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August 7, 2012

Subject: RF MPE EXPOSURE
Re: FCC ID: PWO273470

To Whom It May Concern:

The MPE calculations for model 273470 signal booster were done for each frequency band: 700 MHz (Band 12), 700 MHz (Band 13), 2100 MHz, 800 MHz, 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:

700 MHz band (12):
1. Fixed Outside Antenna
2. Inside Antenna

700 MHz band (13):
3. Fixed Outside Antenna
4. Inside Antenna

2100 MHz band:
5. Fixed Outside Antenna
6. Inside Antenna

800 MHz band:
7. Fixed Outside Antenna
8. Inside Antenna

1900 MHz band:
9. Fixed Outside Antenna
10. Inside Antenna

The results of these calculations determine the safe distances and gains for antennas that may be connected to this signal booster as summarized below:

	Fixed Outside Antenna	Inside Antenna
Maximum Gain less Cable Loss (dBi)	2.8	10.1
Minimum Distance from All People (inches/cm)	27/67	8/20

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	698
Pout Watts	0.81200
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Distance From Antenna In cm	66.5

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Distance From Antenna In Inches	26.18
ERP (Watts)	15.6571
EIRP (Watts)	25.6777
FCC Power Density Limit (mw/cm^2)	0.47
Calculated Power Density (mw/cm^2)	0.46

REFERENCE DATA

Pout dBm	29.10
Antenna Gain (non-log)	31.62
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	728
Pout Watts	0.23500
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.10
Coax Loss dB	0.00
Distance From Antenna In cm	20.0

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	10.10
Distance From Antenna In Inches	7.87
ERP (Watts)	1.4663
EIRP (Watts)	2.4047
FCC Power Density Limit (mw/cm^2)	0.49
Calculated Power Density (mw/cm^2)	0.48

REFERENCE DATA

Pout dBm	23.71
Antenna Gain (non-log)	10.23
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	776
Pout Watts	0.69200
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Distance From Antenna In cm	58.2

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Distance From Antenna In Inches	22.91
ERP (Watts)	13.3433
EIRP (Watts)	21.8830
FCC Power Density Limit (mw/cm^2)	0.52
Calculated Power Density (mw/cm^2)	0.51

REFERENCE DATA

Pout dBm	28.40
Antenna Gain (non-log)	31.62
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	746
Pout Watts	0.23500
Duty Cycle Percent	100.0%
Ant. Gain dBi	10.10
Coax Loss dB	0.00
Distance From Antenna In cm	20.0

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	10.10
Distance From Antenna In Inches	7.87
ERP (Watts)	1.4663
EIRP (Watts)	2.4047
FCC Power Density Limit (mw/cm^2)	0.50
Calculated Power Density (mw/cm^2)	0.48

REFERENCE DATA

Pout dBm	23.71
Antenna Gain (non-log)	10.23
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	1710
Pout Watts	0.51300
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.80
Coax Loss dB	0.00
Distance From Antenna In cm	20.0

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.80
Distance From Antenna In Inches	7.87
ERP (Watts)	0.5960
EIRP (Watts)	0.9775
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.19

REFERENCE DATA

Pout dBm	27.10
Antenna Gain (non-log)	1.91
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	2110
Pout Watts	0.19100
Duty Cycle Percent	100.0%
Ant. Gain dBi	14.10
Coax Loss dB	0.00
Distance From Antenna In cm	20.0

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	14.10
Distance From Antenna In Inches	7.87
ERP (Watts)	2.9936
EIRP (Watts)	4.9095
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.98

REFERENCE DATA

Pout dBm	22.81
Antenna Gain (non-log)	25.70
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	824
Pout Watts	0.81200
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Distance From Antenna In cm	61.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Distance From Antenna In Inches	24.13
ERP (Watts)	15.6571
EIRP (Watts)	25.6777
FCC Power Density Limit (mw/cm^2)	0.55
Calculated Power Density (mw/cm^2)	0.54

REFERENCE DATA

Pout dBm	29.10
Antenna Gain (non-log)	31.62
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	869
Pout Watts	0.18600
Duty Cycle Percent	100.0%
Ant. Gain dBi	11.20
Coax Loss dB	0.00
Distance From Antenna In cm	20.0

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	11.20
Distance From Antenna In Inches	7.87
ERP (Watts)	1.4951
EIRP (Watts)	2.4520
FCC Power Density Limit (mw/cm^2)	0.58
Calculated Power Density (mw/cm^2)	0.49

REFERENCE DATA

Pout dBm	22.70
Antenna Gain (non-log)	13.18
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	1850
Pout Watts	0.81300
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Distance From Antenna In cm	45.4

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Distance From Antenna In Inches	17.87
ERP (Watts)	15.6764
EIRP (Watts)	25.7093
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.99

REFERENCE DATA

Pout dBm	29.10
Antenna Gain (non-log)	31.62
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	1930
Pout Watts	0.19100
Duty Cycle Percent	100.0%
Ant. Gain dBi	14.10
Coax Loss dB	0.00
Distance From Antenna In cm	20.0

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	14.10
Distance From Antenna In Inches	7.87
ERP (Watts)	2.9936
EIRP (Watts)	4.9095
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.98

REFERENCE DATA

Pout dBm	22.81
Antenna Gain (non-log)	25.70
Coax loss (non-log)	1.00
General FCC Limit (mw/cm^2)	1.00