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Subject: RF MPE EXPOSURE

Re: FCC ID: PWO275370

To Whom It May Concern:

The MPE calculations for model 275370 signal booster were done for each frequency band: 700 MHz, 800 MHz, and 1900 MHz. For each band two calculations were done; these included the different possibilities of antennas that may be connected to this signal booster: fixed outside and inside antennas. The order of the attached calculations is as follows:

700 MHz band:

1. Fixed Outside Antenna
2. Inside Antenna

800 MHz band:

3. Fixed Outside Antenna
4. Inside Antenna

1900 MHz band:

5. Fixed Outside Antenna
6. Inside Antenna

The results of these calculations determine the safe distances and gains for antennas that may be connected to this signal booster as summarized below:

|                                                       | Fixed Outside Antenna | Inside Antenna |
|-------------------------------------------------------|-----------------------|----------------|
| Maximum Gain less Cable Loss (dBi)                    | 15                    | 8.6            |
| Minimum Distance from All People (inches/centimeters) | 23/56                 | 8/21           |

Sincerely,

Patrick L. Cook  
Senior Research and Development Engineer



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

|                             |         |
|-----------------------------|---------|
| Frequency MHz               | 698     |
| Pout Watts                  | 0.47900 |
| Duty Cycle Percent          | 100.0%  |
| Ant. Gain dBi               | 15.00   |
| Coax Loss dB                | 0.00    |
| Distance From Antenna In cm | 51.0    |

### RESULTS OF CALCULATIONS

|                                                |         |
|------------------------------------------------|---------|
| Ant. Gain less Coax Loss dBi                   | 15.00   |
| Distance From Antenna In Inches                | 20.08   |
| ERP (Watts)                                    | 9.2362  |
| EIRP (Watts)                                   | 15.1473 |
| FCC Power Density Limit (mw/cm <sup>2</sup> )  | 0.47    |
| Calculated Power Density (mw/cm <sup>2</sup> ) | 0.46    |

### REFERENCE DATA

|                                         |        |
|-----------------------------------------|--------|
| Pout dBm                                | 26.80  |
| Antenna Gain (non-log)                  | 31.62  |
| Coax loss (non-log)                     | 1.00   |
| General FCC Limit (mw/cm <sup>2</sup> ) | f/1500 |



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

|                             |         |
|-----------------------------|---------|
| Frequency MHz               | 728     |
| Pout Watts                  | 0.30900 |
| Duty Cycle Percent          | 100.0%  |
| Ant. Gain dBi               | 9.00    |
| Coax Loss dB                | 0.00    |
| Distance From Antenna In cm | 20.1    |

### RESULTS OF CALCULATIONS

|                                                |        |
|------------------------------------------------|--------|
| Ant. Gain less Coax Loss dBi                   | 9.00   |
| Distance From Antenna In Inches                | 7.91   |
| ERP (Watts)                                    | 1.4966 |
| EIRP (Watts)                                   | 2.4545 |
| FCC Power Density Limit (mw/cm <sup>2</sup> )  | 0.49   |
| Calculated Power Density (mw/cm <sup>2</sup> ) | 0.48   |

### REFERENCE DATA

|                                         |        |
|-----------------------------------------|--------|
| Pout dBm                                | 24.90  |
| Antenna Gain (non-log)                  | 7.94   |
| Coax loss (non-log)                     | 1.00   |
| General FCC Limit (mw/cm <sup>2</sup> ) | f/1500 |



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

|                             |         |
|-----------------------------|---------|
| Frequency MHz               | 824     |
| Pout Watts                  | 0.67600 |
| Duty Cycle Percent          | 100.0%  |
| Ant. Gain dBi               | 15.00   |
| Coax Loss dB                | 0.00    |
| Distance From Antenna In cm | 55.9    |

### RESULTS OF CALCULATIONS

|                                                |         |
|------------------------------------------------|---------|
| Ant. Gain less Coax Loss dBi                   | 15.00   |
| Distance From Antenna In Inches                | 22.01   |
| ERP (Watts)                                    | 13.0348 |
| EIRP (Watts)                                   | 21.3770 |
| FCC Power Density Limit (mw/cm <sup>2</sup> )  | 0.55    |
| Calculated Power Density (mw/cm <sup>2</sup> ) | 0.54    |

### REFERENCE DATA

|                                         |        |
|-----------------------------------------|--------|
| Pout dBm                                | 28.30  |
| Antenna Gain (non-log)                  | 31.62  |
| Coax loss (non-log)                     | 1.00   |
| General FCC Limit (mw/cm <sup>2</sup> ) | f/1500 |



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

|                             |         |
|-----------------------------|---------|
| Frequency MHz               | 869     |
| Pout Watts                  | 0.33880 |
| Duty Cycle Percent          | 100.0%  |
| Ant. Gain dBi               | 8.60    |
| Coax Loss dB                | 0.00    |
| Distance From Antenna In cm | 20.0    |

### RESULTS OF CALCULATIONS

|                                                |        |
|------------------------------------------------|--------|
| Ant. Gain less Coax Loss dBi                   | 8.60   |
| Distance From Antenna In Inches                | 7.87   |
| ERP (Watts)                                    | 1.4966 |
| EIRP (Watts)                                   | 2.4544 |
| FCC Power Density Limit (mw/cm <sup>2</sup> )  | 0.58   |
| Calculated Power Density (mw/cm <sup>2</sup> ) | 0.49   |

### REFERENCE DATA

|                                         |        |
|-----------------------------------------|--------|
| Pout dBm                                | 25.30  |
| Antenna Gain (non-log)                  | 7.24   |
| Coax loss (non-log)                     | 1.00   |
| General FCC Limit (mw/cm <sup>2</sup> ) | f/1500 |



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

|                             |         |
|-----------------------------|---------|
| Frequency MHz               | 1850    |
| Pout Watts                  | 0.85100 |
| Duty Cycle Percent          | 100.0%  |
| Ant. Gain dBi               | 15.00   |
| Coax Loss dB                | 0.00    |
| Distance From Antenna In cm | 46.4    |

### RESULTS OF CALCULATIONS

|                                                |         |
|------------------------------------------------|---------|
| Ant. Gain less Coax Loss dBi                   | 15.00   |
| Distance From Antenna In Inches                | 18.27   |
| ERP (Watts)                                    | 16.4091 |
| EIRP (Watts)                                   | 26.9110 |
| FCC Power Density Limit (mw/cm <sup>2</sup> )  | 1.00    |
| Calculated Power Density (mw/cm <sup>2</sup> ) | 0.99    |

### REFERENCE DATA

|                                         |       |
|-----------------------------------------|-------|
| Pout dBm                                | 29.30 |
| Antenna Gain (non-log)                  | 31.62 |
| Coax loss (non-log)                     | 1.00  |
| General FCC Limit (mw/cm <sup>2</sup> ) | 1.00  |



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

|                             |         |
|-----------------------------|---------|
| Frequency MHz               | 1930    |
| Pout Watts                  | 0.33110 |
| Duty Cycle Percent          | 100.0%  |
| Ant. Gain dBi               | 11.70   |
| Coax Loss dB                | 0.00    |
| Distance From Antenna In cm | 20.0    |

### RESULTS OF CALCULATIONS

|                                                |        |
|------------------------------------------------|--------|
| Ant. Gain less Coax Loss dBi                   | 11.70  |
| Distance From Antenna In Inches                | 7.87   |
| ERP (Watts)                                    | 2.9862 |
| EIRP (Watts)                                   | 4.8973 |
| FCC Power Density Limit (mw/cm <sup>2</sup> )  | 1.00   |
| Calculated Power Density (mw/cm <sup>2</sup> ) | 0.97   |

### REFERENCE DATA

|                                         |       |
|-----------------------------------------|-------|
| Pout dBm                                | 25.20 |
| Antenna Gain (non-log)                  | 14.79 |
| Coax loss (non-log)                     | 1.00  |
| General FCC Limit (mw/cm <sup>2</sup> ) | 1.00  |