3301 E. Deseret Drive, St. George, UT 84790
www.wilsonelectronics.com • info@wilsonelectronics.com
phone 1-800-204-4104 • fax 1-435-656-2432

November 15, 2013
Subject: RF MPE EXPOSURE
Re: FCC ID: PWO460003

To Whom It May Concern:

The MPE calculations for model 460003 signal booster were done for each frequency band: 1700/2100 MHz, 800 MHz, 700 MHz Band 13, 700 MHz Band 12, 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:

1700/2100 MHz band:
1. Fixed Outside Antenna: 314453-40075
2. Inside Antenna: 311155

800 MHz band:
1. Fixed Outside Antenna: 311124-400100
2. Inside Antenna: 311155

700 MHz Band 13:
1. Fixed Outside Antenna: 314411-40075
2. Inside Antenna: 311155

700 MHz Band 12:
1. Fixed Outside Antenna: 314411
2. Inside Antenna: 311155

1900 MHz band:
1. Fixed Outside Antenna: 311129-1180
2. Inside Antenna: 309904-75F

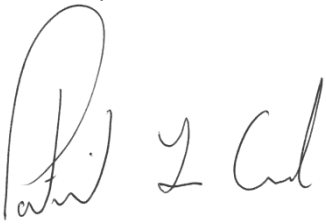
A booster's uplink power must not exceed 1 watt equivalent isotropic radiated power (EIRP) for each band of operation. Composite downlink power must not exceed 0.05 watt EIRP for each band of operation (20.21(e)(8)(i)(D)). The following formula was used to calculate the equivalent isotropic radiated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

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,



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	1710
Pout Watts	0.25704
Duty Cycle Percent	100.0%
Ant. Gain dBi	8.20
Coax Loss dB	4.36
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	3.84
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.6223
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.1201

REFERENCE DATA

Pout dBm	24.10
Antenna Gain (non-log)	6.61
Coax loss (non-log)	0.37
General FCC Limit (mw/cm^2)	1.00

Antenna # 314453-40075

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	2110
Pout Watts	0.00174
Duty Cycle Percent	100.0%
Ant. Gain dBi	6.70
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	6.70
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0081
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0016

REFERENCE DATA

Pout dBm	2.41
Antenna Gain (non-log)	4.68
Coax loss (non-log)	1.00
General FCC Limit (mw/cm^2)	1.00

Antenna # 311155

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	824
Pout Watts	0.27542
Duty Cycle Percent	100.0%
Ant. Gain dBi	9.64
Coax Loss dB	4.70
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.94
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.8590
FCC Power Density Limit (mw/cm^2)	0.55
Calculated Power Density (mw/cm^2)	0.1657

REFERENCE DATA

Pout dBm	24.40
Antenna Gain (non-log)	9.20
Coax loss (non-log)	0.34
General FCC Limit (mw/cm^2)	f/1500

Antenna # 311124-400100

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	869
Pout Watts	0.00282
Duty Cycle Percent	100.0%
Ant. Gain dBi	6.10
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	6.10
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0115
FCC Power Density Limit (mw/cm^2)	0.58
Calculated Power Density (mw/cm^2)	0.0022

REFERENCE DATA

Pout dBm	4.50
Antenna Gain (non-log)	4.07
Coax loss (non-log)	1.00
General FCC Limit (mw/cm^2)	f/1500

Antenna # 311155

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	776
Pout Watts	0.26303
Duty Cycle Percent	100.0%
Ant. Gain dBi	7.20
Coax Loss dB	3.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.20
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.6918
FCC Power Density Limit (mw/cm^2)	0.52
Calculated Power Density (mw/cm^2)	0.1335

REFERENCE DATA

Pout dBm	24.20
Antenna Gain (non-log)	5.25
Coax loss (non-log)	0.50
General FCC Limit (mw/cm^2)	f/1500

Antenna # 314411-40075

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	746
Pout Watts	0.00282
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.20
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.20
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0074
FCC Power Density Limit (mw/cm^2)	0.50
Calculated Power Density (mw/cm^2)	0.0014

REFERENCE DATA

Pout dBm	4.50
Antenna Gain (non-log)	2.63
Coax loss (non-log)	1.00
General FCC Limit (mw/cm^2)	f/1500

Antenna # 311155

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	704
Pout Watts	0.17783
Duty Cycle Percent	100.0%
Ant. Gain dBi	7.30
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	7.30
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.9550
FCC Power Density Limit (mw/cm^2)	0.47
Calculated Power Density (mw/cm^2)	0.1842

REFERENCE DATA

Pout dBm	22.50
Antenna Gain (non-log)	5.37
Coax loss (non-log)	1.00
General FCC Limit (mw/cm^2)	f/1500

Antenna # 314411

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	734
Pout Watts	0.00295
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.20
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.20
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0078
FCC Power Density Limit (mw/cm^2)	0.49
Calculated Power Density (mw/cm^2)	0.0015

REFERENCE DATA

Pout dBm	4.70
Antenna Gain (non-log)	2.63
Coax loss (non-log)	1.00
General FCC Limit (mw/cm^2)	f/1500

Antenna # 311155

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	728
Pout Watts	0.00295
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.90
Coax Loss dB	6.25
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.65
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0086
FCC Power Density Limit (mw/cm^2)	0.49
Calculated Power Density (mw/cm^2)	0.0017

REFERENCE DATA

Pout dBm	4.70
Antenna Gain (non-log)	12.30
Coax loss (non-log)	0.24
General FCC Limit (mw/cm^2)	f/1500

Antenna # 311129-1180

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	1930
Pout Watts	0.01096
Duty Cycle Percent	100.0%
Ant. Gain dBi	9.77
Splitter and Coax Loss dB	3.17
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	6.60
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.050
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0097

REFERENCE DATA

Pout dBm	10.40
Antenna Gain (non-log)	9.48
Coax loss (non-log)	0.48
General FCC Limit (mw/cm^2)	1.00

Antenna # 309904-75F