WILSON ELECTRONICS, LLC
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July 1, 2024
Subject: RF MPE EXPOSURE
Re: FCC ID: PWO076

To Whom It May Concern:

The MPE calculations for model 460076 signal booster were done for each frequency band: 700 MHz Band 12, 700 MHz Band 13, 800 MHz Band 5, 1900 MHz Band 25, and 1700/2100 MHz Band 4. For each band, one calculation was done; this included an outside antenna, and an inside antenna that may be connected to this signal booster. The order of the attached calculations is as follows:

700 MHz Band 12:
1. Inside Antenna: 304412-952300
2. Inside Antenna: 311242-952300

700 MHz Band 13:
1. Inside Antenna: 304412-952300
2. Inside Antenna: 311242-952300

800 MHz Band 5:
1. Inside Antenna: 304412-952300
2. Inside Antenna: 311242-952300

1900 MHz Band 25:
1. Inside Antenna: 304412-952300
2. Inside Antenna: 311242-952300

1700/2100 MHz Band 4:
1. Inside Antenna: 304412-952300
2. Inside Antenna: 311242-952300

1. Outside Antenna: 314411-952300

A booster's uplink power must not exceed 1 watt equivalent isotropic radiated power (EIRP) for each band of operation. Composite downlink power must not exceed 0.05 watt EIRP for each band of operation (20.21(e)(8)(i)(D)). The following formula was used to calculate the EIRP:

EIRP= Power Out (Watts)*Duty Cycle Percent*Antenna Gain (non-log)*Coax loss (non-log)

The power density ($mW/cm^2$) is calculated using the following formula:

Calculated Power Density=1000*EIRP (Watts)/(4*π*(Distance from Antenna (cm)^2))

Sincerely,

Ilesh Patel Senior Engineering Product Manager

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# Minimum Safe Distance From Antennas

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

### Band 12 Downlink – 700MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 728 |
| Pout Watts | 0.00041 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | -2.43 |
| Coax Loss dB | 0.00 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | -2.43 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.0002 |
| FCC Power Density Limit ($mw/cm^2$) | 0.49 |
| Calculated Power Density ($mw/cm^2$) | 0.0000 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | -3.90 |
| Antenna Gain (non-log) | 0.57 |
| Coax loss (non-log) | 1.00 |
| General FCC Limit ($mw/cm^2$) | f/1500 |

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# Minimum Safe Distance From Antennas

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

### Band 12 Uplink – 700MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 698 |
| Pout Watts | 0.15488 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | 7.30 |
| Coax Loss dB | 3.72 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | 3.58 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.3532 |
| FCC Power Density Limit ($mw/cm^2$) | 0.47 |
| Calculated Power Density ($mw/cm^2$) | 0.0682 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | 21.90 |
| Antenna Gain (non-log) | 5.37 |
| Coax loss (non-log) | 0.42 |
| General FCC Limit ($mw/cm^2$) | f/1500 |

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# Minimum Safe Distance From Antennas

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

### Band 13 Downlink – 700MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 746 |
| Pout Watts | 0.00034 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | -1.69 |
| Coax Loss dB | 0.00 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | -1.69 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.0002 |
| FCC Power Density Limit ($mw/cm^2$) | 0.50 |
| Calculated Power Density ($mw/cm^2$) | 0.0000 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | -4.70 |
| Antenna Gain (non-log) | 0.68 |
| Coax loss (non-log) | 1.00 |
| General FCC Limit ($mw/cm^2$) | f/1500 |

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# Minimum Safe Distance From Antennas

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

### Band 13 Uplink – 700MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 777 |
| Pout Watts | 0.28184 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | 7.20 |
| Coax Loss dB | 3.99 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | 3.21 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.5902 |
| FCC Power Density Limit ($mw/cm^2$) | 0.52 |
| Calculated Power Density ($mw/cm^2$) | 0.1140 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | 24.50 |
| Antenna Gain (non-log) | 5.25 |
| Coax loss (non-log) | 0.40 |
| General FCC Limit ($mw/cm^2$) | f/1500 |

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# Minimum Safe Distance From Antennas

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

### Band 5 Downlink – 800MHz

| INPUT DATA | |
|---|---|
| Frequency MHz | 869 |
| Pout Watts | 0.00062 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | -2.79 |
| Coax Loss dB | 0.00 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | -2.79 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.0003 |
| FCC Power Density Limit ($mw/cm^2$) | 0.58 |
| Calculated Power Density ($mw/cm^2$) | 0.0001 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | -2.10 |
| Antenna Gain (non-log) | 0.53 |
| Coax loss (non-log) | 1.00 |
| General FCC Limit ($mw/cm^2$) | f/1500 |

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# Minimum Safe Distance From Antennas

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

### Band 5 Uplink – 800MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 824 |
| Pout Watts | 0.14125 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | 7.80 |
| Coax Loss dB | 4.79 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | 3.01 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.2825 |
| FCC Power Density Limit ($mw/cm^2$) | 0.55 |
| Calculated Power Density ($mw/cm^2$) | 0.0546 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | 21.50 |
| Antenna Gain (non-log) | 6.03 |
| Coax loss (non-log) | 0.33 |
| General FCC Limit ($mw/cm^2$) | f/1500 |

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# Minimum Safe Distance From Antennas

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

### Band 25 Downlink – 1900MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 1930 |
| Pout Watts | 0.00093 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | -1.29 |
| Coax Loss dB | 0.00 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | -1.29 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.0007 |
| FCC Power Density Limit ($mw/cm^2$) | 1.00 |
| Calculated Power Density ($mw/cm^2$) | 0.0001 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | -0.30 |
| Antenna Gain (non-log) | 0.74 |
| Coax loss (non-log) | 1.00 |
| General FCC Limit ($mw/cm^2$) | 1.00 |

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# Minimum Safe Distance From Antennas

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

### Band 25 Uplink – 1900MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 1850 |
| Pout Watts | 0.18197 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | 9.10 |
| Coax Loss dB | 7.18 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | 1.92 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.2831 |
| FCC Power Density Limit ($mw/cm^2$) | 1.00 |
| Calculated Power Density ($mw/cm^2$) | 0.0547 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | 22.60 |
| Antenna Gain (non-log) | 8.13 |
| Coax loss (non-log) | 0.19 |
| General FCC Limit ($mw/cm^2$) | 1.00 |

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# Minimum Safe Distance From Antennas

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

### Band 4 Downlink – 2100MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 2110 |
| Pout Watts | 0.00060 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | -0.33 |
| Coax Loss dB | 0.00 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | -0.33 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.0006 |
| FCC Power Density Limit ($mw/cm^2$) | 1.00 |
| Calculated Power Density ($mw/cm^2$) | 0.0001 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | -2.20 |
| Antenna Gain (non-log) | 0.93 |
| Coax loss (non-log) | 1.00 |
| General FCC Limit ($mw/cm^2$) | 1.00 |

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# Minimum Safe Distance From Antennas

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

### Band 4 Uplink – 1700MHz

| **INPUT DATA** | |
|---|---|
| Frequency MHz | 1710 |
| Pout Watts | 0.23442 |
| Duty Cycle Percent | 100.0% |
| Ant. Gain dBi | 7.90 |
| Coax Loss dB | 5.85 |
| Distance From Antenna In cm | 20.3 |
| | |
| **RESULTS OF CALCULATIONS** | |
| Ant. Gain less Coax Loss dBi | 2.05 |
| Distance From Antenna In Inches | 7.99 |
| EIRP (Watts) | 0.3758 |
| FCC Power Density Limit ($mw/cm^2$) | 1.00 |
| Calculated Power Density ($mw/cm^2$) | 0.0726 |
| | |
| | |
| **REFERENCE DATA** | |
| Pout dBm | 23.70 |
| Antenna Gain (non-log) | 6.17 |
| Coax loss (non-log) | 0.26 |
| General FCC Limit ($mw/cm^2$) | 1.00 |