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

February 23, 2017

Subject: RF MPE EXPOSURE
Re: FCC ID: PWO460030

To Whom It May Concern:

The MPE calculations for model 460030 signal booster were done for each frequency band: 700 MHz Band 12, 700 MHz Band 13, 800 MHz, 1900 MHz, and 1700/2100 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: outside and inside antennas. The order of the attached calculations is as follows:

700 MHz Band 12:
1. Outside Antenna: 314411-40075
2. Inside Antenna: 311135-5840

700 MHz Band 13:
1. Outside Antenna: 314411-40075
2. Inside Antenna: 3311135-5840

800 MHz band:
1. Outside Antenna: 314411-5825
2. Inside Antenna: 311135-5840

1900 MHz band:
1. Outside Antenna: 314473-0640
2. Inside Antenna: 311135-5840

1700/2100 MHz band:
1. Outside Antenna: 314453-40075
2. Inside Antenna: 304419-1175

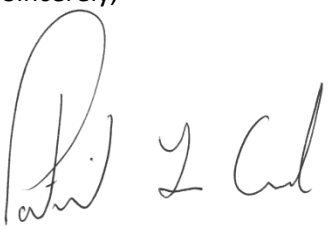
A booster's uplink power must not exceed 1 watt equivalent isotropic radiated power (EIRP) for each band of operation. Composite downlink power must not exceed 0.05 watt EIRP for each band of operation (20.21(e)(8)(i)(D)). The following formula was used to calculate the equivalent isotropic radiated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

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	698
Pout Watts	0.29512
Duty Cycle Percent	100.0%
Ant. Gain dBi	7.30
Coax Loss dB	2.80
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.50
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.8318
FCC Power Density Limit (mw/cm^2)	0.47
Calculated Power Density (mw/cm^2)	0.1605

REFERENCE DATA

Pout dBm	24.70
Antenna Gain (non-log)	5.37
Coax loss (non-log)	0.52
General FCC Limit (mw/cm^2)	f/1500

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	728
Pout Watts	0.03020
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.20
Coax Loss dB	4.80
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	-0.60
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0263
FCC Power Density Limit (mw/cm^2)	0.49
Calculated Power Density (mw/cm^2)	0.0051

REFERENCE DATA

Pout dBm	14.80
Antenna Gain (non-log)	2.63
Coax loss (non-log)	0.33
General FCC Limit (mw/cm^2)	f/1500

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	776
Pout Watts	0.29512
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)	0.7762
FCC Power Density Limit (mw/cm^2)	0.52
Calculated Power Density (mw/cm^2)	0.1498

REFERENCE DATA

Pout dBm	24.70
Antenna Gain (non-log)	5.25
Coax loss (non-log)	0.50
General FCC Limit (mw/cm^2)	f/1500

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	746
Pout Watts	0.02692
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.2
Coax Loss dB	4.9
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	-0.70
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0229
FCC Power Density Limit (mw/cm^2)	0.50
Calculated Power Density (mw/cm^2)	0.0044

REFERENCE DATA

Pout dBm	14.30
Antenna Gain (non-log)	2.63
Coax loss (non-log)	0.32
General FCC Limit (mw/cm^2)	f/1500

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	1850
Pout Watts	0.28184
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.00
Coax Loss dB	5.26
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.74
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.8395
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.1619

REFERENCE DATA

Pout dBm	24.50
Antenna Gain (non-log)	10.00
Coax loss (non-log)	0.30
General FCC Limit (mw/cm^2)	1.00

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	7.80
Coax Loss dB	4.46
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	3.34
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.5943
FCC Power Density Limit (mw/cm^2)	0.55
Calculated Power Density (mw/cm^2)	0.1146

REFERENCE DATA

Pout dBm	24.40
Antenna Gain (non-log)	6.03
Coax loss (non-log)	0.36
General FCC Limit (mw/cm^2)	f/1500

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	869
Pout Watts	0.03631
Duty Cycle Percent	100.0%
Ant. Gain dBi	6.10
Coax Loss dB	5.34
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	0.76
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0433
FCC Power Density Limit (mw/cm^2)	0.58
Calculated Power Density (mw/cm^2)	0.0083

REFERENCE DATA

Pout dBm	15.60
Antenna Gain (non-log)	4.07
Coax loss (non-log)	0.29
General FCC Limit (mw/cm^2)	f/1500

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	1930
Pout Watts	0.03236
Duty Cycle Percent	100.0%
Ant. Gain dBi	9.80
Coax Loss dB	8.80
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	1.00
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0407
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0079

REFERENCE DATA

Pout dBm	15.10
Antenna Gain (non-log)	9.55
Coax loss (non-log)	0.13
General FCC Limit (mw/cm^2)	1.00

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	1710
Pout Watts	0.32359
Duty Cycle Percent	100.0%
Ant. Gain dBi	8.20
Coax Loss dB	4.49
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	3.71
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.7603
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.1467

REFERENCE DATA

Pout dBm	25.10
Antenna Gain (non-log)	6.61
Coax loss (non-log)	0.36
General FCC Limit (mw/cm^2)	1.00

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	2110
Pout Watts	0.03162
Duty Cycle Percent	100.0%
Ant. Gain dBi	5.30
Coax Loss dB	6.42
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	-1.12
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0244
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0047

REFERENCE DATA

Pout dBm	15.00
Antenna Gain (non-log)	3.39
Coax loss (non-log)	0.23
General FCC Limit (mw/cm^2)	1.00