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To: Whom it May Concern

Subject: Calculated Mobile Station Coupling Losses (MSCL) For FCCID: PWO460005

The following formulas were used to calculate MSCL with a 6 foot path loss and a 45 degree polarity mismatch between the inside antenna and the mobile device:

Path Loss dB = 36.6 dB + 20Log(F MHz) dB+ 20Log(D<sub>miles</sub>) dB

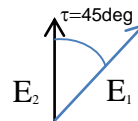
Polarity Loss dB = 10Log(E<sub>1</sub>/E<sub>2</sub>)<sup>2</sup> dB = P<sub>L</sub> dB

P<sub>L</sub> dB = 10Log(E<sub>1</sub><sup>2</sup>/(E<sub>1</sub>Sin(45<sub>deg</sub>))<sup>2</sup>) dB = 20Log(1/Sin(45<sub>deg</sub>)) dB = 3.01dB

Where:

E<sub>1</sub> = Maximum Possible Magnitude of the Electric Field from the Mobile Device

E<sub>2</sub> = Magnitude of the electric field from the Mobile device with a 45deg polarity mismatch = E<sub>1</sub>Sin(τ).



MSCL dB = Path Loss dB + Polarity Loss dB - Antenna Gain dB

The results of the calculations are shown in the following table:

Uplink Center Frequency MHz	836.5	1880-1882.5
Path Loss (dB)	36.16	43.21
Polarity Loss (dB)	3	3
Antenna Gain with Coax Loss	2.12	7.49
<b>MSCL (dB)</b>	<b>37.04</b>	<b>38.72</b>

Note: Antenna Gain with Coax Loss as measured.

Sincerely

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