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

June 23, 2014

Subject: RF MPE EXPOSURE
Re: FCC ID: PWO460001

To Whom It May Concern:

The MPE calculations for model 460001 signal booster were done for each frequency band: 1700/2100 MHz, 800 MHz, 700 MHz Band 13, 700 MHz Band 17, and 1900 MHz. For each band two calculations were done; these included the worst case scenario for each of the different types 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: CANT-0042
2. Inside Antenna: 311155

800 MHz band:
1. Fixed Outside Antenna: CANT-0042
2. Inside Antenna: 311155

700 MHz Band 13:
1. Fixed Outside Antenna: CANT-0042
2. Inside Antenna: 311155

700 MHz Band 17:
1. Fixed Outside Antenna: CANT-0042
2. Inside Antenna: 311155

1900 MHz band:
1. Fixed Outside Antenna: 314473-0640
2. Inside Antenna: 311155

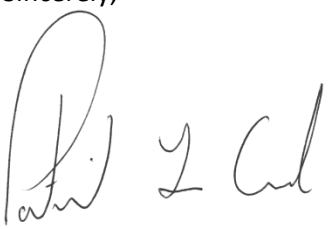
A booster's uplink power must not exceed 1 watt equivalent isotropic radiated power (EIRP) for each band of operation. Composite downlink power must not exceed 0.05 watt EIRP for each band of operation (20.21(e)(8)(i)(D)). The following formula was used to calculate the equivalent isotropic radiated 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	0.30900
Duty Cycle Percent	100.0%
Ant. Gain dBi	12.00
Coax Loss dB	7.62
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.38
Distance From Antenna In Inches	8.00
ERP (Watts)	0.5166
EIRP (Watts)	0.8471
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.1634

REFERENCE DATA

Pout dBm	24.90
Antenna Gain (non-log)	15.85
Coax loss (non-log)	0.17
General FCC Limit (mw/cm^2)	1.00

Antenna # CANT-0042

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	2110
Pout Watts	0.00380
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
ERP (Watts)	0.0108
EIRP (Watts)	0.0178
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0034

REFERENCE DATA

Pout dBm	5.80
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	0.28770
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.00
Coax Loss dB	5.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	5.00
Distance From Antenna In Inches	8.00
ERP (Watts)	0.5547
EIRP (Watts)	0.9098
FCC Power Density Limit (mw/cm^2)	0.55
Calculated Power Density (mw/cm^2)	0.1755

REFERENCE DATA

Pout dBm	24.59
Antenna Gain (non-log)	10.00
Coax loss (non-log)	0.32
General FCC Limit (mw/cm^2)	f/1500

Antenna # CANT-0042

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	869
Pout Watts	0.00163
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
ERP (Watts)	0.0040
EIRP (Watts)	0.0066
FCC Power Density Limit (mw/cm^2)	0.58
Calculated Power Density (mw/cm^2)	0.0013

REFERENCE DATA

Pout dBm	2.12
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	777
Pout Watts	0.22910
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.00
Coax Loss dB	4.59
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	5.41
Distance From Antenna In Inches	8.00
ERP (Watts)	0.4855
EIRP (Watts)	0.7962
FCC Power Density Limit (mw/cm^2)	0.52
Calculated Power Density (mw/cm^2)	0.1536

REFERENCE DATA

Pout dBm	23.60
Antenna Gain (non-log)	10.00
Coax loss (non-log)	0.35
General FCC Limit (mw/cm^2)	f/1500

Antenna # CANT-0042

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	746
Pout Watts	0.00079
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
ERP (Watts)	0.0013
EIRP (Watts)	0.0021
FCC Power Density Limit (mw/cm^2)	0.50
Calculated Power Density (mw/cm^2)	0.0004

REFERENCE DATA

Pout dBm	-1.02
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	0.23440
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.00
Coax Loss dB	4.59
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	5.41
Distance From Antenna In Inches	8.00
ERP (Watts)	0.4967
EIRP (Watts)	0.8146
FCC Power Density Limit (mw/cm^2)	0.47
Calculated Power Density (mw/cm^2)	0.1572

REFERENCE DATA

Pout dBm	23.70
Antenna Gain (non-log)	10.00
Coax loss (non-log)	0.35
General FCC Limit (mw/cm^2)	f/1500

Antenna # CANT-0042

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	734
Pout Watts	0.00123
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
ERP (Watts)	0.0020
EIRP (Watts)	0.0032
FCC Power Density Limit (mw/cm^2)	0.49
Calculated Power Density (mw/cm^2)	0.0006

REFERENCE DATA

Pout dBm	0.90
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	1850
Pout Watts	0.21380
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.00
Coax Loss dB	5.28
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.72
Distance From Antenna In Inches	8.00
ERP (Watts)	0.3865
EIRP (Watts)	0.6339
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.1223

REFERENCE DATA

Pout dBm	23.30
Antenna Gain (non-log)	10.00
Coax loss (non-log)	0.30
General FCC Limit (mw/cm^2)	1.00

Antenna # 314473-0640

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	1930
Pout Watts	0.00275
Duty Cycle Percent	100.0%
Ant. Gain dBi	9.80
Coax Loss dB	0.00
Distance From Antenna In cm	20.0

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	9.80
Distance From Antenna In Inches	7.87
ERP (Watts)	0.0160
EIRP (Watts)	0.0263
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0052

REFERENCE DATA

Pout dBm	4.40
Antenna Gain (non-log)	9.55
Coax loss (non-log)	1.00
General FCC Limit (mw/cm^2)	1.00

Antenna # 311155