



May 13, 2024
Subject: RF MPE EXPOSURE
Re: FCC ID: PWO079

To Whom It May Concern:

The MPE calculations for model 460079 signal booster were done for each frequency band: 700 MHz Band 12, 700 MHz Band 13, 800 MHz Band 5, 1900 MHz Band 25, and 1700/2100 MHz Band 4. For each band, one calculation was done; this includes an outside antenna that may be connected to this signal booster. The order of the attached calculations is as follows:

700 MHz Band 12:

1. Outside Antenna: 314422
2. Outside Antenna: ANT000058

700 MHz Band 13:

3. Outside Antenna: 314422
1. Outside Antenna: ANT000058

800 MHz Band 5:

2. Outside Antenna: 314422
1. Outside Antenna: ANT000058

1900 MHz Band 25:

2. Outside Antenna: 314422
1. Outside Antenna: ANT000058

1700/2100 MHz Band 4:

2. Outside Antenna: 314422
1. Outside Antenna: ANT000058

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 EIRP:

$$\text{EIRP} = \text{Power Out (Watts)} * \text{Duty Cycle Percent} * \text{Antenna Gain (non-log)} * \text{Coax loss (non-log)}$$

The power density (mW/cm^2) is calculated using the following formula:

$$\text{Calculated Power Density} = 1000 * \text{EIRP (Watts)} / (4 * \pi * (\text{Distance from Antenna (cm)}^2))$$

Sincerely,

Ilesh Patel Senior Engineering Product Manager

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

Band 12 Uplink – 700MHz

INPUT DATA

Frequency MHz	1710
Pout Watts	0.20606
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.00
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.00
Distance From Antenna In Inches	7.99
EIRP (Watts)	0.3266
FCC Power Density Limit (mw/cm ²)	1.00
Calculated Power Density (mw/cm ²)	0.0631

REFERENCE DATA

Pout dBm	23.14
Antenna Gain (non-log)	1.58
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

Band 13 Uplink – 700MHz

INPUT DATA

Frequency MHz	1710
Pout Watts	0.22961
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.00
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.00
Distance From Antenna In Inches	7.99
EIRP (Watts)	0.3639
FCC Power Density Limit (mw/cm ²)	1.00
Calculated Power Density (mw/cm ²)	0.0703

REFERENCE DATA

Pout dBm	23.61
Antenna Gain (non-log)	1.58
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

Band 5 Uplink – 800MHz

INPUT DATA

Frequency MHz	1710
Pout Watts	0.19143
Duty Cycle Percent	100.0%
Ant. Gain dBi	2.00
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	2.00
Distance From Antenna In Inches	7.99
EIRP (Watts)	0.3034
FCC Power Density Limit (mw/cm ²)	1.00
Calculated Power Density (mw/cm ²)	0.0586

REFERENCE DATA

Pout dBm	22.82
Antenna Gain (non-log)	1.58
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

Band 25 Uplink – 1900MHz

INPUT DATA

Frequency MHz	1710
Pout Watts	0.22803
Duty Cycle Percent	100.0%
Ant. Gain dBi	5.00
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	5.00
Distance From Antenna In Inches	7.99
EIRP (Watts)	0.7211
FCC Power Density Limit (mw/cm ²)	1.00
Calculated Power Density (mw/cm ²)	0.1393

REFERENCE DATA

Pout dBm	23.58
Antenna Gain (non-log)	3.16
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

Band 4 Uplink – 1700MHz

INPUT DATA

Frequency MHz	1710
Pout Watts	0.23823
Duty Cycle Percent	100.0%
Ant. Gain dBi	5.00
Coax Loss dB	0.00
Distance From Antenna In cm	20.3

RESULTS OF CALCULATIONS

Ant. Gain less Coax Loss dBi	5.00
Distance From Antenna In Inches	7.99
EIRP (Watts)	0.7534
FCC Power Density Limit (mw/cm ²)	1.00
Calculated Power Density (mw/cm ²)	0.1455

REFERENCE DATA

Pout dBm	23.77
Antenna Gain (non-log)	3.16
Coax loss (non-log)	1.00
General FCC Limit (mw/cm ²)	1.00