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June 28, 2012

Subject: RF MPE EXPOSURE

Re: FCC ID: PWO273201

To Whom It May Concern:

The MPE calculations for model 273201 signal booster were done for each frequency band: 800 MHz and 1900 MHz. For each band three calculations were done; these included the different possibilities of antennas that may be connected to this signal booster: fixed outside, mobile outside, and inside antennas. The order of the attached calculations is as follows:

800 MHz band:

1. Fixed Outside Antenna
2. Mobile Outside Antenna
3. Inside Antenna

1900 MHz band:

4. Fixed Outside Antenna
5. Mobile Outside Antenna
6. Inside Antenna

The results of these calculations determine the safe distances and gains for antennas that may be connected to this signal booster as explained in the user manual.



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

Frequency MHz	824
Pout Watts	1.04700
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Evaluation Distance From Antenna In cm	70.0


### RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Evaluation Distance From Antenna In Inches	27.56
ERP (Watts)	20.1884
EIRP (Watts)	33.1090
FCC Limit at Above Frequency (mw/cm <sup>2</sup> )	0.55
Calculated Power Density With Above Input Data (mw/cm <sup>2</sup> )	0.54

### REFERENCE DATA

Pout dBm	30.20
Antenna Gain (non-log)	31.62
Coax loss (non-log)	1.00
General FCC Limit (mw/cm <sup>2</sup> )	f/1500

### SUMMARY FOR PUBLICATION

For Amplifier Model Number:	273201
Frequency Band (MHz)	824-849 MHz (Uplink)
Mobile or Fixed?	Fixed
Outside or Inside Antenna?	Outside
Antenna Type:	Any antenna whose gain less cable loss does not exceed 15 dBi
Safe Distance (inches):	28 inches
Signature:	
Date:	May 23, 2012



## Minimum Safe Distance From Antennas Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

Frequency MHz	824
Pout Watts	1.04700
Duty Cycle Percent	100.0%
Ant. Gain dBi	3.70
Coax Loss dB	0.00
Evaluation Distance From Antenna In cm	20.0


### RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	3.70
Evaluation Distance From Antenna In Inches	7.87
ERP (Watts)	1.4966
EIRP (Watts)	2.4544
FCC Limit at Above Frequency (mw/cm <sup>2</sup> )	0.55
Calculated Power Density With Above Input Data (mw/cm <sup>2</sup> )	0.49

### REFERENCE DATA

Pout dBm	30.20
Antenna Gain (non-log)	2.34
Coax loss (non-log)	1.00
General FCC Limit (mw/cm <sup>2</sup> )	f/1500

### SUMMARY FOR PUBLICATION

For Amplifier Model Number:	273201
Frequency Band (MHz)	824-849 MHz (Uplink)
Mobile or Fixed?	Mobile
Outside or Inside Antenna?	Outside
Antenna Type:	Any antenna whose gain less cable loss does not exceed 2.3 dBi
Safe Distance (inches):	8 inches
Signature:	
Date:	May 23, 2012



## Minimum Safe Distance From Antennas Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

Frequency MHz	869
Pout Watts	0.00910
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Evaluation Distance From Antenna In cm	20.0


### RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Evaluation Distance From Antenna In Inches	7.87
ERP (Watts)	0.1755
EIRP (Watts)	0.2878
FCC Limit at Above Frequency (mw/cm <sup>2</sup> )	0.58
Calculated Power Density With Above Input Data (mw/cm <sup>2</sup> )	0.06

### REFERENCE DATA

Pout dBm	9.59
Antenna Gain (non-log)	31.62
Coax loss (non-log)	1.00
General FCC Limit (mw/cm <sup>2</sup> )	f/1500

### SUMMARY FOR PUBLICATION

For Amplifier Model Number:	273201
Frequency Band (MHz)	869-894 MHz (Downlink)
Mobile or Fixed?	Fixed/Mobile
Outside or Inside Antenna?	Inside
Antenna Type:	Any antenna whose gain less cable loss does not exceed 15 dBi
Safe Distance (inches):	8 inches
Signature:	
Date:	May 23, 2012



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

Frequency MHz	1850
Pout Watts	1.17500
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Evaluation Distance From Antenna In cm	55.0


### RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Evaluation Distance From Antenna In Inches	21.65
ERP (Watts)	22.6566
EIRP (Watts)	37.1568
FCC Limit at Above Frequency (mw/cm <sup>2</sup> )	1.00
Calculated Power Density With Above Input Data (mw/cm <sup>2</sup> )	0.98

### REFERENCE DATA

Pout dBm	30.70
Antenna Gain (non-log)	31.62
Coax loss (non-log)	1.00
General FCC Limit (mw/cm <sup>2</sup> )	1.00

### SUMMARY FOR PUBLICATION

For Amplifier Model Number:	273201
Frequency Band (MHz)	1850-1910 MHz (Uplink)
Mobile or Fixed?	Fixed
Outside or Inside Antenna?	Outside
Antenna Type:	Any antenna whose gain less cable loss does not exceed 15 dBi
Safe Distance (inches):	28 inches
Signature:	
Date:	May 23, 2012



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

Frequency MHz	1850
Pout Watts	1.17500
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.30
Coax Loss dB	0.00
Evaluation Distance From Antenna In cm	20.0


### RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.30
Evaluation Distance From Antenna In Inches	7.87
ERP (Watts)	1.2167
EIRP (Watts)	1.9954
FCC Limit at Above Frequency (mw/cm <sup>2</sup> )	1.00
Calculated Power Density With Above Input Data (mw/cm <sup>2</sup> )	0.40

### REFERENCE DATA

Pout dBm	30.70
Antenna Gain (non-log)	1.70
Coax loss (non-log)	1.00
General FCC Limit (mw/cm <sup>2</sup> )	1.00

### SUMMARY FOR PUBLICATION

For Amplifier Model Number:	273201
Frequency Band (MHz)	1850-1910 MHz (Uplink)
Mobile or Fixed?	Mobile
Outside or Inside Antenna?	Outside
Antenna Type:	Any antenna whose gain less cable loss does not exceed 2.3 dBi
Safe Distance (inches):	8 inches
Signature:	
Date:	May 23, 2012



# Minimum Safe Distance From Antennas

## Based upon FCC OET Bulletin 65 and other FCC Sources

### INPUT DATA

Frequency MHz	1930
Pout Watts	0.00680
Duty Cycle Percent	100.0%
Ant. Gain dBi	15.00
Coax Loss dB	0.00
Evaluation Distance From Antenna In cm	20.0

### RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	15.00
Evaluation Distance From Antenna In Inches	7.87
ERP (Watts)	0.1311
EIRP (Watts)	0.2150
FCC Limit at Above Frequency (mw/cm <sup>2</sup> )	1.00
Calculated Power Density With Above Input Data (mw/cm <sup>2</sup> )	0.04

### REFERENCE DATA

Pout dBm	8.33
Antenna Gain (non-log)	31.62
Coax loss (non-log)	1.00
General FCC Limit (mw/cm <sup>2</sup> )	1.00

### SUMMARY FOR PUBLICATION

For Amplifier Model Number:	273201
Frequency Band (MHz)	1930-1990 MHz (Downlink)
Mobile or Fixed?	Fixed/Mobile
Outside or Inside Antenna?	Inside
Antenna Type:	Any antenna whose gain less cable loss does not exceed 15 dBi
Safe Distance (inches):	8 inches
Signature:	
Date:	May 23, 2012