Apr. 11, 2017

Subject: **RF MPE Exposure**

Re: FCC ID: 2ALGRPLX-BU85

The MPE calculation for model PLX-85 signal booster were done for frequency band 824-849, Foe each two calculations were done, these included the worst-case scenario for each of the different types of antennas that may be connected to this signal booster: outside and inside antenna. The order of the attached calculations is as follows:

850MHz band:

1. Outside antenna: Opinion 9(Reference to antenna kitting)
2. Inside antenna: Opinion 4(Reference to antenna kitting)

A booster's uplink power must not exceed 1 Watt equivalent isotropic power for each band of operation, Composite downlink power must not exceed 0.05 watt EIRP for each band of operation. 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/c ㎡) is calculated using the following formula:

Calculated Power density=1000*EIRP(Watts)/(4* π *(Distance form antenna(cm)^2))

Minimum Safe Distance From Antennas

Based upon FCC OET Bulletin 65 and other FCC Sources

Input data

Frequency MHz	839.00
Pout Watts	0.046
Duty cycle percent	100%
Ant. Gain dBi	10
Coax Loss dB	3.22
Distance From Antenna In cm	20.0

Results of calculations

Ant. Gain less Coax Loss dBi	6.78
Distance From Antenna In Inches	7.87
EIRP(Watts)	0.97
FCC Power Density Limit (mW/c ㎡)	0.56
Calculated Power Density (mW/c ㎡)	0.19

Reference data

Pout dBm	16.63
Antenna Gain (non-log)	10
Coax loss (non-log)	2.1
General FCC Limit (mW/c ㎡)	F/1500

Input data

Frequency MHz	878.70
Pout Watts	0.006
Duty cycle percent	100%
Ant. Gain dBi	8.45
Coax Loss dB	3.98
Distance From Antenna In cm	20.0

Results of calculations

Ant. Gain less Coax Loss dBi	4.47
Distance From Antenna In Inches	7.87
EIRP(Watts)	0.017
FCC Power Density Limit (mW/c ㎡)	0.59
Calculated Power Density (mW/c ㎡)	0.003

Reference data

Pout dBm	7.58
Antenna Gain (non-log)	7
Coax loss (non-log)	0.4
General FCC Limit (mW/c ㎡)	F/1500

Results: PASS