To Whom It May Concern:

The MPE calculations for model F20G-CPAL-AB-C signal booster were done for each frequency band: 700 MHz Band 17, 700 MHz Band 13, 800 MHz, 1700/2100 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 17：
  1. Fixed Outside Antenna: Yagi 11dBi
  2. Inside Antenna: Omni 3dBi
- 700 MHz band 13：
  3. Fixed Outside Antenna: Yagi 11dBi
  4. Inside Antenna: Omni 3dBi
- 800 MHz band：
  5. Fixed Outside Antenna: Yagi 11dBi
  6. Inside Antenna: Omni 3dBi
- 1700/2100 MHz band：
  7. Fixed Outside Antenna: Panel 10dBi
  8. Inside Antenna: Omni 3dBi
- 1900 MHz band：
  9. Fixed Outside Antenna: Panel 10dBi
  10. Inside Antenna: Omni 3dBi

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 equivalent isotropic radiated power:

EIRP=Power Out (Watts) *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 $(cm)^2$))

Yagi 11dbi Antenna with 75' 5D N male Kit numbers: 11-7550

Input Data

Frequency MHz	704
Pout Watts	0.28
Duty Cicuit Percent	100%
Ant. Gain dBi	10
Coax Loss dB	4.6
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	5.4
Distance From Antenna In Inches	8
EIRP (Watts)	0.9772
FCC Power Density Limit (mw/cm^2)	0.47
Calculated Power Density (mw/cm^2)	0.19

Reference Data

Pout dBm	24.5
Antenna Gain (non-log)	10.0000
Coax Loss(non-log)	0.35
General FCC Limit (mw/cm^2)	f/1500

Omni 3dBi Antenna with 15' 5D N Male Kit numbers:3-1550

Input Data

Frequency MHz	734
Pout Watts	0.01
Duty Cicuit Percent	100%
Ant. Gain dBi	3
Coax Loss dB	1.6
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	1.4
Distance From Antenna In Inches	8
EIRP (Watts)	0.00537
FCC Power Density Limit (mw/cm^2)	0.49
Calculated Power Density (mw/cm^2)	0.001476

Reference Data

Pout dBm	7.3
Antenna Gain (non-log)	1.995262315
Coax Loss(non-log)	0.69
General FCC Limit (mw/cm^2)	f/1500

Yagi 11dbi Antenna with 75' 5D N male Kit numbers: 11-7550

Input Data

Frequency MHz	777
Pout Watts	0.22
Duty Cicuit Percent	100%
Ant. Gain dBi	10
Coax Loss dB	4.6
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	5.4
Distance From Antenna In Inches	8
EIRP (Watts)	0.21878
FCC Power Density Limit (mw/cm^2)	0.52
Calculated Power Density (mw/cm^2)	0.15

Reference Data

Pout dBm	23.4
Antenna Gain (non-log)	10
Coax Loss(non-log)	0.35
General FCC Limit (mw/cm^2)	f/1500

Omni 3dBi Antenna with 15' 5D N Male Kit numbers:3-1550

Input Data

Frequency MHz	746
Pout Watts	0.004365158
Duty Cicuit Percent	100%
Ant. Gain dBi	3
Coax Loss dB	1.6
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	1.4
Distance From Antenna In Inches	8
EIRP (Watts)	0.004365158
FCC Power Density Limit (mw/cm^2)	0.50
Calculated Power Density (mw/cm^2)	0.001199362

Reference Data

Pout dBm	6.4
Antenna Gain (non-log)	1.995262315
Coax Loss(non-log)	0.69
General FCC Limit (mw/cm^2)	f/1500

Yagi 11dbi Antenna with 75' 5D N male Kit numbers: 11-7550

Input Data

Frequency MHz	824
Pout Watts	0.28
Duty Cicuit Percent	100%
Ant. Gain dBi	10
Coax Loss dB	4.6
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	5.4
Distance From Antenna In Inches	8
EIRP (Watts)	0.281838
FCC Power Density Limit (mw/cm^2)	0.55
Calculated Power Density (mw/cm^2)	0.19

Reference Data

Pout dBm	24.5
Antenna Gain (non-log)	10
Coax Loss(non-log)	0.35
General FCC Limit (mw/cm^2)	f/1500

Omni 3dBi Antenna with 15' 5D N Male Kit numbers:3-1550

Input Data

Frequency MHz	869
Pout Watts	0.01
Duty Cicuit Percent	100%
Ant. Gain dBi	3
Coax Loss dB	1.6
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	1.4
Distance From Antenna In Inches	8
EIRP (Watts)	0.007943
FCC Power Density Limit (mw/cm^2)	0.58
Calculated Power Density (mw/cm^2)	0.00218

Reference Data

Pout dBm	9
Antenna Gain (non-log)	1.995262315
Coax Loss(non-log)	0.69
General FCC Limit (mw/cm^2)	f/1500

Panel 10dbi Antenna with 30’ 5D N male Kit numbers:10-3050

Input Data

Frequency MHz	1710
Pout Watts	0.23
Duty Cicuit Percent	100%
Ant. Gain dBi	9.4
Coax Loss dB	3.2
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	6.2
Distance From Antenna In Inches	8
EIRP (Watts)	0.234423
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.19

Reference Data

Pout dBm	23.7
Antenna Gain (non-log)	8.7096359
Coax Loss(non-log)	0.48
General FCC Limit (mw/cm^2)	1

Omni 3dBi Antenna with 15' 5D N Male Kit numbers:3-1550

Input Data

Frequency MHz	2110
Pout Watts	0.0026303
Duty Cicuit Percent	100%
Ant. Gain dBi	3
Coax Loss dB	2
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	1
Distance From Antenna In Inches	8
EIRP (Watts)	0.00263
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.000659

Reference Data

Pout dBm	4.2
Antenna Gain (non-log)	1.995262315
Coax Loss(non-log)	0.63
General FCC Limit (mw/cm^2)	1

Panel 10dbi Antenna with 30’ 5D N male Kit numbers:10-3050

Input Data

Frequency MHz	1850
Pout Watts	0.23
Duty Cicuit Percent	100%
Ant. Gain dBi	9.4
Coax Loss dB	3.2
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	6.2
Distance From Antenna In Inches	8
EIRP (Watts)	0.229087
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.19

Reference Data

Pout dBm	23.6
Antenna Gain (non-log)	8.7096359
Coax Loss(non-log)	0.48
General FCC Limit (mw/cm^2)	1

Omni 3dBi Antenna with 15' 5D N Male Kit numbers:3-1550

Input Data

Frequency MHz	1930
Pout Watts	0.002041738
Duty Cicuit Percent	100%
Ant. Gain dBi	3
Coax Loss dB	2
Distance From Antenna In cm	20

Results Of Calculations

Ant.Gain less Coax Loss dBi	1
Distance From Antenna In Inches	8
EIRP (Watts)	0.002042
FCC Power Density Limit (mw/cm^2)	1.00
Calculated Power Density (mw/cm^2)	0.000512

Reference Data

Pout dBm	3.1
Antenna Gain (non-log)	1.995262315
Coax Loss(non-log)	0.63
General FCC Limit (mw/cm^2)	1