.429M | 56.3 | +16.3 | +1.1 | +0.1 | +0.5 | +0.0 | 47.8 | 46.0 | +1.8 | Vert |
| | | | -26.5 | | | | 350 | | | | 99 |

| | | | | | | | | | | | |
|----|----------|------|-------|------|------|------|------|------|---------|------|-------|
| 5 | 799.582M | 46.5 | +21.3 | +1.6 | +0.2 | +0.8 | +0.0 | 43.5 | 46.0 | -2.5 | Vert |
| | QP | | -26.9 | | | | 200 | | Host PC | | 153 |
| ^ | 799.563M | 49.7 | +21.3 | +1.6 | +0.2 | +0.8 | +0.0 | 46.7 | 46.0 | +0.7 | Vert |
| | | | -26.9 | | | | 200 | | | | 153 |
| 7 | 34.270M | 45.0 | +16.2 | +0.3 | +0.1 | +0.2 | +0.0 | 35.7 | 40.0 | -4.3 | Vert |
| | QP | | -26.1 | | | | 270 | | Monitor | | 99 |
| ^ | 34.277M | 48.1 | +16.2 | +0.3 | +0.1 | +0.2 | +0.0 | 38.8 | 40.0 | -1.2 | Vert |
| | | | -26.1 | | | | 270 | | | | 99 |
| 9 | 36.066M | 44.4 | +15.4 | +0.3 | +0.1 | +0.2 | +0.0 | 34.3 | 40.0 | -5.7 | Vert |
| | QP | | -26.1 | | | | 79 | | Monitor | | 99 |
| ^ | 36.045M | 47.2 | +15.4 | +0.3 | +0.1 | +0.2 | +0.0 | 37.1 | 40.0 | -2.9 | Vert |
| | | | -26.1 | | | | 79 | | | | 99 |
| 11 | 34.689M | 43.8 | +16.0 | +0.3 | +0.1 | +0.2 | +0.0 | 34.3 | 40.0 | -5.7 | Vert |
| | QP | | -26.1 | | | | 143 | | Monitor | | 99 |
| ^ | 34.698M | 47.2 | +16.0 | +0.3 | +0.1 | +0.2 | +0.0 | 37.7 | 40.0 | -2.3 | Vert |
| | | | -26.1 | | | | 143 | | | | 99 |
| 13 | 36.548M | 44.3 | +15.2 | +0.3 | +0.1 | +0.2 | +0.0 | 34.0 | 40.0 | -6.0 | Vert |
| | QP | | -26.1 | | | | 80 | | Monitor | | 100 |
| ^ | 36.504M | 47.7 | +15.2 | +0.3 | +0.1 | +0.2 | +0.0 | 37.4 | 40.0 | -2.6 | Vert |
| | | | -26.1 | | | | 80 | | | | 99 |
| 15 | 35.701M | 43.6 | +15.6 | +0.3 | +0.1 | +0.2 | +0.0 | 33.7 | 40.0 | -6.3 | Vert |
| | QP | | -26.1 | | | | 80 | | Monitor | | 99 |
| ^ | 35.695M | 46.8 | +15.6 | +0.3 | +0.1 | +0.2 | +0.0 | 36.9 | 40.0 | -3.1 | Vert |
| | | | -26.1 | | | | 80 | | | | 99 |
| 17 | 366.415M | 49.0 | +14.6 | +1.1 | +0.2 | +0.6 | +0.0 | 39.5 | 46.0 | -6.5 | Vert |
| | QP | | -26.0 | | | | 340 | | Host PC | | 147 |
| ^ | 366.404M | 51.3 | +14.6 | +1.1 | +0.2 | +0.6 | +0.0 | 41.8 | 46.0 | -4.2 | Vert |
| | | | -26.0 | | | | 340 | | | | 147 |
| 19 | 50.162M | 50.0 | +8.4 | +0.4 | +0.1 | +0.2 | +0.0 | 33.0 | 40.0 | -7.0 | Vert |
| | QP | | -26.1 | | | | 261 | | Monitor | | 99 |
| ^ | 50.194M | 56.3 | +8.4 | +0.4 | +0.1 | +0.2 | +0.0 | 39.3 | 40.0 | -0.7 | Vert |
| | | | -26.1 | | | | 261 | | | | 99 |
| 21 | 119.986M | 48.9 | +11.2 | +0.6 | +0.1 | +0.4 | +0.0 | 35.4 | 43.5 | -8.1 | Horiz |
| | QP | | -25.8 | | | | 275 | | | | 153 |
| ^ | 119.991M | 50.1 | +11.2 | +0.6 | +0.1 | +0.4 | +0.0 | 36.6 | 43.5 | -6.9 | Horiz |
| | | | -25.8 | | | | 275 | | | | 154 |
| 23 | 151.512M | 48.8 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 34.9 | 43.5 | -8.6 | Horiz |
| | QP | | -25.7 | | | | 197 | | | | 190 |
| 24 | 151.512M | 48.8 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 34.9 | 43.5 | -8.6 | Horiz |
| | QP | | -25.7 | | | | 204 | | | | 184 |
| ^ | 151.514M | 50.5 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 36.6 | 43.5 | -6.9 | Horiz |
| | | | -25.7 | | | | 204 | | | | 184 |
| ^ | 151.513M | 50.4 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 36.5 | 43.5 | -7.0 | Horiz |
| | | | -25.7 | | | | 197 | | | | 190 |
| 27 | 186.323M | 50.7 | +8.6 | +0.7 | +0.1 | +0.4 | +0.0 | 34.9 | 43.5 | -8.6 | Horiz |
| | | | -25.6 | | | | 265 | | | | 188 |
| 28 | 30.094M | 38.8 | +17.9 | +0.2 | +0.0 | +0.1 | +0.0 | 31.0 | 40.0 | -9.0 | Vert |
| | QP | | -26.0 | | | | 271 | | Monitor | | 99 |
| ^ | 30.102M | 43.9 | +17.9 | +0.2 | +0.0 | +0.1 | +0.0 | 36.1 | 40.0 | -3.9 | Vert |
| | | | -26.0 | | | | 271 | | | | 99 |

| | | | | | | | | | | | |
|----|----------|------|----------------|------|------|------|-------------|------|------|-------|--------------|
| 30 | 233.372M | 48.9 | +11.2 -25.4 | +0.8 | +0.1 | +0.4 | +0.0 312 | 36.0 | 46.0 | -10.0 | Horiz 135 |
| 31 | 174.140M | 47.0 | +9.0 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 7 | 31.6 | 43.5 | -11.9 | Vert 109 |
| ^ | 174.151M | 56.0 | +9.0 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 7 | 40.6 | 43.5 | -2.9 | Vert 109 |
| 33 | 174.138M | 46.0 | +9.0 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 341 | 30.6 | 43.5 | -13.0 | Horiz 123 |
| ^ | 174.095M | 55.9 | +9.1 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 341 | 40.6 | 43.5 | -2.9 | Horiz 123 |
| 35 | 172.781M | 45.1 | +9.2 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 343 | 29.9 | 43.5 | -13.6 | Horiz 149 |
| ^ | 172.849M | 51.2 | +9.2 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 343 | 36.0 | 43.5 | -7.5 | Horiz 149 |
| 37 | 162.207M | 44.0 | +10.0 -25.7 | +0.7 | +0.1 | +0.4 | +0.0 91 | 29.5 | 43.5 | -14.0 | Horiz 194 |
| ^ | 162.232M | 51.3 | +10.0 -25.7 | +0.7 | +0.1 | +0.4 | +0.0 91 | 36.8 | 43.5 | -6.7 | Horiz 194 |
| 39 | 185.659M | 44.3 | +8.6 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 265 | 28.5 | 43.5 | -15.0 | Horiz 188 |
| ^ | 185.744M | 54.8 | +8.6 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 265 | 39.0 | 43.5 | -4.5 | Horiz 188 |
| 41 | 126.006M | 40.6 | +11.2 -25.7 | +0.6 | +0.1 | +0.4 | +0.0 -10 | 27.2 | 43.5 | -16.3 | Vert 99 |
| ^ | 126.036M | 53.3 | +11.2 -25.7 | +0.6 | +0.1 | +0.4 | +0.0 -10 | 39.9 | 43.5 | -3.6 | Vert 99 |

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.109 Class B Radiated**
 Work Order #: **85583** Date: **9/1/2006**
 Test Type: **Radiated Scan/Maximized** Time: **13:55:07**
 Equipment: **Base Station USB** Sequence #: **8**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB
 S/N: 001

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|--------------|----------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | PA-1650-0502 | 71615-621-64FD |

Test Conditions / Notes:

Located at center of test table 80 cm above ground. Continuous operation. Receiving on Ch 11=low, RBW=1 MHz.
 Radiated emissions 1-12.4 GHz.

Transducer Legend:

| | |
|-------------------------|--|
| T1=ANP05200 1-40GHz | T2=ANP04241 HF-Heliax Cable |
| T3=P05138 HF Cable 25ft | T4=Horn Antenna AN02061 sn1064 (Fremont) |
| T5=HP-83017A, A/N 00785 | |

| # | Freq MHz | Rdng dB μ V | Reading listed by margin. | | | | Test Distance: 3 Meters | | | |
|---|-------------|--------------------|---------------------------|----------|----------|----------|-------------------------|-----------------------------|----------------------|--------------|
| | | | T1 dB | T2 dB | T3 dB | T4 dB | Dist Table | Corr dB μ V/m | Spec dB μ V/m | Margin dB |
| | | | T5 dB | | | | | | | Ant |
| 1 | 4806.140M | 51.1 | +1.7 -37.1 | +0.7 | +3.4 | +32.3 | +0.0 80 | 52.1 Maxd | 54.0 | -1.9 119 |
| 2 | 4806.281M | 50.3 | +1.7 -37.1 | +0.7 | +3.4 | +32.3 | +0.0 150 | 51.3 Maxd | 54.0 | -2.7 104 |
| 3 | 4806.107M | 48.7 | +1.7 -37.1 | +0.7 | +3.4 | +32.3 | +0.0 80 | 49.7 Maxd, RBW=100kHz | 54.0 | -4.3 119 |
| 4 | 4806.116M | 47.9 | +1.7 -37.1 | +0.7 | +3.4 | +32.3 | +0.0 150 | 48.9 Maxd, RBW=100kHz | 54.0 | -5.1 104 |
| 5 | 1592.000M | 52.5 | +1.0 -38.5 | +0.5 | +1.9 | +26.0 | +0.0 177 | 43.4 PC only on | 54.0 | -10.6 118 |
| 6 | 1064.000M | 55.6 | +0.9 -40.3 | +0.4 | +1.5 | +24.0 | +0.0 177 | 42.1 PC only on | 54.0 | -11.9 118 |
| 7 | 1327.000M | 52.7 | +1.0 -39.2 | +0.5 | +1.7 | +24.8 | +0.0 177 | 41.5 PC only on | 54.0 | -12.5 118 |

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.207 COND [AVE]**
 Work Order #: **85583** Date: 9/8/2006
 Test Type: **Conducted Emissions** Time: 00:37:24
 Equipment: **Base Station USB** Sequence #: 29
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB 120V 60Hz
 S/N: 001

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|------------|--------------------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | NADP-90KBA | CN-0C2894-48661-57S-FZJT |
| USB Mouse | Logitech | M-UV94 | LZB42151642 |
| Monitor | ACER | 7277e | 9170602001 |
| Print/Scan/Copy | HP | C5316A | MY8C4C207Y |

Test Conditions / Notes:

Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Note 1) For this test, only the Base Station USB in the continuous transmit mode is connected to the PC. Conducted emissions 0.15-30 MHz.

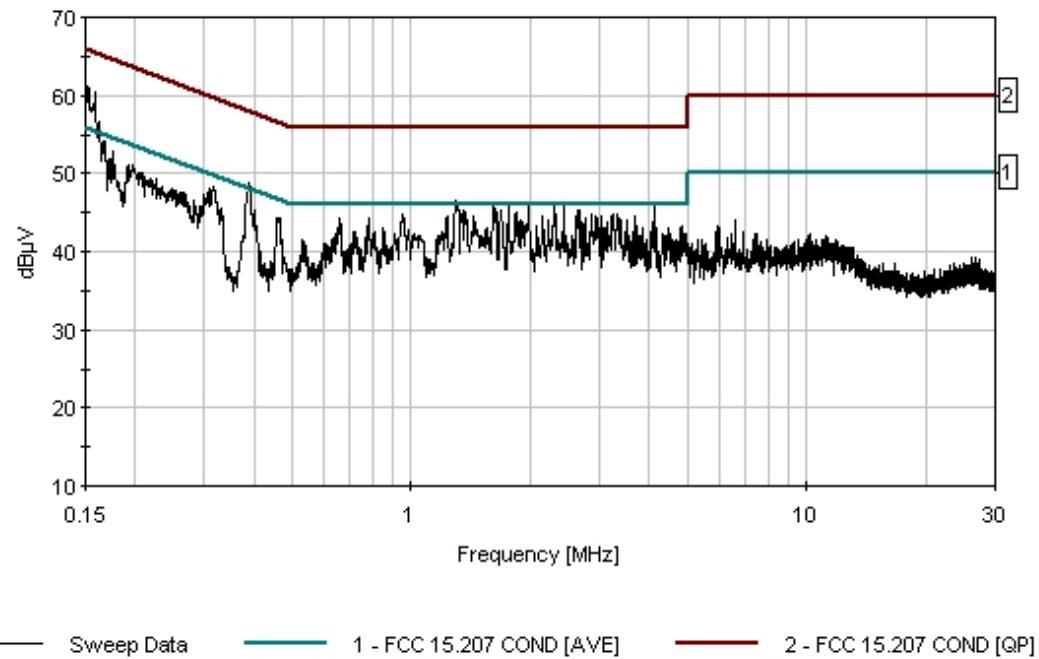
Transducer Legend:

| | |
|---------------------------------------|-----------------------------|
| T1=LISN - AN00493 - Black - ELC "OUT" | T2=ANP02223 10dB Attenuator |
| T3=TTE HP Filter P05258 | T4=Cable P00880 |

| Measurement Data: | | Reading listed by margin. | | | | | | Test Lead: Black | | | |
|--------------------------|-----------------|---------------------------|----------|----------|----------|----------|---------------|--------------------|--------------------|--------------|--------------|
| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | T4 dB | Dist Table | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
| 1 | 389.000k Ave | 33.8 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 44.0 | 48.1 | -4.1 | Black |
| ^ | 388.522k | 38.5 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 48.7 | 48.1 | +0.6 | Black |
| 3 | 1.766M Ave | 29.9 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 40.2 | 46.0 | -5.8 | Black |
| ^ | 1.766M | 35.9 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 46.2 | 46.0 | +0.2 | Black |
| 5 | 1.302M Ave | 28.9 | +0.3 | +9.8 | +0.0 | +0.1 | +0.0 | 39.1 | 46.0 | -6.9 | Black |
| ^ | 1.302M | 36.4 | +0.3 | +9.8 | +0.0 | +0.1 | +0.0 | 46.6 | 46.0 | +0.6 | Black |

| | | | | | | | | | | | |
|-----|----------|------|------|------|------|------|------|------|------|-------|-------|
| 7 | 152.000k | 30.5 | +0.4 | +9.8 | +3.8 | +0.1 | +0.0 | 44.6 | 55.9 | -11.3 | Black |
| Ave | | | | | | | | | | | |
| ^ | 152.182k | 47.0 | +0.4 | +9.8 | +3.8 | +0.1 | +0.0 | 61.1 | 55.9 | +5.2 | Black |
| 9 | 1.613M | 22.4 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 32.7 | 46.0 | -13.3 | Black |
| Ave | | | | | | | | | | | |
| ^ | 1.613M | 35.9 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 46.2 | 46.0 | +0.2 | Black |
| 11 | 2.298M | 21.0 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 31.3 | 46.0 | -14.7 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.298M | 35.5 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 45.8 | 46.0 | -0.2 | Black |
| 13 | 1.987M | 17.2 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 27.5 | 46.0 | -18.5 | Black |
| Ave | | | | | | | | | | | |
| ^ | 1.987M | 35.8 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 46.1 | 46.0 | +0.1 | Black |
| 15 | 4.109M | 17.0 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 27.3 | 46.0 | -18.7 | Black |
| Ave | | | | | | | | | | | |
| ^ | 4.109M | 35.5 | +0.3 | +9.8 | +0.1 | +0.1 | +0.0 | 45.8 | 46.0 | -0.2 | Black |
| 17 | 2.429M | 16.7 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 27.0 | 46.0 | -19.0 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.429M | 35.6 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 45.9 | 46.0 | -0.1 | Black |
| 19 | 2.655M | 16.1 | +0.4 | +9.7 | +0.1 | +0.2 | +0.0 | 26.5 | 46.0 | -19.5 | Black |
| Ave | | | | | | | | | | | |
| ^ | 2.655M | 35.0 | +0.4 | +9.7 | +0.1 | +0.2 | +0.0 | 45.4 | 46.0 | -0.6 | Black |

CKC Laboratories, Inc. Date: 9/8/2006 Time: 00:37:24 CrossBow WO#: 85583
FCC 15.207 COND [AVE] Test Lead: Black 120V 60Hz Sequence#: 29
AC adapter for Host PC is connected to LISN.



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.207 COND [AVE]**
 Work Order #: **85583** Date: **9/8/2006**
 Test Type: **Conducted Emissions** Time: **00:26:43**
 Equipment: **Base Station USB** Sequence #: **28**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB **120V 60Hz**
 S/N: 001

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|------------|--------------------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | NADP-90KBA | CN-0C2894-48661-57S-FZJT |
| USB Mouse | Logitech | M-UV94 | LZB42151642 |
| Monitor | ACER | 7277e | 9170602001 |
| Print/Scan/Copy | HP | C5316A | MY8C4C207Y |

Test Conditions / Notes:

Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Note 1) For this test, only the Base Station USB in the continuous transmit mode is connected to the PC. Conducted emissions 0.15-30 MHz.

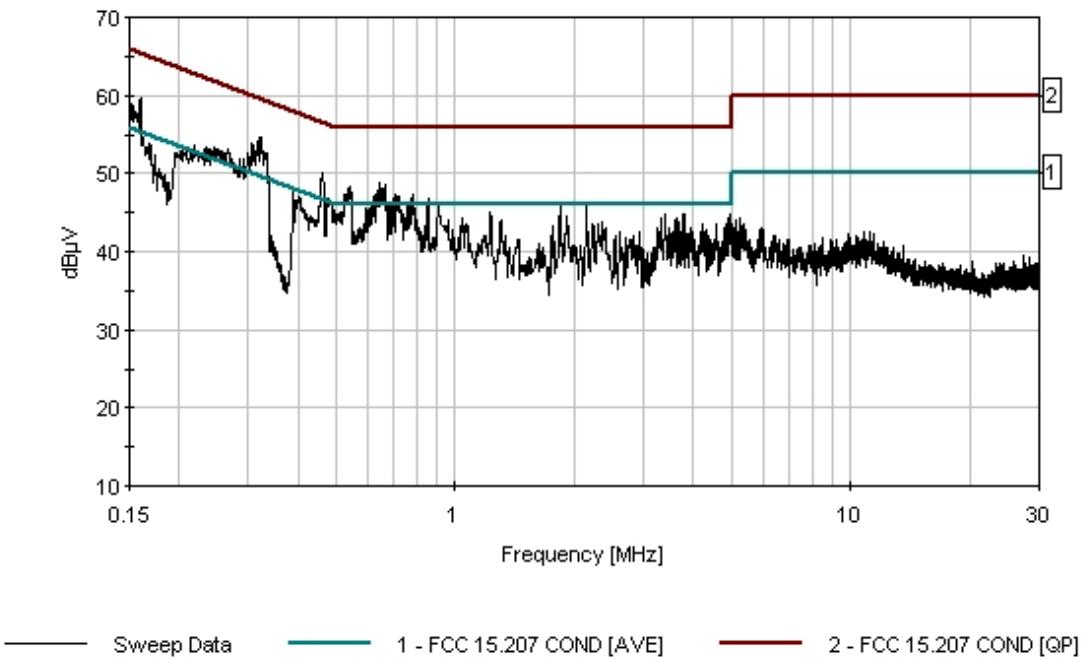
Transducer Legend:

| | |
|---------------------------------------|-----------------------------|
| T1=LISN - AN00493 - White - ELC "OUT" | T2=ANP02223 10dB Attenuator |
| T3=TTE HP Filter P05258 | T4=Cable P00880 |

| Measurement Data: | | Reading listed by margin. | | | | | | Test Lead: White | | | |
|--------------------------|-----------------|---------------------------|----------|----------|----------|----------|---------------|--------------------|--------------------|--------------|--------------|
| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | T4 dB | Dist Table | Corr dB μ V | Spec dB μ V | Margin dB | Polar Ant |
| 1 | 461.000k Ave | 34.5 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 44.6 | 46.7 | -2.1 | White |
| ^ | 464.150k | 40.0 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 50.1 | 46.6 | +3.5 | White |
| 3 | 2.353M | 33.6 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 43.9 | 46.0 | -2.1 | White |
| 4 | 3.675M | 33.5 | +0.4 | +9.8 | +0.1 | +0.1 | +0.0 | 43.9 | 46.0 | -2.1 | White |
| 5 | 173.270k | 40.1 | +0.4 | +9.8 | +2.0 | +0.1 | +0.0 | 52.4 | 54.8 | -2.4 | White |
| 6 | 2.221M | 33.2 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 43.5 | 46.0 | -2.5 | White |

| | | | | | | | | | | | |
|----|-----------------|------|------|------|------|------|------|------|------|-------|-------|
| 7 | 4.233M | 33.1 | +0.4 | +9.8 | +0.1 | +0.1 | +0.0 | 43.5 | 46.0 | -2.5 | White |
| 8 | 4.586M | 33.0 | +0.4 | +9.8 | +0.1 | +0.2 | +0.0 | 43.5 | 46.0 | -2.5 | White |
| 9 | 1.766M | 33.1 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 43.4 | 46.0 | -2.6 | White |
| 10 | 849.000k Ave | 29.6 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 39.8 | 46.0 | -6.2 | White |
| ^ | 853.930k | 36.7 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 46.9 | 46.0 | +0.9 | White |
| 12 | 320.000k Ave | 32.4 | +0.3 | +9.8 | +0.2 | +0.1 | +0.0 | 42.8 | 49.7 | -6.9 | White |
| ^ | 322.346k | 44.3 | +0.3 | +9.8 | +0.2 | +0.1 | +0.0 | 54.7 | 49.6 | +5.1 | White |
| 14 | 2.153M Ave | 27.4 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 37.7 | 46.0 | -8.3 | White |
| ^ | 2.153M | 35.5 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 45.8 | 46.0 | -0.2 | White |
| 16 | 779.000k Ave | 26.9 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 37.1 | 46.0 | -8.9 | White |
| ^ | 780.000k | 37.2 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 47.4 | 46.0 | +1.4 | White |
| 18 | 706.000k Ave | 25.9 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 36.0 | 46.0 | -10.0 | White |
| ^ | 705.581k | 37.1 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 47.2 | 46.0 | +1.2 | White |
| 20 | 914.000k Ave | 25.5 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 35.7 | 46.0 | -10.3 | White |
| ^ | 909.771k | 35.5 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 45.7 | 46.0 | -0.3 | White |
| 22 | 1.835M Ave | 25.2 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 35.5 | 46.0 | -10.5 | White |
| ^ | 1.838M | 35.7 | +0.3 | +9.7 | +0.1 | +0.2 | +0.0 | 46.0 | 46.0 | +0.0 | White |
| 24 | 389.000k Ave | 27.1 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 37.3 | 48.1 | -10.8 | White |
| ^ | 388.522k | 37.3 | +0.3 | +9.7 | +0.0 | +0.2 | +0.0 | 47.5 | 48.1 | -0.6 | White |
| 26 | 160.000k Ave | 27.3 | +0.4 | +9.8 | +3.1 | +0.1 | +0.0 | 40.7 | 55.5 | -14.8 | White |
| ^ | 160.181k | 46.2 | +0.4 | +9.8 | +3.1 | +0.1 | +0.0 | 59.6 | 55.5 | +4.1 | White |
| 28 | 646.000k Ave | 20.3 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 30.4 | 46.0 | -15.6 | White |
| ^ | 645.950k | 38.6 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 48.7 | 46.0 | +2.7 | White |
| 30 | 539.000k Ave | 19.5 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 29.6 | 46.0 | -16.4 | White |
| ^ | 539.052k | 38.2 | +0.3 | +9.7 | +0.0 | +0.1 | +0.0 | 48.3 | 46.0 | +2.3 | White |

CKC Laboratories, Inc. Date: 9/8/2006 Time: 00:26:43 CrossBow WO#: 85583
FCC 15.207 COND [AVE] Test Lead: White 120V 60Hz Sequence#: 28
AC adapter for Host PC is connected to LISN.



Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.209 9k-30M**
 Work Order #: **85583** Date: **9/7/2006**
 Test Type: **Radiated Scan/Maximized Emissions** Time: **22:47:00**
 Equipment: **Base Station USB** Sequence#: **25**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB
 S/N: 001, 002

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| Base Station USB | Crossbow Technology Inc. | Base Station USB | 002 |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|------------|--------------------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | NADP-90KBA | CN-0C2894-48661-57S-FZJT |
| USB Mouse | Logitech | M-UV94 | LZB42151642 |
| Monitor | ACER | 7277e | 9170602001 |
| Print/Scan/Copy | HP | C5316A | MY8C4C207Y |

Test Conditions / Notes:

Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Note: AC adapter, monitor, print/scan/copy were unplugged during this test to prevent unwanted magnetic fields. Radiated emissions 9 kHz-30 MHz. No emissions were found from the EUT at this frequency range.

Transducer Legend:

| | |
|----------------------------------|-------------------------------|
| T1=Cable P05299 2' RG214 N-N | T2=Cable P05300 12' RG214 N-N |
| T3=Mag Loop - AN 00432- 9kHz-30M | |

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

| # | Freq MHz | Rdng dB μ V | T1 dB | T2 dB | T3 dB | Dist Table | Corr dB μ V/m | Spec dB μ V/m | Margin dB | Polar Ant |
|---|-------------|--------------------|----------|----------|----------|---------------|-----------------------|----------------------|--------------|--------------|
| 1 | 60.660k | 59.7 | +0.1 | +0.1 | +9.8 | +0.0 -9 | 69.7 Not from EUTs | 71.9 | -2.2 100 | Horiz |
| 2 | 60.665k | 54.9 | +0.1 | +0.1 | +9.8 | +0.0 46 | 64.9 Not from EUTs | 71.9 300 | -7.0 | Vert |

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.209 30-1000 MHz**
 Work Order #: **85583** Date: **9/7/2006**
 Test Type: **Maximized Emissions** Time: **21:56:08**
 Equipment: **Base Station USB** Sequence #: **24**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB
 S/N: 001, 002

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| Base Station USB | Crossbow Technology Inc. | Base Station USB | 002 |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|------------|--------------------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | NADP-90KBA | CN-0C2894-48661-57S-FZJT |
| USB Mouse | Logitech | M-UV94 | LZB42151642 |
| Monitor | ACER | 7277e | 9170602001 |
| Print/Scan/Copy | HP | C5316A | MY8C4C207Y |

Test Conditions / Notes:

Equipment located on test table 80 cm above ground, set up in accordance with ANSI C63.4. One Base Station USB is continuously transmitting, powered by USB cable connected to PC. The other Base Station USB is continuously receiving the signals and sending the data to the PC over the USB cable. XSniffer software on the PC is monitoring the data received, displaying it on the monitor, and saving it to a file on the desktop. The Base Stations are put in the wall mount vertical polarization, previously determined as worst case on the transmit frequencies. Radiated emissions 30-1000 MHz.

Transducer Legend:

| | |
|---------------------------------------|-------------------------------|
| T1=0852-Bi-Log Antenna | T2=Cable P05296 25' RG214 N-N |
| T3=Cable P05299 2' RG214 N-N | T4=Cable P05300 12' RG214 N-N |
| T5=Amp Cal.HP-8447F OPT H64- AN 00501 | |

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

| # | Freq | Rdng | T1 T5 | T2 | T3 | T4 | Dist | Corr | Spec | Margin | Polar |
|---|----------|------------|----------|------|------|------|-------|--------------|--------------|--------|-------|
| | MHz | dB μ V | dB | dB | dB | dB | Table | dB μ V/m | dB μ V/m | dB | Ant |
| 1 | 433.027M | 54.0 | +16.4 | +1.1 | +0.1 | +0.5 | +0.0 | 45.7 | 46.0 | -0.3 | Vert |
| | QP | | -26.4 | | | | 357 | | Host PC | | 116 |
| ^ | 433.042M | 56.1 | +16.4 | +1.1 | +0.1 | +0.5 | +0.0 | 47.8 | 46.0 | +1.8 | Vert |
| | | | -26.4 | | | | 357 | | | | 116 |
| 3 | 431.418M | 53.9 | +16.3 | +1.1 | +0.1 | +0.5 | +0.0 | 45.4 | 46.0 | -0.6 | Vert |
| | QP | | -26.5 | | | | 350 | | Host PC | | 99 |
| ^ | 431.429M | 56.3 | +16.3 | +1.1 | +0.1 | +0.5 | +0.0 | 47.8 | 46.0 | +1.8 | Vert |
| | | | -26.5 | | | | 350 | | | | 99 |

| | | | | | | | | | | | |
|----|----------|------|-------|------|------|------|------|------|---------|------|-------|
| 5 | 799.582M | 46.5 | +21.3 | +1.6 | +0.2 | +0.8 | +0.0 | 43.5 | 46.0 | -2.5 | Vert |
| | QP | | -26.9 | | | | 200 | | Host PC | | 153 |
| ^ | 799.563M | 49.7 | +21.3 | +1.6 | +0.2 | +0.8 | +0.0 | 46.7 | 46.0 | +0.7 | Vert |
| | | | -26.9 | | | | 200 | | | | 153 |
| 7 | 34.270M | 45.0 | +16.2 | +0.3 | +0.1 | +0.2 | +0.0 | 35.7 | 40.0 | -4.3 | Vert |
| | QP | | -26.1 | | | | 270 | | Monitor | | 99 |
| ^ | 34.277M | 48.1 | +16.2 | +0.3 | +0.1 | +0.2 | +0.0 | 38.8 | 40.0 | -1.2 | Vert |
| | | | -26.1 | | | | 270 | | | | 99 |
| 9 | 36.066M | 44.4 | +15.4 | +0.3 | +0.1 | +0.2 | +0.0 | 34.3 | 40.0 | -5.7 | Vert |
| | QP | | -26.1 | | | | 79 | | Monitor | | 99 |
| ^ | 36.045M | 47.2 | +15.4 | +0.3 | +0.1 | +0.2 | +0.0 | 37.1 | 40.0 | -2.9 | Vert |
| | | | -26.1 | | | | 79 | | | | 99 |
| 11 | 34.689M | 43.8 | +16.0 | +0.3 | +0.1 | +0.2 | +0.0 | 34.3 | 40.0 | -5.7 | Vert |
| | QP | | -26.1 | | | | 143 | | Monitor | | 99 |
| ^ | 34.698M | 47.2 | +16.0 | +0.3 | +0.1 | +0.2 | +0.0 | 37.7 | 40.0 | -2.3 | Vert |
| | | | -26.1 | | | | 143 | | | | 99 |
| 13 | 36.548M | 44.3 | +15.2 | +0.3 | +0.1 | +0.2 | +0.0 | 34.0 | 40.0 | -6.0 | Vert |
| | QP | | -26.1 | | | | 80 | | Monitor | | 100 |
| ^ | 36.504M | 47.7 | +15.2 | +0.3 | +0.1 | +0.2 | +0.0 | 37.4 | 40.0 | -2.6 | Vert |
| | | | -26.1 | | | | 80 | | | | 99 |
| 15 | 35.701M | 43.6 | +15.6 | +0.3 | +0.1 | +0.2 | +0.0 | 33.7 | 40.0 | -6.3 | Vert |
| | QP | | -26.1 | | | | 80 | | Monitor | | 99 |
| ^ | 35.695M | 46.8 | +15.6 | +0.3 | +0.1 | +0.2 | +0.0 | 36.9 | 40.0 | -3.1 | Vert |
| | | | -26.1 | | | | 80 | | | | 99 |
| 17 | 366.415M | 49.0 | +14.6 | +1.1 | +0.2 | +0.6 | +0.0 | 39.5 | 46.0 | -6.5 | Vert |
| | QP | | -26.0 | | | | 340 | | Host PC | | 147 |
| ^ | 366.404M | 51.3 | +14.6 | +1.1 | +0.2 | +0.6 | +0.0 | 41.8 | 46.0 | -4.2 | Vert |
| | | | -26.0 | | | | 340 | | | | 147 |
| 19 | 50.162M | 50.0 | +8.4 | +0.4 | +0.1 | +0.2 | +0.0 | 33.0 | 40.0 | -7.0 | Vert |
| | QP | | -26.1 | | | | 261 | | Monitor | | 99 |
| ^ | 50.194M | 56.3 | +8.4 | +0.4 | +0.1 | +0.2 | +0.0 | 39.3 | 40.0 | -0.7 | Vert |
| | | | -26.1 | | | | 261 | | | | 99 |
| 21 | 119.986M | 48.9 | +11.2 | +0.6 | +0.1 | +0.4 | +0.0 | 35.4 | 43.5 | -8.1 | Horiz |
| | QP | | -25.8 | | | | 275 | | | | 153 |
| ^ | 119.991M | 50.1 | +11.2 | +0.6 | +0.1 | +0.4 | +0.0 | 36.6 | 43.5 | -6.9 | Horiz |
| | | | -25.8 | | | | 275 | | | | 154 |
| 23 | 151.512M | 48.8 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 34.9 | 43.5 | -8.6 | Horiz |
| | QP | | -25.7 | | | | 197 | | | | 190 |
| 24 | 151.512M | 48.8 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 34.9 | 43.5 | -8.6 | Horiz |
| | QP | | -25.7 | | | | 204 | | | | 184 |
| ^ | 151.514M | 50.5 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 36.6 | 43.5 | -6.9 | Horiz |
| | | | -25.7 | | | | 204 | | | | 184 |
| ^ | 151.513M | 50.4 | +10.6 | +0.7 | +0.1 | +0.4 | +0.0 | 36.5 | 43.5 | -7.0 | Horiz |
| | | | -25.7 | | | | 197 | | | | 190 |
| 27 | 186.323M | 50.7 | +8.6 | +0.7 | +0.1 | +0.4 | +0.0 | 34.9 | 43.5 | -8.6 | Horiz |
| | | | -25.6 | | | | 265 | | | | 188 |
| 28 | 30.094M | 38.8 | +17.9 | +0.2 | +0.0 | +0.1 | +0.0 | 31.0 | 40.0 | -9.0 | Vert |
| | QP | | -26.0 | | | | 271 | | Monitor | | 99 |
| ^ | 30.102M | 43.9 | +17.9 | +0.2 | +0.0 | +0.1 | +0.0 | 36.1 | 40.0 | -3.9 | Vert |
| | | | -26.0 | | | | 271 | | | | 99 |

| | | | | | | | | | | | |
|----|----------|------|----------------|------|------|------|-------------|------|------|-------|--------------|
| 30 | 233.372M | 48.9 | +11.2 -25.4 | +0.8 | +0.1 | +0.4 | +0.0 312 | 36.0 | 46.0 | -10.0 | Horiz 135 |
| 31 | 174.140M | 47.0 | +9.0 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 7 | 31.6 | 43.5 | -11.9 | Vert 109 |
| ^ | 174.151M | 56.0 | +9.0 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 7 | 40.6 | 43.5 | -2.9 | Vert 109 |
| 33 | 174.138M | 46.0 | +9.0 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 341 | 30.6 | 43.5 | -13.0 | Horiz 123 |
| ^ | 174.095M | 55.9 | +9.1 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 341 | 40.6 | 43.5 | -2.9 | Horiz 123 |
| 35 | 172.781M | 45.1 | +9.2 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 343 | 29.9 | 43.5 | -13.6 | Horiz 149 |
| ^ | 172.849M | 51.2 | +9.2 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 343 | 36.0 | 43.5 | -7.5 | Horiz 149 |
| 37 | 162.207M | 44.0 | +10.0 -25.7 | +0.7 | +0.1 | +0.4 | +0.0 91 | 29.5 | 43.5 | -14.0 | Horiz 194 |
| ^ | 162.232M | 51.3 | +10.0 -25.7 | +0.7 | +0.1 | +0.4 | +0.0 91 | 36.8 | 43.5 | -6.7 | Horiz 194 |
| 39 | 185.659M | 44.3 | +8.6 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 265 | 28.5 | 43.5 | -15.0 | Horiz 188 |
| ^ | 185.744M | 54.8 | +8.6 -25.6 | +0.7 | +0.1 | +0.4 | +0.0 265 | 39.0 | 43.5 | -4.5 | Horiz 188 |
| 41 | 126.006M | 40.6 | +11.2 -25.7 | +0.6 | +0.1 | +0.4 | +0.0 -10 | 27.2 | 43.5 | -16.3 | Vert 99 |
| ^ | 126.036M | 53.3 | +11.2 -25.7 | +0.6 | +0.1 | +0.4 | +0.0 -10 | 39.9 | 43.5 | -3.6 | Vert 99 |

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.209 1-26 GHz**
 Work Order #: **85583** Date: **9/1/2006**
 Test Type: **Radiated Scan/Maximized** Time: **15:13:36**
 Equipment: **Base Station USB** Sequence #: **7**
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB
 S/N: 001

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|--------------|----------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | PA-1650-0502 | 71615-621-64FD |

Test Conditions / Notes:

Located at center of test table 80 cm above ground. Continuous operation. Transmitting on channel as noted. Ch 11=low, Ch 18=mid, Ch 26=hi. CW transmit mode. RBW=1 MHz. Fundamentals not recorded. Radiated emissions 1-26 GHz.

Transducer Legend:

| | |
|-------------------------|--|
| T1=ANP05200 1-40GHz | T2=ANP04241 HF-Heliax Cable |
| T3=P05138 HF Cable 25ft | T4=Horn Antenna AN02061 sn1064 (Fremont) |
| T5=HP-83017A, A/N 00785 | |

| Measurement Data: Reading listed by margin. Test Distance: 3 Meters | | | | | | | | | | | |
|---|-----------|------|------------|------|------|-------|-------|--------------|-----------------|--------|-------|
| # | Freq | Rdng | T1 | T2 | T3 | T4 | Dist | Corr | Spec | Margin | Polar |
| | | | dB μ V | dB | dB | dB | Table | dB μ V/m | dB μ V/m | dB | Ant |
| 1 | 4880.114M | 51.7 | +1.8 | +0.6 | +3.4 | +32.5 | +0.0 | 52.9 | 54.0 | -1.1 | Vert |
| | Ave | | -37.1 | | | | 50 | | mid | | 123 |
| ^ | 4880.075M | 52.9 | +1.8 | +0.6 | +3.4 | +32.5 | +0.0 | 54.1 | 54.0 | +0.1 | Vert |
| | | | -37.1 | | | | 50 | | mid | | 123 |
| ^ | 4880.072M | 50.0 | +1.8 | +0.6 | +3.4 | +32.5 | +0.0 | 51.2 | 54.0 | -2.8 | Vert |
| | | | -37.1 | | | | 336 | | MID, wall mount | | 122 |
| | | | | | | | | | vertical | | |
| 4 | 4880.202M | 51.6 | +1.8 | +0.6 | +3.4 | +32.5 | +0.0 | 52.8 | 54.0 | -1.2 | Horiz |
| | Ave | | -37.1 | | | | 74 | | MID, wall mount | | 129 |
| | | | | | | | | | vertical. | | |
| ^ | 4880.109M | 53.6 | +1.8 | +0.6 | +3.4 | +32.5 | +0.0 | 54.8 | 54.0 | +0.8 | Horiz |
| | | | -37.1 | | | | 74 | | MID, wall mount | | 129 |
| | | | | | | | | | vertical. | | |
| 6 | 4960.075M | 46.9 | +1.8 | +0.5 | +3.4 | +32.7 | +0.0 | 48.3 | 54.0 | -5.7 | Vert |
| | | | -37.0 | | | | 124 | | hi | | 130 |
| 7 | 4880.015M | 46.4 | +1.8 | +0.6 | +3.4 | +32.5 | +0.0 | 47.6 | 54.0 | -6.4 | Horiz |
| | | | -37.1 | | | | 347 | | mid | | 149 |

| | | | | | | | | | | | |
|----|-----------|------|-------|------|------|-------|------|------|------------------|-------|-------|
| 8 | 4810.100M | 46.6 | +1.7 | +0.7 | +3.4 | +32.3 | +0.0 | 47.6 | 54.0 | -6.4 | Vert |
| | Ave | | -37.1 | | | | 100 | | low | | 136 |
| ^ | 4810.075M | 48.6 | +1.7 | +0.7 | +3.4 | +32.3 | +0.0 | 49.5 | 54.0 | -4.5 | Vert |
| | | | -37.1 | | | | 100 | | low | | 136 |
| 10 | 9620.015M | 34.0 | +2.5 | +1.5 | +4.9 | +38.1 | +0.0 | 44.7 | 54.0 | -9.3 | Vert |
| | | | -36.3 | | | | 269 | | low, noise floor | | 136 |
| 11 | 4810.075M | 43.1 | +1.7 | +0.7 | +3.4 | +32.3 | +0.0 | 44.1 | 54.0 | -9.9 | Horiz |
| | | | -37.1 | | | | 94 | | low | | 138 |
| 12 | 7215.000M | 35.1 | +2.2 | +1.2 | +4.6 | +36.7 | +0.0 | 43.0 | 54.0 | -11.0 | Vert |
| | | | -36.8 | | | | 113 | | low, noise floor | | 136 |
| 13 | 4960.075M | 40.9 | +1.8 | +0.5 | +3.4 | +32.7 | +0.0 | 42.3 | 54.0 | -11.7 | Horiz |
| | | | -37.0 | | | | 144 | | hi | | 150 |

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.247 RF Power**
 Work Order #: **85583** Date: 8/31/2006
 Test Type: **Maximized Emissions** Time: 14:35:12
 Equipment: **Base Station USB** Sequence#: 17
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB
 S/N: 001

Equipment Under Test (* = EUT):

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|--------------|----------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | PA-1650-0502 | 71615-621-64FD |

Test Conditions / Notes:

MODE 1. Located on wireless bench. Continuous operation. Transmitting on channel as noted. Ch 11=low, Ch 18=mid, Ch 26=hi. EUT antenna output port is directly connected to spectrum analyzer. CW transmit mode. RBW=3 MHz. Fundamentals.

Transducer Legend:

| |
|--|
| |
|--|

| # | Freq MHz | Reading listed by margin. | | | | Test Distance: None | | | | |
|---|-------------|---------------------------|----|----|----|---------------------|-------------|-------------|--------------|--------------|
| | | Rdng dBm | dB | dB | dB | Dist Table | Corr dBm | Spec dBm | Margin dB | Polar Ant |
| 1 | 2439.700M | -7.0 | | | | +0.0 | -7.0 | 30.0 | -37.0 | None |
| | | | | | | | | mid | | |
| 2 | 2405.150M | -7.1 | | | | +0.0 | -7.1 | 30.0 | -37.1 | None |
| | | | | | | | | lo | | |
| 3 | 2480.310M | -7.6 | | | | +0.0 | -7.6 | 30.0 | -37.6 | None |
| | | | | | | | | hi | | |

Test Location: CKC Laboratories, Inc. • 1120 Fulton Place • Fremont, CA 94539 • 510-249-1170

Customer: **Crossbow Technology Inc.**
 Specification: **FCC 15.247 Spurious Conducted**
 Work Order #: **85583** Date: 8/30/2006
 Test Type: **Maximized Emissions** Time: 10:34:58
 Equipment: **Base Station USB** Sequence#: 11
 Manufacturer: Crossbow Technology Inc. Tested By: Art Rice
 Model: Base Station USB
 S/N: 001

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

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------------------|-------------------------|-----|
| Base Station USB* | Crossbow Technology Inc. | Base Station USB | 001 |
| RF Module | Crossbow Technology Inc. | MPR2400, P/N 8350-334-2 | n/a |
| USB Module | Crossbow Technology Inc. | P/N 8350-0347-02 | n/a |

Support Devices:

| Function | Manufacturer | Model # | S/N |
|-------------------|--------------|--------------|----------------|
| Laptop PC | Dell | PP11L | DGZV9B1 |
| AC Adapter for PC | Dell | PA-1650-0502 | 71615-621-64FD |

Test Conditions / Notes:

MODE 1. Located on wireless bench. Continuous operation. Transmitting on channel as noted. Ch 11=low, Ch 18=mid, Ch 26=hi. EUT antenna output port is directly connected to spectrum analyzer. CW transmit mode. RBW=100 kHz. Spurious Radiated emissions 30 MHz-26 GHz.

Transducer Legend:

| <i>Measurement Data:</i> | | Reading listed by margin. | | | | | Test Distance: None | | | | |
|---------------------------------|-------------|---------------------------|---------------|-------------|-------------|--------------|---------------------|--|--|--|--|
| # | Freq MHz | Rdng dBm | Dist Table | Corr dBm | Spec dBm | Margin dB | Polar Ant | | | | |
| 1 | 4809.000M | -49.3 | +0.0 | -49.3 | -28.3 | -21.0 | None | | | | |
| | | | | | hi | | | | | | |
| 2 | 4878.000M | -50.2 | +0.0 | -50.2 | -28.3 | -21.9 | None | | | | |
| | | | | | mid | | | | | | |
| 3 | 4958.000M | -53.8 | +0.0 | -53.8 | -28.3 | -25.5 | None | | | | |
| | | | | | hi | | | | | | |
| 4 | 2180.000M | -63.6 | +0.0 | -63.6 | -28.3 | -35.3 | None | | | | |
| | | | | | hi | | | | | | |
| 5 | 376.800M | -63.8 | +0.0 | -63.8 | -28.3 | -35.5 | None | | | | |
| | | | | | hi | | | | | | |
| 6 | 2633.300M | -64.0 | +0.0 | -64.0 | -28.3 | -35.7 | None | | | | |
| | | | | | hi | | | | | | |
| 7 | 2629.400M | -64.8 | +0.0 | -64.8 | -28.3 | -36.5 | None | | | | |
| | | | | | hi | | | | | | |
| 8 | 2327.000M | -64.9 | +0.0 | -64.9 | -28.3 | -36.6 | None | | | | |
| | | | | | hi | | | | | | |
| 9 | 2625.500M | -65.5 | +0.0 | -65.5 | -28.3 | -37.2 | None | | | | |
| | | | | | hi | | | | | | |
| 10 | 2261.900M | -65.6 | +0.0 | -65.6 | -28.3 | -37.3 | None | | | | |
| | | | | | hi | | | | | | |

| | | | | | | | |
|----|-----------|-------|------|-------|-------|-------|------|
| 11 | 1431.000M | -65.8 | +0.0 | -65.8 | -28.3 | -37.5 | None |
| | | | | hi | | | |
| 12 | 2257.700M | -66.1 | +0.0 | -66.1 | -28.3 | -37.8 | None |
| | | | | hi | | | |
| 13 | 2550.600M | -66.2 | +0.0 | -66.2 | -28.3 | -37.9 | None |
| | | | | hi | | | |
| 14 | 2416.900M | -67.3 | +0.0 | -67.3 | -28.3 | -39.0 | None |
| | | | | hi | | | |
| 15 | 367.100M | -67.3 | +0.0 | -67.3 | -28.3 | -39.0 | None |
| | | | | hi | | | |
| 16 | 306.500M | -67.8 | +0.0 | -67.8 | -28.3 | -39.5 | None |
| | | | | mid | | | |
| 17 | 2342.000M | -68.3 | +0.0 | -68.3 | -28.3 | -40.0 | None |
| | | | | hi | | | |
| 18 | 294.300M | -68.4 | +0.0 | -68.4 | -28.3 | -40.1 | None |
| | | | | hi | | | |
| 19 | 2377.800M | -68.5 | +0.0 | -68.5 | -28.3 | -40.2 | None |
| | | | | mid | | | |
| 20 | 1385.000M | -69.0 | +0.0 | -69.0 | -28.3 | -40.7 | None |
| | | | | hi | | | |
| 21 | 456.800M | -69.5 | +0.0 | -69.5 | -28.3 | -41.2 | None |
| | | | | mid | | | |
| 22 | 2114.400M | -69.5 | +0.0 | -69.5 | -28.3 | -41.2 | None |
| | | | | hi | | | |
| 23 | 439.800M | -69.9 | +0.0 | -69.9 | -28.3 | -41.6 | None |
| | | | | hi | | | |
| 24 | 289.500M | -71.0 | +0.0 | -71.0 | -28.3 | -42.7 | None |
| | | | | mid | | | |
| 25 | 449.500M | -71.2 | +0.0 | -71.2 | -28.3 | -42.9 | None |
| | | | | mid | | | |
| 26 | 376.800M | -71.3 | +0.0 | -71.3 | -28.3 | -43.0 | None |
| | | | | mid | | | |