



August 30, 2016

Compliance Testing LLC
1724 S. Nevada Way
Mesa, AZ 85204

RE: Maximum Permissible Exposure

FCC ID: EZZ25999
Model: 3-25999-XX
800MHz Public Safety Class B Signal Booster

To Whom It May Concern:

The equipment operating in the 800MHz Public Safety Band requires a separation distance of at least 27cm on the Donor antenna and at least 21cm on the DAS antenna. This distance must be maintained between the user and antenna when the product is used with a 0dBi antenna.

The equipment operating in the 800MHz CMRS Band requires a separation distance of at least 21cm on the Donor antenna and 27cm on the DAS antenna. This distance must be maintained between the user and antenna when the product is used with a 0dBi antenna.

This was calculated by the following:

MPE limit according to 47CFR §1.1310

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f ²)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30

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DELTANODE • Hammarby Fabriksväg 61, 6tr • SE 120 30 Stockholm, Sweden • +46.708.781.511 • www.deltanode.com

1500–100,000			1.0	30
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The power density can be calculated from the equation below (equation #4 from OET Bulletin 65, 97-01 edition, page 19)

$$S = \frac{P \cdot G}{4 \cdot \pi \cdot R^2}$$

S Power Density (mW/cm²)

P Conducted Power (mW)

R Distande (cm)

G Numerical Antenna Gain

From this equation we can calculate the safety distance needed to fulfil the MPE limits

In the calculations we have assumed no feeder loss and the max antenna gain was calculated based on the noise figure limits.

				G	P	S	S	R
Amplifier	Freq (MHz)	Output power to antenna (dBm)	Antenna gain (max) (dBi)	Antenna Gain Numerical	TX Power conducted (mW)	Power density limit* (mW/cm ²)	Power density calculated (mW/cm ²)	Calculated safety distance (cm)
800PS DL	856	34.16	0	1.00	3127	0.57	0.62	20.9
800PS UL	811	36.12	0	1.00	4911	0.54	0.98	26.9
800 CMRS DL	817.83	36.18	0	1.00	4979	0.55	0.99	27.0
800 CMRS UL	868.93	34.42	0	1.00	3320	0.58	0.66	21.4

* Limit for General Population/Uncontrolled Exposure

Please contact me if there is any other information you may need.

Sincerely,



Amy L Sanvido

On behalf of Deltanode Solutions AB, a Bird Technologies Company

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