



Engineering and Testing for EMC and Safety Compliance

CLASS II PERMISSIVE CHANGE APPLICATION  
FCC PART 15

|                                                                                                                                                                                                                                                      |                                                                                         |                                                                                                                                                                                             |                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
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| <b>FCC ID:</b>                                                                                                                                                                                                                                       | BV8MTT-A025                                                                             | <b>FRN:</b>                                                                                                                                                                                 | 0006-633-010               |
| <b>PLAT FORM:</b>                                                                                                                                                                                                                                    | N/A                                                                                     | <b>RTL WO NUMBER:</b>                                                                                                                                                                       | 2004100                    |
| <b>MODEL(S):</b>                                                                                                                                                                                                                                     | OpenSky SkyLink ISM Radio                                                               | <b>RTL QUOTE NUMBER:</b>                                                                                                                                                                    | QRTL04-195                 |
| <b>TEST REPORT DATE:</b>                                                                                                                                                                                                                             | July 20, 2004                                                                           |                                                                                                                                                                                             |                            |
| <b>FCC Classification:</b>                                                                                                                                                                                                                           | DTS – Digital Transmission System                                                       |                                                                                                                                                                                             |                            |
| <b>FCC Rule Part(s):</b>                                                                                                                                                                                                                             | Part 15.247: Operation in the bands 902-928 MHz, 2400-2483.5 MHz, and 5725 and 5850 MHz |                                                                                                                                                                                             |                            |
| <b>Frequency Range (MHz)</b>                                                                                                                                                                                                                         | <b>Power (W)</b>                                                                        | <b>Frequency Tolerance</b>                                                                                                                                                                  | <b>Emission Designator</b> |
| 2412-2462                                                                                                                                                                                                                                            | 0.26                                                                                    | N/A                                                                                                                                                                                         | N/A                        |
| 2412-2462                                                                                                                                                                                                                                            | 0.042                                                                                   | N/A                                                                                                                                                                                         | N/A                        |

We, the undersigned, hereby declare that the equipment tested and referenced in this report conforms to the identified standard(s) as described in this test report. No modifications were made to the equipment during testing in order to achieve compliance with these standards.

Furthermore, there was no deviation from, additions to or exclusions from the FCC Part 2, FCC Part 15, ANSI C63.4.

Signature: 

Date: July 20, 2004

Typed/Printed Name: Desmond A. Fraser

Position: President

Signature: 

Date: July 20, 2004

Typed/Printed Name: Daniel W. Baltzell

Position: EMC Test Engineer

## Table of Contents

|          |                                                                                               |           |
|----------|-----------------------------------------------------------------------------------------------|-----------|
| <b>1</b> | <b>GENERAL INFORMATION .....</b>                                                              | <b>4</b>  |
| 1.1      | SCOPE .....                                                                                   | 4         |
| 1.2      | TEST FACILITY .....                                                                           | 4         |
| 1.3      | RELATED SUBMITAL(S)/GRANT(S).....                                                             | 4         |
| 1.4      | DESCRIPTION OF CHANGE IN DEVICE.....                                                          | 4         |
| <b>2</b> | <b>EQUIPMENT INFORMATION .....</b>                                                            | <b>5</b>  |
| 2.1      | JUSTIFICATION.....                                                                            | 5         |
| 2.2      | EXERCISING THE EUT .....                                                                      | 5         |
| 2.3      | TEST SYSTEM DETAILS .....                                                                     | 5         |
| 2.4      | CONFIGURATION OF TESTED SYSTEM.....                                                           | 6         |
| <b>3</b> | <b>FCC PART 2 §2.1046 (A): RF POWER OUTPUT: CONDUCTED .....</b>                               | <b>7</b>  |
| 3.1      | RF POWER OUTPUT: CONDUCTED TEST PROCEDURE.....                                                | 7         |
| 3.2      | RF POWER OUTPUT: CONDUCTED TEST DATA.....                                                     | 7         |
| 3.3      | TEST EQUIPMENT .....                                                                          | 8         |
| <b>4</b> | <b>FCC RULES AND REGULATIONS PART 2 §2.1051: SPURIOUS EMISSIONS AT ANTENNA TERMINALS.....</b> | <b>9</b>  |
| 4.1      | RADIATED SPURIOUS EMISSION LIMITS TEST PROCEDURE.....                                         | 9         |
| 4.2      | TEST DATA .....                                                                               | 9         |
| 4.3      | TEST EQUIPMENT .....                                                                          | 14        |
| <b>5</b> | <b>CONCLUSION .....</b>                                                                       | <b>15</b> |

## TABLE INDEX

|             |                                                                                |    |
|-------------|--------------------------------------------------------------------------------|----|
| TABLE 2-1:  | EQUIPMENT UNDER TEST (EUT).....                                                | 5  |
| TABLE 3-1:  | CARRIER OUTPUT POWER FOR ANTENNAS UNDER 21.3 DBI GAIN.....                     | 7  |
| TABLE 3-2:  | CARRIER OUTPUT POWER FOR OVER 21.3 DBI DIRECTIONAL ANTENNA.....                | 7  |
| TABLE 3-3:  | RATED POWER.....                                                               | 8  |
| TABLE 4-1:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 1 – 2412 MHZ SP2 ANTENNA (21.3 DBI).....  | 9  |
| TABLE 4-2:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 7 – 2442 MHZ SP2 ANTENNA (21.3 DBI).....  | 10 |
| TABLE 4-3:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 11– 2462 MHZ SP2 ANTENNA (21.3 DBI).....  | 10 |
| TABLE 4-4:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 1 – 2412 MHZ GRID ANTENNA (24.5 DBI)..... | 11 |
| TABLE 4-5:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 7 – 2442 MHZ GRID ANTENNA (24.5 DBI)..... | 11 |
| TABLE 4-6:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 11– 2462 MHZ GRID ANTENNA (24.5 DBI)..... | 12 |
| TABLE 4-7:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 1 – 2412 MHZ OMNI ANTENNA (13.5 DBI)..... | 12 |
| TABLE 4-8:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 7 – 2442 MHZ OMNI ANTENNA (13.5 DBI)..... | 13 |
| TABLE 4-9:  | CONDUCTED SPURIOUS EMISSIONS CHANNEL 11– 2462 MHZ OMNI ANTENNA (13.5 DBI)..... | 13 |
| TABLE 4-10: | TEST EQUIPMENT: SPURIOUS EMISSIONS AT ANTENNA TERMINALS.....                   | 14 |

## APPENDIX INDEX

|             |                             |    |
|-------------|-----------------------------|----|
| APPENDIX A: | RF EXPOSURE COMPLIANCE..... | 16 |
| APPENDIX B: | AGENCY AUTHORIZATION.....   | 19 |
| APPENDIX C: | DESCRIPTION OF CHANGE.....  | 20 |
| APPENDIX D: | ANTENNA SPECIFICATIONS..... | 21 |
| APPENDIX E: | MANUAL.....                 | 22 |
| APPENDIX F: | TEST PHOTOGRAPHS.....       | 23 |
| APPENDIX G: | EXTERNAL PHOTOGRAPHS.....   | 29 |

## PHOTOGRAPH INDEX

|                |                                                           |    |
|----------------|-----------------------------------------------------------|----|
| PHOTOGRAPH 1:  | RADIATED EMISSIONS PARABOLIC ANTENNA FRONT VIEW.....      | 23 |
| PHOTOGRAPH 2:  | RADIATED EMISSIONS PARABOLIC ANTENNA BACK VIEW.....       | 24 |
| PHOTOGRAPH 3:  | RADIATED EMISSIONS GRID PARABOLIC ANTENNA FRONT VIEW..... | 25 |
| PHOTOGRAPH 4:  | RADIATED EMISSIONS GRID PARABOLIC ANTENNA BACK VIEW.....  | 26 |
| PHOTOGRAPH 5:  | RADIATED EMISSIONS OMNI PATCH ANTENNA FRONT VIEW.....     | 27 |
| PHOTOGRAPH 6:  | RADIATED EMISSIONS OMNI PATCH ANTENNA BACK VIEW.....      | 28 |
| PHOTOGRAPH 7:  | 13.5 DBI OMNI PATCH ANTENNA.....                          | 29 |
| PHOTOGRAPH 8:  | 13.5 DBI OMNI PATCH ANTENNA LABEL.....                    | 30 |
| PHOTOGRAPH 9:  | PARABOLIC ANTENNA FRONT VIEW.....                         | 31 |
| PHOTOGRAPH 10: | PARABOLIC ANTENNA BACK VIEW.....                          | 32 |
| PHOTOGRAPH 11: | PARABOLIC ANTENNA LABEL.....                              | 33 |
| PHOTOGRAPH 12: | GRID PARABOLIC ANTENNA FRONT VIEW.....                    | 34 |
| PHOTOGRAPH 13: | GRID PARABOLIC ANTENNA BACK VIEW.....                     | 35 |
| PHOTOGRAPH 14: | GRID PARABOLIC ANTENNA LABEL.....                         | 36 |

## **1 GENERAL INFORMATION**

### **1.1 SCOPE**

FCC Rules Part 15.247: Frequency Hopping, Direct Spread Spectrum and Hybrid Systems that are in operation within the bands of 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz.

A direct sequence (DS) system is a spread spectrum (SS) system in which the carrier has been modulated by a high speed spreading code and an information data stream. The high-speed code sequence dominates the “modulating function” and is the direct cause of the wide spreading of the transmitted signal.

### **1.2 TEST FACILITY**

The open area test site and conducted measurement facility used to collect the radiated data is located at 360 Herndon Parkway, Suite 1400, Herndon, Virginia 20170. This site has been fully described in a report and approved by the Federal Communications Commission to perform AC line conducted and radiated emissions testing (ANSI C63.4 2003).

### **1.3 RELATED SUBMITAL(S)/GRANT(S)**

This is a permissive change application for the original certification for FCC ID: BV8MTT-A025.

### **1.4 DESCRIPTION OF CHANGE IN DEVICE**

Three antenna options have been added, which are responsible for the radiated power. No changes were made to the modulation circuitry. The three antennas are a 24.5 dBi Grid Parabolic Dish Antenna, a 21.3 dBi Parabolic Antenna, and a 13.5 dBi Omni Patch Antenna.

## 2 EQUIPMENT INFORMATION

### 2.1 JUSTIFICATION

The power was measured as a conducted measurement with a power meter, and reflects the worst case data. The frequencies investigated were 2412, 2442, and 2462 MHz.

### 2.2 EXERCISING THE EUT

The OpenSky SkyLink ISM Radio network is a point-to-multi-point communication link between tower sites and cell sites, which transmits at a frequency within the range 2412-2462 MHz. The following frequencies were tested: 2412, 2442, and 2462 MHz, in three orthogonal planes, with the receiving antenna in both horizontal and vertical polarities, from 1 meter to 4 meters in height. The worst case data is submitted.

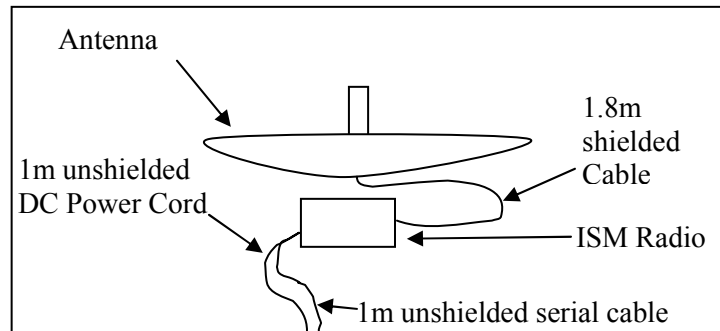
### 2.3 TEST SYSTEM DETAILS

The test sample was received on June 23, 2004. The FCC Identifiers for all equipment, plus descriptions of all cables used in the tested system are:

**TABLE 2-1: EQUIPMENT UNDER TEST (EUT)**

| PART                                          | MANUFACTURER                     | MODEL                  | SERIAL NUMBER | FCC ID          | CABLE DESCRIPTION                                  | RTL BARCODE |
|-----------------------------------------------|----------------------------------|------------------------|---------------|-----------------|----------------------------------------------------|-------------|
| 24.5 dBi<br>2.4 GHz Grid<br>Parabolic Antenna | Radio Waves,<br>Inc.             | G3-2.4                 | N/A           | N/A             | N/A                                                | 016031      |
| Parabolic Dish                                | M/A Com                          | N/A                    | N/A           | N/A             | N/A                                                | 016032      |
| 21.3 dBi<br>2.4 GHz Parabolic<br>Antenna      | Radio Waves,<br>Inc.             | SP2-2.4                | N/A           | N/A             | N/A                                                | 016027      |
| Parabolic Dish                                | M/A Com                          | N/A                    | N/A           | N/A             | N/A                                                | 016030      |
| 13.5 dBi<br>Omni Patch Antenna                | Winncom<br>Technologies<br>Corp. | WRO2400-<br>135H       | N/A           | N/A             | N/A                                                | 016026      |
| ISM Tower Top                                 | M/A Com                          | Opensky                | A400F0101092  | BV8MTT-<br>A025 | 1m<br>unshielded<br>I/O; 1m<br>unshielded<br>power | 016024      |
| Mini Mount                                    | M/A Com                          | N/A                    | N/A           | N/A             | N/A                                                | 016023      |
| Mini Mount                                    | M/A Com                          | N/A                    | N/A           | N/A             | N/A                                                | 016022      |
| Cable                                         | M/A Com                          | L4A-<br>PNMNF6-<br>USA | 35337         | N/A             | 1.8m<br>Shielded                                   | 016020      |

## 2.4 CONFIGURATION OF TESTED SYSTEM



**FIGURE 1: CONFIGURATION OF TESTED SYSTEM**

### 3 FCC PART 2 §2.1046 (A): RF POWER OUTPUT: CONDUCTED

#### 3.1 RF POWER OUTPUT: CONDUCTED TEST PROCEDURE

ANSI C63.4 1992: The EUT was connected to a coaxial attenuator having a 50  $\Omega$  load impedance.

15.247 (b)(4)(i): Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

#### 3.2 RF POWER OUTPUT: CONDUCTED TEST DATA

The following channels (in MHz) were tested: 2412 MHz, 2442 MHz, and 2462 MHz. The worst case output power (highest) levels are shown.

**TABLE 3-1: CARRIER OUTPUT POWER FOR ANTENNAS UNDER 21.3 dBI GAIN**

| Channel | Frequency (MHz) | Level (dBm) | Level (W) |
|---------|-----------------|-------------|-----------|
| 1       | 2412            | 24.2        | 0.26      |
| 7       | 2442            | 24.5        | 0.28      |
| 11      | 2462            | 23.7        | 0.23      |

\*Measurement accuracy: +/- 3%

**TABLE 3-2: CARRIER OUTPUT POWER FOR OVER 21.3 dBI DIRECTIONAL ANTENNA**

| Channel | Frequency (MHz) | Level (dBm) | Level (W) |
|---------|-----------------|-------------|-----------|
| 1       | 2412            | 16.2        | 0.042     |
| 7       | 2442            | 16.4        | 0.043     |
| 11      | 2462            | 15.7        | 0.037     |

\*Measurement accuracy: +/- 3%

**TABLE 3-3: RATED POWER**

| Rated Power (W) |                                    |
|-----------------|------------------------------------|
| High Power      | Low Power (for high gain antennas) |
| 0.26            | 0.042                              |

| Antenna                                    | Power Reduction                                    | Power Measured (dBm) | Limit (dBm) | Margin (dB) |
|--------------------------------------------|----------------------------------------------------|----------------------|-------------|-------------|
| 24.5 dBi<br>2.4 GHz Parabolic Grid Antenna | $24.5 - 6 = 18.5$<br>$18.5 / 3 = 6.2$ dB reduction | 16.4                 | 23.8        | -7.4        |
| 21.3 dBi<br>2.4GHz Parabolic Antenna       | $21.3 - 6 = 15.3$<br>$15.3 / 3 = 5.1$ dB reduction | 16.4                 | 24.9        | -8.5        |
| 13.5 dBi<br>Omni HP Antenna                | $13.5 - 6 = 7.5$<br>$7.5 / 3 = 2.5$ dB reduction   | 24.5                 | 27.5        | -3.0        |

**TEST PERSONNEL:**

DANIEL BALTZELL  
TEST ENGINEER



SIGNATURE

JUNE 23, 2004  
DATE OF TEST

**3.3 TEST EQUIPMENT**

| RTL Asset # | Manufacturer         | Model                    | Part Type                         | Serial Number | Calibration Due Date |
|-------------|----------------------|--------------------------|-----------------------------------|---------------|----------------------|
| 901184      | Agilent Technologies | E4416A                   | EPM-P Power Meter, single channel | GB41050573    | 7/30/04              |
| 901186      | Agilent Technologies | E9323A<br>(50 MHz-6 GHz) | Peak & Average Power Sensor       | US40410380    | 7/30/04              |



## 4 FCC RULES AND REGULATIONS PART 2 §2.1051: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

### 4.1 RADIATED SPURIOUS EMISSION LIMITS TEST PROCEDURE

Radiated Spurious Emissions applies to harmonics and spurious emissions that fall in the restricted and non-restricted bands. The restricted bands are listed in Part 15.205. The maximum permitted average field strength for the restricted band is listed in Part 15.209. The EUT was tested in the 3 orthogonal planes

### 4.2 TEST DATA

The following channels were investigated: 2412, 2442, and 2462 MHz. The worst case unwanted emissions channels are shown. The magnitude of emissions attenuated more than 20 dB below the FCC limit need not be recorded.

**TABLE 4-1: CONDUCTED SPURIOUS EMISSIONS CHANNEL 1 – 2412 MHZ SP2 ANTENNA (21.3 dBI)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2386.500        | 34                                  | 23.0                                   | 26.5                          | 49.5                     | 54.0           | -4.5        |
| 2386.792        | 33.2                                | 23.0                                   | 26.5                          | 49.5                     | 54.0           | -4.5        |
| 2390.000        | 20.8                                | 16.3                                   | 26.4                          | 42.7                     | 54.0           | -11.3       |
| 2412.000        | 92.3                                | 82.8                                   | 26.3                          | 109.1                    |                |             |
| 4824.000        | 34.2                                | 29.2                                   | 13.9                          | 43.1                     | 54.0           | -10.9       |
| 7236.000        | 26.2                                | 16.8                                   | 13.3                          | 30.1                     | 89.1           | -59.0       |
| 9648.000        | 29.3                                | 18.7                                   | 15.5                          | 34.2                     | 89.1           | -54.9       |
| 12060.000       | 26.7                                | 16.8                                   | 19.9                          | 36.7                     | 54.0           | -17.3       |
| 14472.000       | 27.7                                | 17.2                                   | 24.7                          | 41.9                     | 54.0           | -12.1       |
| 16884.000       | 28.8                                | 18.2                                   | 22.7                          | 40.9                     | 89.1           | -48.2       |
| 19296.000       | 24.8                                | 15.2                                   | 23.5                          | 38.7                     | 54.0           | -15.3       |
| 21708.000       | 23.8                                | 14.0                                   | 27.6                          | 41.6                     | 89.1           | -47.5       |
| 24120.000       | 30.3                                | 18.7                                   | 28.5                          | 47.2                     | 89.1           | -41.9       |

**TABLE 4-2: CONDUCTED SPURIOUS EMISSIONS CHANNEL 7 – 2442 MHZ SP2 ANTENNA (21.3 dBI)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2442.000        | 91.7                                | 82.3                                   | 26.4                          | 108.7                    |                |             |
| 4884.000        | 32.7                                | 24.8                                   | 14.2                          | 39.0                     | 54.0           | -15.0       |
| 7326.000        | 28.0                                | 17.8                                   | 13.1                          | 30.9                     | 54.0           | -23.1       |
| 9768.000        | 29.5                                | 18.8                                   | 14.9                          | 33.7                     | 88.7           | -55.0       |
| 12210.000       | 27.7                                | 17.5                                   | 23.9                          | 41.4                     | 54.0           | -12.6       |
| 14652.000       | 28.2                                | 17.8                                   | 26.2                          | 44.0                     | 88.7           | -44.7       |
| 17094.000       | 28.2                                | 16.8                                   | 22.5                          | 39.3                     | 88.7           | -49.4       |
| 19536.000       | 26.7                                | 14.3                                   | 24.4                          | 38.7                     | 54.0           | -15.3       |
| 21978.000       | 23.7                                | 14.3                                   | 27.7                          | 42.0                     | 88.7           | -46.7       |
| 24420.000       | 28.0                                | 19.0                                   | 28.6                          | 47.6                     | 88.7           | -41.1       |

**TABLE 4-3: CONDUCTED SPURIOUS EMISSIONS CHANNEL 11– 2462 MHZ SP2 ANTENNA (21.3 dBI)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2462.000        | 91.0                                | 80.5                                   | 26.6                          | 107.1                    |                |             |
| 2470.976        | 67.5                                | 55.8                                   | 26.5                          | 82.3                     | 87.1           | -4.8        |
| 2483.500        | 28.3                                | 24.2                                   | 26.7                          | 50.9                     | 54.0           | -3.1        |
| 4924.000        | 33.5                                | 25.5                                   | 14.0                          | 39.5                     | 54.0           | -14.5       |
| 7386.000        | 27.5                                | 17.5                                   | 14.0                          | 31.5                     | 54.0           | -22.5       |
| 9848.000        | 29.8                                | 19.0                                   | 16.1                          | 35.1                     | 87.1           | -52.0       |
| 12310.000       | 27.2                                | 17.5                                   | 22.8                          | 40.3                     | 54.0           | -13.7       |
| 14772.000       | 28.8                                | 17.5                                   | 26.6                          | 44.1                     | 87.1           | -43.0       |
| 17234.000       | 26.2                                | 17.0                                   | 22.4                          | 39.4                     | 87.1           | -47.7       |
| 19696.000       | 23.3                                | 14.3                                   | 23.2                          | 37.5                     | 54.0           | -16.5       |
| 22158.000       | 24.5                                | 14.7                                   | 27.8                          | 42.5                     | 54.0           | -11.5       |
| 24620.000       | 30.8                                | 19.0                                   | 28.7                          | 47.7                     | 87.1           | -39.4       |

**TABLE 4-4: CONDUCTED SPURIOUS EMISSIONS CHANNEL 1 – 2412 MHZ GRID ANTENNA (24.5 dBi)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2385.233        | 21.0                                | 10.7                                   | 26.5                          | 37.2                     | 54.0           | -16.8       |
| 2386.500        | 20.9                                | 11.0                                   | 26.5                          | 37.5                     | 54.0           | -16.5       |
| 2399.993        | 51.2                                | 41.0                                   | 26.5                          | 67.5                     | 76.0           | -8.5        |
| 2412.000        | 79.5                                | 69.7                                   | 26.3                          | 96.0                     |                |             |
| 4824.000        | 28.7                                | 19.4                                   | 13.9                          | 33.3                     | 54.0           | -20.7       |
| 7236.000        | 28.5                                | 16.7                                   | 13.3                          | 30.0                     | 76.0           | -46.0       |
| 9648.000        | 26.7                                | 16.4                                   | 15.5                          | 31.9                     | 76.0           | -44.1       |
| 12060.000       | 27.5                                | 16.9                                   | 19.9                          | 36.8                     | 54.0           | -17.2       |
| 14472.000       | 28.2                                | 17.4                                   | 24.7                          | 42.1                     | 54.0           | -11.9       |
| 16884.000       | 29.0                                | 16.7                                   | 22.7                          | 39.4                     | 76.0           | -36.6       |
| 19296.000       | 27.0                                | 17.0                                   | 23.5                          | 40.5                     | 54.0           | -13.5       |
| 21708.000       | 26.2                                | 15.7                                   | 27.6                          | 43.3                     | 76.0           | -32.7       |
| 24120.000       | 31.4                                | 20.7                                   | 28.5                          | 49.2                     | 76.0           | -26.8       |

**TABLE 4-5: CONDUCTED SPURIOUS EMISSIONS CHANNEL 7 – 2442 MHZ GRID ANTENNA (24.5 dBi)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2442.000        | 79.8                                | 69.8                                   | 26.4                          | 96.2                     |                |             |
| 4884.000        | 31.3                                | 20.0                                   | 14.2                          | 34.2                     | 54.0           | -19.8       |
| 7326.000        | 18.8                                | 9.2                                    | 13.1                          | 22.3                     | 54.0           | -31.7       |
| 9768.000        | 28.8                                | 18.3                                   | 14.9                          | 33.2                     | 76.2           | -43.0       |
| 12210.000       | 27.2                                | 17.7                                   | 23.9                          | 41.6                     | 54.0           | -12.4       |
| 14652.000       | 28.5                                | 18.0                                   | 26.2                          | 44.2                     | 76.2           | -32.0       |
| 17094.000       | 26.3                                | 17.0                                   | 22.5                          | 39.5                     | 76.2           | -36.7       |
| 19536.000       | 25.7                                | 14.2                                   | 24.4                          | 38.6                     | 54.0           | -15.4       |
| 21978.000       | 25.0                                | 14.3                                   | 27.7                          | 42.0                     | 76.2           | -34.2       |
| 24420.000       | 28.8                                | 19.0                                   | 28.6                          | 47.6                     | 76.2           | -28.6       |

**TABLE 4-6: CONDUCTED SPURIOUS EMISSIONS CHANNEL 11– 2462 MHZ GRID ANTENNA (24.5 dBI)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2462.000        | 79.2                                | 69.8                                   | 26.6                          | 96.4                     |                |             |
| 2471.000        | 56.2                                | 47.2                                   | 26.5                          | 73.7                     | 76.4           | -2.7        |
| 2483.500        | 21.0                                | 10.2                                   | 26.7                          | 36.9                     | 54.0           | -17.1       |
| 4924.000        | 32.2                                | 22.7                                   | 14.0                          | 36.7                     | 54.0           | -17.3       |
| 7386.000        | 18.3                                | 9.0                                    | 14.0                          | 23.0                     | 54.0           | -31.0       |
| 9848.000        | 30.0                                | 19.2                                   | 16.1                          | 35.3                     | 76.4           | -41.1       |
| 12310.000       | 28.2                                | 17.7                                   | 22.8                          | 40.5                     | 54.0           | -13.5       |
| 14772.000       | 29.2                                | 18.0                                   | 26.6                          | 44.6                     | 76.4           | -31.8       |
| 17234.000       | 27.2                                | 17.2                                   | 22.4                          | 39.6                     | 76.4           | -36.8       |
| 19696.000       | 24.8                                | 14.3                                   | 23.2                          | 37.5                     | 54.0           | -16.5       |
| 22158.000       | 24.2                                | 14.8                                   | 27.8                          | 42.6                     | 54.0           | -11.4       |
| 24620.000       | 28.5                                | 18.8                                   | 28.7                          | 47.5                     | 76.4           | -28.9       |

**TABLE 4-7: CONDUCTED SPURIOUS EMISSIONS CHANNEL 1 – 2412 MHZ OMNI ANTENNA (13.5 dBI)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2383.033        | 38.9                                | 26.1                                   | 26.6                          | 52.7                     | 54.0           | -1.3        |
| 2386.183        | 34.9                                | 26.8                                   | 26.5                          | 53.3                     | 54.0           | -0.7        |
| 2390.000        | 29.8                                | 22.4                                   | 26.4                          | 48.8                     | 54.0           | -5.2        |
| 2412.000        | 88.8                                | 79.8                                   | 26.3                          | 106.1                    |                |             |
| 4824.000        | 33.6                                | 29.2                                   | 13.9                          | 43.1                     | 54.0           | -10.9       |
| 7236.000        | 29.2                                | 18.0                                   | 13.3                          | 31.3                     | 86.1           | -54.8       |
| 9648.000        | 28.2                                | 18.5                                   | 15.5                          | 34.0                     | 86.1           | -52.1       |
| 12060.000       | 27.7                                | 17.2                                   | 19.9                          | 37.1                     | 54.0           | -16.9       |
| 14472.000       | 27.7                                | 18.0                                   | 24.7                          | 42.7                     | 54.0           | -11.3       |
| 16884.000       | 28.3                                | 18.0                                   | 22.7                          | 40.7                     | 86.1           | -45.4       |
| 19296.000       | 29.2                                | 17.2                                   | 23.5                          | 40.7                     | 54.0           | -13.3       |
| 21708.000       | 27.2                                | 17.0                                   | 27.6                          | 44.6                     | 86.1           | -41.5       |
| 24120.000       | 28.5                                | 20.0                                   | 28.5                          | 48.5                     | 86.1           | -37.6       |

**TABLE 4-8: CONDUCTED SPURIOUS EMISSIONS CHANNEL 7 – 2442 MHZ OMNI ANTENNA (13.5 dBI)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2442.000        | 89.3                                | 80.7                                   | 26.4                          | 107.1                    |                |             |
| 4884.000        | 32.3                                | 22.3                                   | 14.2                          | 36.5                     | 54.0           | -17.5       |
| 7326.000        | 31.2                                | 20.0                                   | 13.1                          | 33.1                     | 54.0           | -20.9       |
| 9768.000        | 28.5                                | 19.8                                   | 14.9                          | 34.7                     | 87.1           | -52.4       |
| 12210.000       | 27.2                                | 16.7                                   | 23.9                          | 40.6                     | 54.0           | -13.4       |
| 14652.000       | 28.0                                | 18.3                                   | 26.2                          | 44.5                     | 87.1           | -42.6       |
| 17094.000       | 27.8                                | 18.2                                   | 22.5                          | 40.7                     | 87.1           | -46.4       |
| 19536.000       | 29.2                                | 18.8                                   | 24.4                          | 43.2                     | 54.0           | -10.8       |
| 21978.000       | 26.7                                | 16.7                                   | 27.7                          | 44.4                     | 87.1           | -42.7       |
| 24420.000       | 28.5                                | 19.3                                   | 28.6                          | 47.9                     | 87.1           | -39.2       |

**TABLE 4-9: CONDUCTED SPURIOUS EMISSIONS CHANNEL 11– 2462 MHZ OMNI ANTENNA (13.5 dBI)**

| Frequency (MHz) | Peak Spectrum Analyzer Level (dBuV) | Average Spectrum Analyzer Level (dBuV) | Site Correction Factor (dB/m) | Corrected Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) |
|-----------------|-------------------------------------|----------------------------------------|-------------------------------|--------------------------|----------------|-------------|
| 2462.000        | 88.8                                | 78.7                                   | 26.6                          | 105.3                    |                |             |
| 2483.500        | 34.8                                | 22.8                                   | 26.7                          | 49.5                     | 54.0           | -4.5        |
| 2487.820        | 35.7                                | 25.3                                   | 26.9                          | 52.2                     | 54.0           | -1.8        |
| 2488.243        | 36.5                                | 25.3                                   | 26.9                          | 52.2                     | 54.0           | -1.8        |
| 4924.000        | 33.0                                | 25.3                                   | 14.0                          | 39.3                     | 54.0           | -14.7       |
| 7386.000        | 27.2                                | 16.8                                   | 14.0                          | 30.8                     | 54.0           | -23.2       |
| 9848.000        | 30.0                                | 19.7                                   | 16.1                          | 35.8                     | 105.3          | -69.5       |
| 12310.000       | 26.3                                | 17.8                                   | 22.8                          | 40.6                     | 54.0           | -13.4       |
| 14772.000       | 28.0                                | 17.7                                   | 26.6                          | 44.3                     | 105.3          | -61.0       |
| 17234.000       | 27.0                                | 17.2                                   | 22.4                          | 39.6                     | 105.3          | -65.7       |
| 19696.000       | 28.5                                | 18.5                                   | 23.2                          | 41.7                     | 54.0           | -12.3       |
| 22158.000       | 27.3                                | 17.0                                   | 27.8                          | 44.8                     | 54.0           | -9.2        |
| 24620.000       | 29.0                                | 19.8                                   | 28.7                          | 48.5                     | 105.3          | -56.8       |

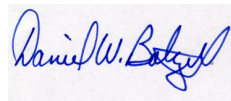
### 4.3 TEST EQUIPMENT

**TABLE 4-10: TEST EQUIPMENT: SPURIOUS EMISSIONS AT ANTENNA TERMINALS**

| RTL ASSET # | MANUFACTURER          | MODEL             | PART TYPE                                   | SERIAL NUMBER | CALIBRATION DUE DATE |
|-------------|-----------------------|-------------------|---------------------------------------------|---------------|----------------------|
| 900772      | EMCO                  | 3161-02           | Horn Antenna (2 - 4 GHz)                    | 9804-1044     | 5/20/07              |
| 900323      | EMCO                  | 3160-7            | Horn Antenna (8.2 - 12.4 GHz)               | 9605-1054     | 5/20/07              |
| 900356      | EMCO                  | 3160-08           | Horn Antenna (12.4 - 18 GHz)                | 9607-1044     | 5/20/07              |
| 900321      | EMCO                  | 3161-03           | Horn Antenna (4.0 - 8.2 GHz)                | 9508-1020     | 5/20/07              |
| 900325      | EMCO                  | 3160-9            | Horn Antennas (18 - 26.5 GHz)               | 9605-1051     | 5/20/07              |
| 901053      | Schaffner & Chase     | CBL6112B          | Bilog Antenna (20 MHz - 2 GHz)              | 2648          | 7/3/04               |
| 900932      | Hewlett Packard       | 8449B             | Microwave Preamplifier (1 - 26.5 GHz)       | 3008A00505    | 5/5/05               |
| 901020      | Hewlett Packard       | 8564E             | Portable Spectrum Analyzer (9 kHz - 40 GHz) | 3943A01719    | 7/15/04              |
| 901232      | IW Microwave Products | KPW-1503-2400-KPS | High Frequency RF Cables                    | 240"          | 1/30/05              |
| 901235      | IW Microwave Products | KPS-1503-360-KPS  | High Frequency RF Cables                    | 36"           | 1/30/05              |

TEST PERSONNEL:

DANIEL BALTZELL  
 TEST ENGINEER



SIGNATURE

JUNE 25, 2004  
 DATE OF TEST

## **5 CONCLUSION**

The data in this Class II change report shows that the OpenSky SkyLink ISM Radio Network with the additional antenna options, FCC ID: BV8MTT-A025, complies with all the requirements of Parts 2 and 15 of the FCC Rules.