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January 18, 2019
Subject: RF MPE EXPOSURE
Re: FCC ID: PWO 460055

To Whom It May Concern:

The MPE calculations for model 460055 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 one calculation was done; this included mobile outside antenna, and mobile 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: ANT000006
2. Outside Antenna: 314405

700 MHz Band 13:
1. Inside Antenna: ANT000006
2. Outside Antenna: 314405

800 MHz band:
1. Inside Antenna: ANT000006
2. Outside Antenna: 314405

1900 MHz band:
1. Inside Antenna: ANT000006
2. Outside Antenna: 314405

1700/2100 MHz band:
1. Inside Antenna: ANT000006
2. Outside Antenna: 314405

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,

Erin Elder
IP & Regulatory Compliance Engineer

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

INPUT DATA

Frequency MHz	728
Pout Watts	0.00316
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.14
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.14
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0052
FCC Power Density Limit (mw/cm^2)	0.49
Calculated Power Density (mw/cm^2)	0.0010

REFERENCE DATA

Pout dBm	5.00
Antenna Gain (non-log)	1.64
Coax loss (non-log)	1.00
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	698
Pout Watts	0.53703
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.30
Coax Loss dB	1.68
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.62
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.9817
FCC Power Density Limit (mw/cm^2)	0.47
Calculated Power Density (mw/cm^2)	0.1894

REFERENCE DATA

Pout dBm	27.30
Antenna Gain (non-log)	2.69
Coax loss (non-log)	0.68
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	0.00331
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.3
Coax Loss dB	0.0
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.32
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0056
FCC Power Density Limit (mw/cm^2)	0.50
Calculated Power Density (mw/cm^2)	0.0011

REFERENCE DATA

Pout dBm	5.20
Antenna Gain (non-log)	1.71
Coax loss (non-log)	1.00
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	777
Pout Watts	0.51286
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.5
Coax Loss dB	1.7
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.77
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.9705
FCC Power Density Limit (mw/cm^2)	0.52
Calculated Power Density (mw/cm^2)	0.1872

REFERENCE DATA

Pout dBm	27.10
Antenna Gain (non-log)	2.80
Coax loss (non-log)	0.68
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	0.00331
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.01
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.01
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0083
FCC Power Density Limit (mw/cm^2)	0.58
Calculated Power Density (mw/cm^2)	0.0016

REFERENCE DATA

Pout dBm	5.20
Antenna Gain (non-log)	2.52
Coax loss (non-log)	1.00
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	824
Pout Watts	0.50119
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.68
Coax Loss dB	1.87
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.81
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.9572
FCC Power Density Limit (mw/cm^2)	0.55
Calculated Power Density (mw/cm^2)	0.1847

REFERENCE DATA

Pout dBm	27.00
Antenna Gain (non-log)	2.94
Coax loss (non-log)	0.65
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	2110
Pout Watts	0.00316
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.42
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.42
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0087
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0017

REFERENCE DATA

Pout dBm	5.00
Antenna Gain (non-log)	2.77
Coax loss (non-log)	1.00
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	0.70795
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.78
Coax Loss dB	3.17
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	-0.39
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.6471
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.1248

REFERENCE DATA

Pout dBm	28.50
Antenna Gain (non-log)	1.90
Coax loss (non-log)	0.48
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	1930
Pout Watts	0.00324
Duty Cycle Percent	100.0%
Ant. Gain dBi	4.37
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	4.37
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.0089
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.0017

REFERENCE DATA

Pout dBm	5.10
Antenna Gain (non-log)	2.74
Coax loss (non-log)	1.00
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	1850
Pout Watts	0.58884
Duty Cycle Percent	100.0%
Ant. Gain dBi	5.46
Coax Loss dB	3.23
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.23
Distance From Antenna In Inches	8.00
EIRP (Watts)	0.9840
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.1898

REFERENCE DATA

Pout dBm	27.70
Antenna Gain (non-log)	3.52
Coax loss (non-log)	0.48
General FCC Limit (mw/cm^2)	1.00